

Compounds and methods for treating pain

The present invention relates to the field of method of treatment of pain and the provision of pharmaceutical compounds suitable for such treatments.

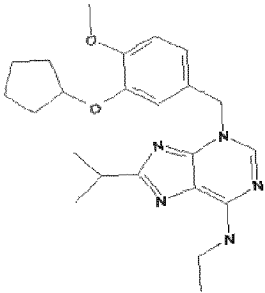
Acute and chronic pain affects millions of people after injury or surgery and those suffering from diseases like arthritis, cancer, and diabetes. Nociception (the detection of noxious or damaging stimuli) serves a crucial biological purpose: it alerts living organisms to environmental dangers, inducing the sensation of pain, reflex withdrawal and complex behavioural and emotional responses, which protect the organism from further damage. Noxious stimuli are detected by specialized high threshold primary sensory neurons (nociceptors), which transfer signals to the spinal cord and then transmit them to the brain for higher level processing that results in the conscious awareness of the sensation called pain. The functional importance of pain perception is exemplified by individuals with defects in nociception; patients with congenital insensitivity to pain do not survive past their twenties.

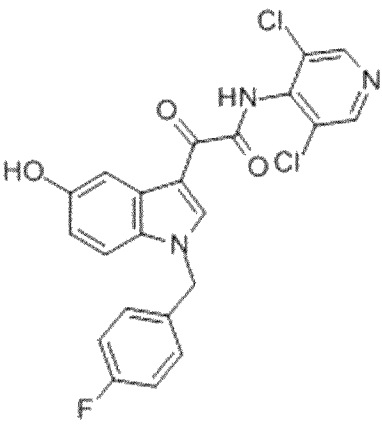
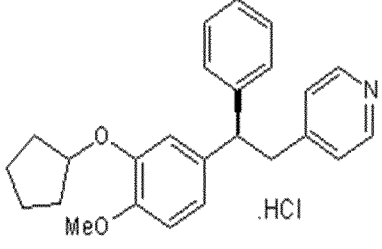
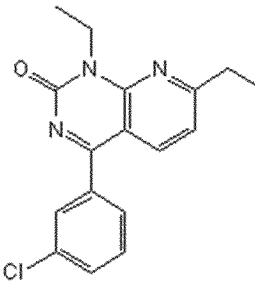
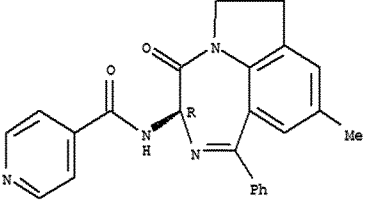
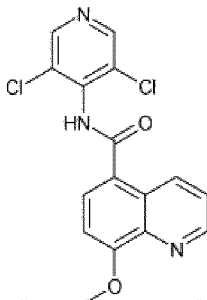
Two basic types of pain can be distinguished - acute and chronic. Acute or nociceptive pain is generally self-limiting and serves a protective biological function by warning of ongoing tissue damage caused by noxious chemical, thermal and mechanical stimuli. Examples of nociceptive pain include: post-operative pain, pain associated with trauma, and the pain associated with arthritis. Chronic pain, on the other hand, serves no protective biological function, and reflects either poor resolution of the painful stimuli, or is itself a disease process. Chronic pain is unrelenting and not self-limiting and can persist for years and even decades after the initial injury. Chronic pain is predominantly neuropathic in nature and may involve damage either to the peripheral or central nervous systems.

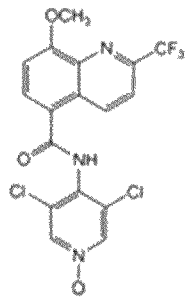
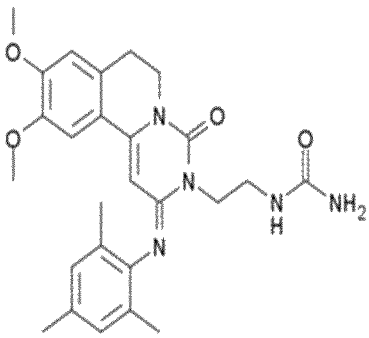
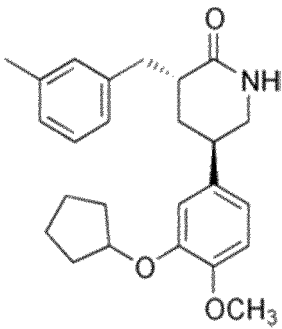
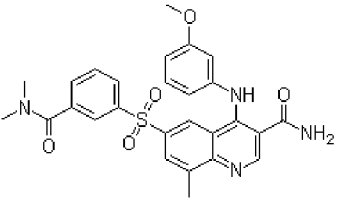
It is a goal of the present invention to provide methods of treating, ameliorating or suppressing pain, in particular by the use of novel compounds for this purpose.

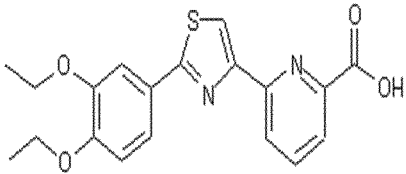
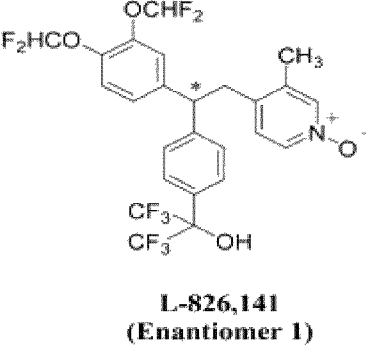
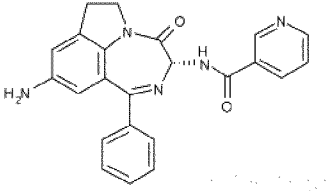
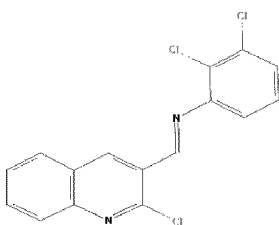
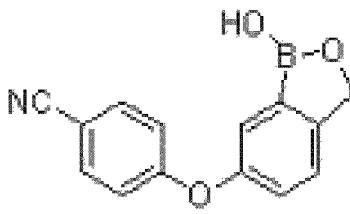
The present invention therefore provides the use of new classes of compounds for the treatment, prevention or reduction of pain. These compounds are given in the claims, and especially include Tenofovir (PMPA), dasatinib, AMG-706 (motesanib), BIRB

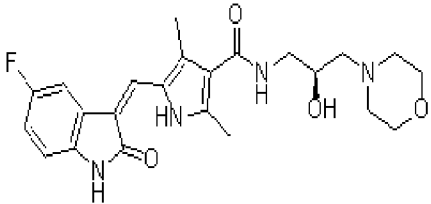
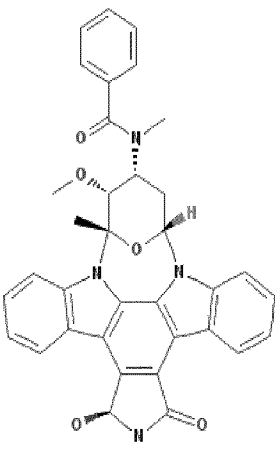
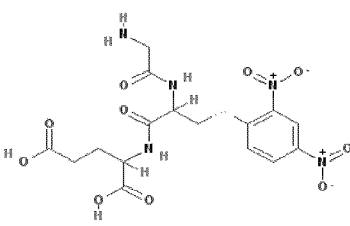
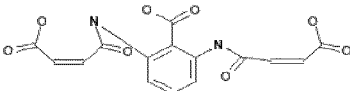
796 (Doramapimod), EKB-569 (Pelitinib), sorafenib , Vandetanib, CI-1033 (Canertinib), NSC161613, N6-Benzyladenosine-5'-phosphate, p-Aminobenzoyl PAB-J acid, NSC47091, cilomilast , Nicotinamide (Nicotinamide), IBMX, Roflumilast, Filaminast, Piclamilast, V11294, CC-10004 (Apremilast), LAS31025 (Arofylline), CP80633 (Atizoram), Ca-tramilast/Atopik (Catramilast), BRL-61063 (Cimpifylline), Daxalipram/mesopram (Daxalipram), Doxofylline, Drotaverine, Efloxate, Etamiphylline, Etazolate, Etofylline, Glaucine Hydrobromide (Broncholytine), GRC3886 (oglemilast), oxtriphyllin (Choline theophyllinate), Pumafentrine, Revamilast, Tofimilast, Tolafentrine, Seoanin (Trepidil), GW 842470 (AWD 12-281), CDP-840, YM-976, CI-1018, D-4418, Lirimilast, SCH-351591, RPL-554, IPL-455903 (HT-0712), GSK256066, Zardaverine, Vardenafil, OPC-6535 (Tetomilast), IC485, L-826,141, ONO-6126, CI-1044, MK-0873, T-2585, R1533 (MEM-1414), Ronomilast (ELB-353), UK-500,001, AN2728 , DE-103, Tofisopam, (R)-Tofisopam (Dex-tofisopam), (S)-Tofisopam (Levotofisopam (USAN)), EKB-568, SU-14813, LY-333531 (Ruboxistaurin), CGP-52421, SKI-606 (Bosutinib), Roscovitine, Tenofovir (PMPA), Methimazole, Adefovir dipivoxil (Bis-POM PMEA) (Adefovir), Acetazolamide, midostaurin (PKC-412), tozasertib (MK-0457, VX 680) or lestaurtinib (CEP-701). A further compound is imatinib (STI-571), which is preferably used in the treatment on non-inflammatory pain, especially in the treatment of neuropathic pain. Alternative names or identification of the compounds are given in brackets. Chemical structures of some of these compounds are given as follows:

V11294	-[(3-cyclopentyloxy-4-methoxyphenyl)methyl]-N-ethyl-8-propan-2-ylpurin-6-amine:	
--------	---	--

GW 842470 (AWD 12-281)	N-(3,5-dichloropyridin-4-yl)-2-[1-[(4-fluorophenyl)methyl]-5-hydroxyindol-3-yl]-2-oxoacetamide	
CDP-840	4-[(2R)-2-[3-(Cyclopentyloxy)-4-methoxyphenyl]-2-phenylethyl]-pyridine hydrochloride	
YM-976	4-(3-Chlorophenyl)-1,7-diethylpyrido[2,3-d]pyrimidin-2(1H)-one	
CI-1018	N-[9-Methyl-4-oxo-1-phenyl-3,4,6,7-tetrahydro-pyrrolo[3,2,1-jk][1,4]benzodiazepin-3(R)-yl]pyridine-4-carboxamide	
D-4418	-(3,5-Dichloro-4-pyridinyl)-8-methoxyquinoline-5-carboxamid	

SCH-351591	3,5-dichloro-4-(8-methoxy-2-(trifluoromethyl)quinolin-5-ylcarboxamido)pyridine-1-oxide	 SCH 351591
RPL-554	N-{2-[(2E)-2-(mesitylimino)-9,10-dimethoxy-4-oxo-6,7-dihydro-2H-pyrimido[6,1-a]-isoquinolin-3(4H)-yl]ethyl}urea	
IPL-455903 (HT-0712)	(3R,5R)-5-(3-(cyclopentyloxy)-4-methoxyphenyl)-3-(3-methylbenzyl)piperidin-2-one	
GSK256066	6-[[3-[(Dimethylamino)carbonyl]phenyl]sulfonyl]-4-[(3-methoxyphenyl)amino]-8-methyl-3-quinolinecarboxamide	

OPC-6535	6-[2-(3,4-diethoxyphenyl)-1,3-thiazol-4-yl]pyridine-2-carboxylic acid	
L-826,141	4-[2-[3,4-Bis(difluoromethoxy)phenyl]-2-[4-[2,2,2-trifluoro-1-hydroxy-1-(trifluoromethyl)ethyl]phenyl]ethyl]-3-methylpyridine N-oxide	
CI-1044	N-(9-amino-4-oxo-1-phenyl-3,4,6,7-tetrahydro(1,4)diazepino(6,7,1-hi)indol-3-yl)nicotinamide	
MK-0873	(-)-trans-2-(3'-(3-(N-Cyclopropylcarbamoyl)-4-oxo-1,4-dihydro-1,8-naphthyridin-1-yl)-3-fluorobiphenyl-4-yl) cyclopropanecarboxylic acid	
T-2585		
AN2728	5-(4-cyanophenoxy)-2,3-dihydro-1-hydroxy-2,1-benzoxaborole	

SU-14813	(S,Z)-5-((5-fluoro-2-oxoindolin-3-ylidene)methyl)-N-(2-hydroxy-3-morpholinopropyl)-2,4-dimethyl-1H-pyrrole-3-carboxamide	
CGP-52421		
NSC161613	2-[[2-[(2-aminoacetyl)amino]-3-(2,4-dinitrophenyl)sulfanylpropanoyl]amino]pentanedioic acid	
NSC47091	2-(3-carboxyprop-2-enoylamino)-6-[[[(Z)-3-carboxyprop-2-enoyl]amino]benzoic acid	

In preferred embodiments the inventive compound is an inhibitor (i.e. an antagonist) or modulator of any one of FRK, PDE4D, LPAR3, CAMK1D, CSNK1G3 or FMO3. Inhibitors or ligands (i.e. binders) or modulators of FRK, PDE4D, LPAR3, CAMK1D, CSNK1G3 or FMO3 can be used in the treatment of pain in a subject. In preferred embodiments the FRK, PDE4D, LPAR3, CAMK1D, CSNK1G3 or

FMO3 modulator is a selective FRK, PDE4D, LPAR3, CAMK1D, CSNK1G3 or FMO3 modulator. By "selective" it is meant that the affinity for one of FRK, PDE4D, LPAR3, CAMK1D or FMO3 is at least 10-fold, preferably 25-fold, more preferred 100-fold, still preferred 150-fold higher than the affinity of the other targets selected from FRK, PDE4D, LPAR3, CAMK1D or FMO3.

Surprisingly it has been shown that some of these targets, such as FRK, FMO3, LPAR3 can be both activated, e.g. by an agonist, or inhibited (e.g. by an inhibitor or antagonist) for an anti-pain effect in a patient. The group of agonists and antagonists is referred to herein as "modulators". Although in most cases an inhibitor is preferred for greater effect, it seems that modulation of activity of these targets in any direction reduces the pain or sensation of pain. Preferably the modulator is a strong binder to these targets, especially with a K_d of 1000 nM or less or an IC_{50} of 1000 nM or less. Preferred lower values for K_d and IC_{50} are 800 nM or less, 600 nM or less, 500 nM or less, 400 nM or less, 300 nM or less, 200 nM or less, 100 nM or less, 50 nM or less or even 30 nM or less.

In particular preferred are FMO3 modulators or inhibitors for use in the treatment of pain. Such compounds are e.g. Tenofovir and Methimazole.

In particular preferred are FRK modulators or inhibitors for use in the treatment of pain. Such compounds are e.g. dasatinib, motesanib, Doramapimod, Pelitinib, sorafenib, Vandetanib and Canertinib.

Preferably the inhibitor is selected from compounds with a K_d of lower than 3000 nM, preferably lower than 2000 nM, especially preferred lower than 1000 nM. In particular, these compounds can be selected from dasatinib (K_d 0.31 nM), motesanib (K_d 99 nM), Doramapimod (K_d 360 nM), Pelitinib (K_d 190 nM), sorafenib (K_d 440 nM) and Vandetanib (K_d 480 nM). The K_d may also be up to 750 nM or up to 500 nM.

K_d , K_i or IC_{50} values of course relate to the binding or inhibiting capability of a given compound on a given target, such as one of FRK, PDE4D, LPAR3, CAMK1D, CSNK1G3 or FMO3, as associated herein.

In preferred embodiments the FRK modulator is selected from compounds comprising a substituted pyridine, quinoline, isoquinoline or pyridine group.

In especially preferred embodiments the FRK modulator is an FRK inhibitor. An inhibitor or antagonist is a compound that lowers or inhibits the activity of a given target here FRK. This can be achieved by binding to the target, e.g. but not necessarily to the catalytic center, and preventing the catalytic activity of the target.

Preferably an inhibitor or modulator, in particular of FRK, is selected from compounds comprising a substituted pyrimidine, quinoline, isoquinoline or pyridine group, such as from motesanib (AMG-706), Pelitinib (EKB-569), sorafenib (sorafenib), Vandetanib (Vandetanib), canertinib (CI-1033).

Preferably an inhibitor or modulator, in particular of FRK, is selected from compounds comprising a substituted aniline group with a K_d value less than 1000 nM, such as dasatinib (dasatinib), motesanib (AMG-706), Doramapimod (BIRB 796), Pelitinib (EKB-569), sorafenib (sorafenib), Vandetanib (Vandetanib).

Preferably an inhibitor or modulator, in particular of FRK, is selected from compounds comprising a chlorine, fluorine or chlorine and fluorine substituted aniline group. Such compounds are e.g. dasatinib, Pelitinib, sorafenib, Vandetanib and canertinib.

In preferred embodiments an FRK inhibitor selected from compounds comprising an aniline group, selected from dasatinib (dasatinib), motesanib (AMG-706), doramapimod (BIRB 796), pelitinib (EKB-569), sorafenib (sorafenib), vandetanib (vandetanib), canertinib (CI-1033) and imatinib (STI-571) is for use in the treatment of neuropathic pain, such as trigeminal neuralgia, such as post-herpetic neuralgia, such as painful diabetic neuropathy, such as painful diabetic peripheral neuropathy, such as diabetic polyneuropathy, such as sciatic pain, such as radiculopathy, such as radicular pain or such as non-inflammatory neuropathic pain. The aniline group is preferably a substituted aniline group and is e.g. selected from a chloride and/or fluoride substituted aniline group or a carbonyl substituted aniline. Preferably the aniline group is a carbonyl substitution, such as in dasatinib (dasatinib), motesanib (AMG-706), doramapimod (BIRB 796), pelitinib (EKB-569), sorafenib (sorafenib), canertinib (CI-1033) and imatinib (STI-571), and can be used in the treatment of neuropathic pain.

In preferred embodiments the FRK inhibitor is a selective FRK inhibitor. By "selective" it is meant that the affinity for FRK is at least 10-fold, preferably 25-fold, more preferred 100-fold, still preferred 150-fold higher than the affinity for other tyrosine kinase receptors, especially one or both of FLT3 or c-Kit.

In further embodiments there is provided an LPAR3 inhibitor or modulator for use in the treatment of pain. Such a compound is e.g. selected from NSC161613, NSC47091, N6-Benzyladenosine-5'-phosphate, p-Aminobenzoyl PAB-J acid.

Surprisingly it could be shown that in case of LPAR3 both activators or agonists and inhibitors or antagonists can be effective in the treatment of pain. Thus any artificial change in the expression or activity of LPAR3 can ameliorate pain. Preferably the LPAR3 modulator is selected from compounds comprising N6-Benzyladenosine-5'-phosphate, p-Aminobenzoyl PAB-J acid, NSC161613 and NSC47091. In particular preferred cases the LPAR3 modulator is an LPAR3 inhibitor. Such an inhibitor is e.g. p-Aminobenzoyl PAB-J acid, NSC161613 or NSC47091.

In further embodiments there is provided a PDE4D inhibitor or modulator for use in the treatment of pain. Such a compound may be selected from cilomilast, Roflumilast, Filaminast, Piclamilast, V11294, Luteolin, Apremilast, Arofylline, Atizoram, Camtilast, Cimpifylline, Daxalipram, Doxofylline, drotaverin, Eflorate, Etamiphylline, Etazolate, Etofylline, Broncholytine, Irimilast, oglemilast, Choline theophyllinate, Pumafentrine, Revamilast, Ronomilast, Tofimilast, Tolafentrine, Trepidil, GW 842470 (AWD 12-281), CDP-840, YM-976, CI-1018, D-4418, Lirimilast, SCH-351591, RPL-554, IPL-455903 (HT-0712), GSK256066, Zardaverine, Vardenafil, Tetomilast, IC485, L-826,141, ONO-6126, CI-1044, MK-0873, T-2585, R1533 (MEM-1414), UK-500,001, AN2728, DE-103, Tofisopam, Dextofisopam, Levotofisopam (USAN).

Preferably the PDE4D inhibitor is selected from a compound comprising a 1,2-dioxy-aryl group with an IC_{50} value of 1100 nM or less, preferably 1050 nM or less, preferably 1000 nM or less, preferably 950 nM or less, preferably 950 nM or less, preferably 900 nM or less. Such a PDE4D inhibitor is preferably selected from cilomilast (cilomilast, IC_{50} of 11 nM), Roflumilast (Roflumilast, IC_{50} of 0.68 nM), Filaminast (Filaminast, IC_{50} of 1000 nM), Piclamilast (Piclamilast, IC_{50} of 0.02 nM), (

V11294, IC₅₀ of 200 nM), Apremilast (CC-10004), Atizoram (CP80633), Catramilast (Catramilast), Daxalipram (Daxalipram/mesopram, , IC₅₀ of 1100 nM), drotaverin (Drotaverine), (Glaucine Hydrobromide), oglemilast (GRC3886, IC₅₀ of 166 nM), Pumafentrine (Pumafentrine), Revamilast (Revamilast, IC₅₀ of 2.7 nM), Tolafentrine (Tolafentrine, IC₅₀ of 30 nM), (CDP-840, IC₅₀ of 2.1 nM), (RPL-554), (IPL-455903 (HT-0712)), Zardaverine (Zardaverine, IC₅₀ of 390 nM), Tetomilast (OPC-6535, IC₅₀ of 70 nM), (L-826,141, IC₅₀ of 2.4 nM), Ronomilast (ELB353 , IC₅₀ of 3.5 nM), Tofisopam (Tofisopam, IC₅₀ of 900 nM).

In a further preferred embodiment the PDE4D inhibitor or modulator comprises a 1,2-dioxy-aryl group substituted with an alkyl or flour-alkyl group, or 1,2-dioxy-aryl group condensed in a furan ring containing oxygen. Such a compound is e.g. selected from cilomilast (cilomilast), Roflumilast (Roflumilast), Filaminast (Filaminast), Piclamilast (Piclamilast), (V11294), Apremilast (CC-10004), Daxalipram (Daxalipram/mesopram), drotaverin (Drotaverine), broncholytine (Glaucine Hydrobromide), oglemilast (GRC3886), Pumafentrine (Pumafentrine), Revamilast (Revamilast), Tolafentrine (Tolafentrine), (RPL-554), Zardaverine (Zardaverine), Tetomilast (OPC-6535), (L-826,141), Ronomilast (ELB353), Tofisopam (Tofisopam).

In another aspect of PDE4D inhibitors or modulators there is provided a PDE4D inhibitor or modulator comprising a 3,5-dichlor-pyridine group or a pyridine group that is not condensed in a 2 ring structure. Such compounds may be selected from Roflumilast (Roflumilast), Piclamilast (Piclamilast), oglemilast (GRC3886), Revamilast (Revamilast), GW 842470 (AWD 12-281), D-4418, SCH-351591.

Also provided is a PDE4D inhibitor or modulator comprising a quinoline, isoquinoline or pyrimidine group. Such a compound can be selected from drotaverine (Drotaverine), Pumafentrine (Pumafentrine), Tolafentrine (Tolafentrine), Trapidil (Seoanin), D-4418, SCH-351591, RPL-554, SK256066, T-2585, Ronomilast (ELB353).

In a further embodiment the PDE4D inhibitor or modulator is selected from compounds comprising an aniline group, in particular preferred a carbonyl- or chlorine-substituted aniline. Such compounds are e.g. Apremilast (CC-10004), Arofylline (LAS31025), CI-1044, T-2585.

The PDE4D inhibitor or modulator for use according to the invention may comprise a purine ring. Such a compound can be selected from (IBMX), (V11294), Arofylline (LAS31025), Cimpfylline (BRL-61063), Doxofylline (Doxofylline), Etamiphylline (Etamiphylline), Etofylline (Etofylline), Choline theophyllinate (oxtriphyllin), Theophylline (Theophylline). These compounds are preferably used for the treatment of neuropathic pain, especially non-inflammatory neuropathic pain.

In a further embodiment the PDE4D inhibitor or modulator for use according to the invention is essentially the only active pharmaceutical ingredient of the composition or medicament according to the invention, such as the only active pharmaceutical ingredient, in particular the only anti-pain compound, of the composition or medicament according to the invention. Preferably the PDE4D inhibitor or modulator for use according to the invention is not combined with or used in combination with a phospholipase inhibitor. Especially preferred, CI-1018 is not combined with or used in combination with a phospholipase inhibitor when used according to the invention.

In further embodiments there is provided a CAMK1D inhibitor or modulator for use in the treatment of pain. Such a compound may be selected from Bosutinib, Pelitinib, EKB-568, SU-14813, Ruboxistaurin, CGP-52421.

The CAMK1D inhibitor or modulator preferably comprises a chlorine-substituted aniline group. Such compounds can be selected from Bosutinib (SKI-606) and Pelitinib (EKB-569).

Preferably the CAMK1D inhibitor is selected from the group of bosutinib (SKI-606), pelitinib (EKB-569), EKB-568 and CGP-52421 for use in the treatment of pain.

In preferred embodiments the CAMK1D modulator is a selective CAMK1D modulator. By "selective" it is meant that the affinity for CAMK1D is at least 10-fold, preferably 25-fold, more preferred 100-fold, still preferred 150-fold higher than the affinity for other tyrosine kinase receptors, especially one or both of FLT3 or c-Kit.

In further embodiments there is provided a CSNK1G3 inhibitor or modulator for use in the treatment of pain. Such compound can be roscovitine.

The CSNK1G3 inhibitor or modulator preferably comprises a purine ring. Such compound can be roscovitine.

In preferred embodiments the CSNK1G3 inhibitor is a selective CSNK1G3 inhibitor. By "selective" it is meant that the affinity for CSNK1G3 is at least 10-fold, preferably 25-fold, more preferred 100-fold, still preferred 150-fold higher than the affinity for other tyrosine kinase receptors, especially one or both of FLT3 or c-Kit.

In preferred embodiments of the invention the compound for use in the treatment of pain comprises a quinoline or isoquinoline group. Such compounds are e.g. Bosutinib, Pelitinib (EKB-569), drotaverin (Drotaverine), Pumafentrine (Pumafentrine), Tolafentrine (Tolafentrine), D-4418, SCH-351591, RPL-554, (GSK256066), T-2585, Ronomilast (ELB353), preferably the compound being an inhibitor of FRK, PDE4D or CAMK1D. These compounds are preferably for use in the treatment of neuropathic pain, preferably non-inflammatory neuropathic pain.

In preferred embodiments of the invention the compound for use in the treatment of pain comprises a chlorine-substituted aniline group. Such compounds are e.g. selected from dasatinib (dasatinib), bosutinib (SKI-606), sorafenib (sorafenib), Canertinib (CI-1033), Arofylline (LAS31025), T-2585, Pelitinib (EKB-569), preferably the compound being an inhibitor of FRK, PDE4D or CAMK1D. These compounds are preferably for use in the treatment of neuropathic pain, preferably non-inflammatory neuropathic pain.

The inventive compound can be used in combination with other active analgesic/anti-pain compounds, preferably only with those described herein or above or in the claims, or used as single active analgesic/anti-pain compound.

In preferred embodiments the compound for use according to the invention comprises a 1,2-Dioxyaryl group. Especially preferred the compound comprises a 1,2-Dioxyaryl group substituted with a basic residue, such as Vandetanib (Vandetanib), SKI-606 (Bosutinib). The compound may comprise a 1,2-Dioxyaryl group substituted with a cycloaliphatic residue, such as cilomilast (cilomilast), Roflumilast (Roflumilast), Filaminast (Filaminast), Piclamilast (Piclamilast), V11294, CP80633 (Atizoram), Catramilast/Atopik (Catramilast), CDP-840 , IPL-455903 (HT-0712). The compound may comprise a 1,2-dioxy-aryl substituted with an alkyl residue, such as CC-10004 (Apremilast), Daxalipram/mesopram (Daxalipram), Drotaverine (drotaverin),

Glaucine Hydrobromide (Broncholytine), Pumafentrine (Pumafentrine), Tolafentrine (Tolafentrine), RPL-554, Zardaverine (Zardaverine), OPC-6535 (Tetomilast), Tofisopam (Tofisopam). The compound may comprise a 1,2-dioxy-aryl substituted with a fluor-alkyl group, such as GRC3886 (oglemilast), Revamilast (Revamilast), Zardaverine (Zardaverine), L-826,141, ELB353 (Ronomilast). The compound may comprise a 1,2-dioxy-aryl in a condensed furan ring with an oxygen, such as GRC3886 (oglemilast), Revamilast (Revamilast).

In preferred embodiments the compound for use according to the invention comprises an indole group, especially an indole group as part of a ringsystem, such as CGP-52421, midostaurin (PKC-412).

In preferred embodiments the compound for use according to the invention comprises a substituted indole, such as GW 842470 (AWD 12-281), AMG-706 (motesanib), SU-14813 , LY-333531 (Ruboxistaurin), SKI-606 (Bosutinib).

In preferred embodiments the compound for use according to the invention comprises a purine ring, such as N6-Benzyladenosine-5'-phosphate, V11294, LAS31025 (Arofylline), BRL-61063 (Cimpifylline), Doxofylline (Doxofylline), Etamiphylline (Etamiphylline), Etofylline (Etofylline), ox-triphyllin (Choline theophyllinate), Roscovitine (Roscovitine), Tenofovir (PMPA) (Tenofovir), Remofovir (Pradefovir) , Adefovir dipivoxil (Bis-POM PMEA) (Adefovir).

In preferred embodiments the compound for use according to the invention comprises a sulfone or sulfonic acid or sulfonamide group, especially a methyl-suflone, such as Lirimilast (Lirimilast). The compound may comprise a siaryl-sulfone, such as GSK256066, Vardenafil (Vardenafil). The compound may comprise a sulfonic acid group, such as p-Aminobenzoly PAB-J acid. The compound may comprise a Sulfonamide group, such as Tolafentrine (Tolafentrine), Acetazolamide (Acetazolamide).

In preferred embodiments the compound for use according to the invention comprises a pyridine group. Preferably the compound comprises an unsubstituted pyridine radical, such as Nicotinamide (Nicotinamide), or CI-1044. The compound may comprise a 3,5 -Dichlorpyridine group, such as Roflumilast (Roflumilast), Piclamilast (Piclamilast), GRC3886 (oglemilast), Revamilast (Revamilast), GW 842470 (AWD 12-281), D-4418, SCH-

351591. The compound may comprise a substituted pyridine group, such as AMG-706 (motesanib), sorafenib (sorafenib), Etazolate (Etazolate), Tofimilast (Tofimilast), GSK256066, MK-0873.

In preferred embodiments the compound for use according to the invention comprises a quinolone or isoquinoline or condensed isoquinoline group. The compound may comprise a quinolone group such as EKB-569 (Pelitinib), D-4418, SCH-351591, GSK256066, MK-0873 , SKI-606 (Bosutinib). The compound may comprise a isoquinoline or condensed isoquinoline group, such as Drotaverine (drotaverin), Pumafentrine (Pumafentrine), Tolafentrine (Tolafentrine), RPL-554, ELB353 (Ronomilast).

In preferred embodiments the compound for use according to the invention comprises a pyrimidine group, such as Vandetanib (Vandetanib), CI-1033 (Canertinib), Seoanin (Trepidil), tozasertib (MK-0457, VX 680).

In preferred embodiments the compound for use according to the invention is a compound with 3 nitrogens in a ring structures, such as YM-976.

In preferred embodiments the compound for use according to the invention comprises a carbonic or phosphoric acid group. The compound may comprise a carbonic acid group, such as OPC-6535 (Tetomilast). The compound may comprise a phosphoric acid group, such as N6-Benzyladenosine-5'-phosphate, Tenofovir (PMPA) (Tenofovir).

In preferred embodiments the compound for use according to the invention comprises an esther group, such as Remofovir (Pradefovir) (Pradefovir), Adefovir dipivoxil (Bis-POM PMEA) (Adefovir).

In preferred embodiments the compound for use according to the invention comprises a aniline group, especially preferred a chloride and/or fluoride substituted aniline group. The compound may comprise a Chlor-fluor-aniline, such as EKB-569 (Pelitinib), CI-1033 (Canertinib). The compound may comprise a Chlor-aniline or dichlor-aniline, such as dasatinib (dasatinib), sorafenib (sorafenib), LAS31025 (Arofylline), T-2585 , SKI-606 (Bosutinib). The compound may comprise a Fluor-aniline, such as Vandetanib (Vandetanib), SU-14813.

In preferred embodiments the compound for use according to the invention comprises a carbonyl-substituted aniline, such as

dasatinib (dasatinib), AMG-706 (motesanib), BIRB 796 (Doramapimod), EKB-569 (Pelitinib), sorafenib (sorafenib), CI-1033 (Canertinib), p-Aminobenzoyl PAB-J acid, CC-10004 (Apremilast), CI-1044 , NSC47091.

In preferred embodiments the compound for use according to the invention comprises a diaryl-thioether group, such as tozasertib (MK-0457, VX 680).

In preferred embodiments the compound for use according to the invention comprises a 1,3-Dioxyaryl group, such as Efloxate (Efloxate).

In preferred embodiments the compound for use according to the invention is selected from Methimazole, AN2728, NSC161613, especially a compound without one or more or all of the above mentioned groups.

The present invention also provides a method of treating pain in a subject comprising the administration of a therapeutic compound selected from the compounds of table 1. In a related aspect the present invention provides the use of a compound of table 1 for the manufacture of an analgesic or a medicament for the treatment of pain in a subject. The invention is further defined by the subject matter of the claims.

The inventive compounds have been identified by a thorough screening system based on genetic analysis, starting from drosophila hits. *Drosophila* (fruit flies) respond to noxious stimuli, and have become a powerful model organism for studying genetics, including the genetics of nociception. For instance, the TRP channel *PAINLESS* was previously identified as a heat-responsive channel mediating thermal-based nociception in fly larvae. Using genome-wide neuronal-specific RNAi knock-down, the present invention provides a global screen for an innate behavior and identify hundreds of novel genes implicated in nociception in the fly, including the $\alpha 2\delta$ -family calcium channel subunit *straightjacket* or the phospholipid kinase PI3Kgamma. The initial drosophila screen yielded targets having homologous targets in various organisms, including humans. For example, observation of the mammalian straightjacket ortholog, $\alpha 2\delta 3$, and PI3Kgamma in nociception was confirmed in knock-out mice that exhibit significantly impaired basal pain sensitivity and delayed thermal hyperalgesia after inflammation. In humans, single nucleotide polymorphisms (SNPs) in $\alpha 2\delta 3$ or PIK3CG were found

that are associated with reduced acute pain sensitivity in healthy volunteers and chronic postsurgical back pain. Based on the validated genetic data various compounds have been identified that are capable of treating or suppressing pain in various organisms, in particular in humans. In a further screening, several compounds have been identified which modulate or antagonize or inhibit, that is lower the targets activity in vivo or as can be determined in an in vitro assay as described herein or known in the art (e.g. Enzyme activity assay to determine IC₅₀ values), which are active in the treatment or reduction of pain in a subject. In particular the compounds to be used in any form of treatment according to the present invention are selected from any one of (1S,2S)-2-(2-(N-((3-benzimidazol-2-yl)propyl)-N-methylamino)ethyl)-6-fluoro-1,2,3,4-tetrahydro-1-isopropyl-2-naphthyl cyclopropanecarboxylate dihydrochloride, (5-(2-methoxy-5-chloro-5-phenyl)furan-2-ylcarbonyl)guanidine, (6S)-5,6,7,8-tetrahydrofolic acid, (T,G)-A-L, 1 alpha-hydroxyergocalciferol, 1-(1-cyclohexylethylamino)-4-phenylphthalazine, 1-(2-methyl-4-methoxyphenyl)-4-((2-hydroxyethyl)amino)-6-trifluoromethoxy-2,3-dihydropyrrolo(3,2-c)quinoline, 1-(2,3-dichlorobenzoyl)-5-methoxy-2-methyl-(2-(mopholin-4-yl)ethyl)-1H-indole, 1-(2,3-dihydro-1,4-benzodioxin-5-yl)-4-((5-(4-fluorophenyl)-3-pyridinyl)methyl)piperazine, 1-(6-((3-methoxyestra-1,3,5(10)-trien-17-yl)amino)hexyl)-1H-pyrrole-2,5-dione, 1-adamantyl propargyl ether, 1-aminobenzotriazole, 1-aminooxy-3-aminopropane, 1-hydrazino-4-(3,5-dimethyl)-1-pyrazolyl-5H-pyridazino(4,5-b)indole, 1-hydroxymethylmidazolam, 1-hydroxypyrene, 1-Methyl-4-phenylpyridinium, 1-Nitropyren-8-ol, 1-phosphatidyl-1D-myo-inositol 3-phosphates, 1-stearoyl-2-oleoyl-sn-glycero-3-phosphocholine, 1,1-bis(3'-indolyl)-1-(4-t-butylphenyl)methane, 1,1-dimethylbutyl-1-deoxy-Delta(9)-THC, 1,1,1-trichloro-2-(4-hydroxyphenyl)-2-(4-methoxyphenyl)ethane, 1,2-bis(diphenylphosphino)ethane, 1,2-di-(4-sulfamidophenyl)-4-butylpyrazolidine-3,5-dione, 1,2-diacyl-sn-glycero-3-phosphocholines, 1,2-ethanedithiol, 1,2-oleoylphosphatidylcholine, 1,2,4-triazines, 1,25-dihydroxy-21-(3-hydroxy-3-methylbutyl)-23-yne-26,27-hexafluorocholecalciferol, 1,25-dihydroxyergocalciferol, 1,25D3, 1,3-Dcg, 1,3-dihydroxy-4,4,5,5-tetramethyl-2-(4-carboxyphenyl)tetrahydroimidazole, 1,3-dipropyl-8-(3-

noradamantyl)xanthine, 1,3,5-trimethylbenzene, 1,7-dioxa-2,6-diaza-4,4-dioxide-4,7a-dithia-3H,5H-benzo(cd)pentalene, 10-deoxymethynolide, 10-propargyl-10-deazaaminopterin, 10-undecynoic acid, 10,10-bis(4-pyridinylmethyl)-9(10H)-anthracenone, 11-cis-retinal, 11-hydroxycannabinol, 12-Hht, 13-Lox, 13-oxo-9,11-octadecadienoic acid, 15 hete, 15-Hydroxy-11 alpha,9 alpha-(epoxymethano)prosta-5,13-dienoic Acid, 17-(allylamino)-17-demethoxygeldanamycin, 17alpha-ethynylestradiol, 1843U89, 1D-myo-inositol 1,3,4,5-tetrakisphosphate, 1H-indole, 1H-pyrazole, 1H-pyrazolo(3,4-b)pyridine, 2 APB, 2-(1-(3-dimethylaminopropyl)-5-methoxyindol-3-yl)-3-(1H-indol-3-yl)maleimide, 2-(1-methyl-4-piperidinyl)-6-(2-phenylpyrazolo(1,5-a)pyridin-3-yl)-3(2H)-pyridazinone, 2-(2-hydroxyethylsulfanyl)-3-methyl-1,4-naphthoquinone, 2-(3,4-dimethoxyphenyl)-5-amino-2-isopropylvaleronitrile, 2-(4-amino-3-methylphenyl)-5-fluorobenzothiazole, 2-(4-morpholinoanilino)-6-cyclohexylaminopurine, 2-(4-morpholinyl)-8-phenyl-4H-1-benzopyran-4-one, 2-(4-toluidino)-6-naphthalenesulfonic acid, 2-(cyclohexylmethylidenehydrazino)adenosine, 2-AAF, 2-acetylthiomethyl-3-(4-methylbenzoyl)propionic acid, 2-AG, 2-amino-1-methyl-6-phenylimidazo(4,5-b)pyridine, 2-amino-3,4-dimethylimidazo(4,5-f)quinoline, 2-aminoethoxydiphenyl borate, 2-AP, 2-CADO, 2-chloro-5-nitrobenzanilide, 2-cyano-3-hydroxy-N-(4-(trifluoromethyl)phenyl)-2-hepten-6-ynamide, 2-cyanomethylthiopyridine-4-carbonitrile, 2-cyclopentyl-5-(5-isoquinolylsulfonyl)-6-nitro-1H-benzo(D)imidazole, 2-DG, 2-hydroxy-4-(2,2,3,3,3-pentafluoropropoxy)benzoic acid, 2-hydroxyamino-1-methyl-6-phenylimidazo(4,5-b)pyridine, 2-hydroxyamino-3-methylimidazolo(4,5-f)quinoline, 2-ME, 2-methoxyacetic acid [2-[2-[3-(1H-benzoimidazol-2-yl)propylmethyl-amino]ethyl]-6-fluoro-1-isopropyl-tetralin-2-yl] ester, 2-methyl-1-((4-methyl-5-isoquinolinyl)sulfonyl)homopiperazine, 2-N-(4-(1-azitrifluoroethyl)benzoyl)-1,3-bis-(mannos-4-yloxy)-2-propylamine, 2-Naftol, 2-oxothiazolidine-4-carboxylic acid, 2-phenyl-4-oxohydroquinoline, 2,2,2-trichloroethane-1,1-diol, 2,2'-(hydroxynitrosohydrazono)bis-ethanamine, 2,2'-azobis(2,4-dimethylvaleronitrile), 2,2'-bipyridine, 2,2',4,4'-tetrachlorobiphenyl, 2,3-bis(3'-hydroxybenzyl)butane-1,4-diol, 2,3-dihydroxyterephthalamide, 2,3,4-tri-O-acetylarabinopyranosyl isothiocyanate, 2,4-diaminoquinazoline, 2,4-thiazolidinedione,

21-hydroxy-9beta,10alpha-pregna-5,7-diene-3-ol-20-one, 25-desacetyl rifabutin, 25-Hydroxycholesterol, 25(OH)D3, 3-((4-(4-chlorophenyl)piperazin-1-yl)methyl)-1H-pyrrolo(2,3-b)pyridine, 3-(2-hydroxy-4-(1,1-dimethylheptyl)phenyl)-4-(3-hydroxypropyl)cyclohexanol, 3-(2h)-pyridazinone, 3-(cyclopentyloxy)-N-(3,5-dichloro-4-pyridyl)-4-methoxybenzamide, 3-aminopyrazole, 3-beta-(2-(diethylamino)ethoxy)androst-5-en-17-one, 3-BHA, 3-hydroxybutanal, 3-hydroxyflunitrazepam, 3-Hydroxyquinine, 3-isobutyl-1-methyl-Xanthine, 3-keto-desogestrel, 3-methoxy-4-aminoazobenzene, 3-Methoxymorphinan, 3-Methoxyoestradiol, 3-methylcholanthrene, 3-MI, 3,3',4,5'-tetrahydroxystilbene, 3,4-DCI, 3,4,5-trihydroxybenzamidoxime, 4-(3-3,4-p-menthadien-(1,8)-yl)olivetol, 4-(3-Butoxy-4-methoxybenzyl)-2-imidazolidinone, 4-(4-(4-chlorophenyl)-4-hydroxy-1-piperidinyl)-1-(4-fluorophenyl)-1-butanol, 4-(4-(N-benzoylamino)anilino)-6-methoxy-7-(3-(1-morpholino)propoxy)quinazoline, 4-(4-fluorophenyl)-2-(4-hydroxyphenyl)-5-(4-pyridyl)imidazole, 4-(5-benzo(1,3)dioxol-5-yl-4-pyridin-2-yl-1H-imidazol-2-yl)benzamide, 4-(benzodioxan-5-yl)-1-(indan-2-yl)piperazine, 4-(N-methyl-N-nitrosamino)-1-(3-pyridyl)-1-butanone, 4-AP, 4-azidosalicylic acid, 4-dimethylamino-3',4'-dimethoxychalcone, 4-hydroxy-N-desmethyldamoxifen, 4-hydroxyacetophenone, 4-hydroxycoumarin, 4-hydroxyestradiol-17 beta, 4-hydroxynon-2-enal, 4-hydroxytriazolam, 4-methyl-N-(3-(4-methylimidazol-1-yl)-5-(trifluoromethyl)phenyl)-3-((4-pyridin-3-yl)pyrimidin-2-yl)amino)benzamide, 4-phenylbutyric acid, 4-S-cysteaminylphenol, 4-sulfophenylmethallyl ether, 4,4'-DDE, 4,4'-dipyridyl disulfide, 4,8-dimethoxy-7-hydroxyfuro(2,3-b)quinoline, 4'-epidoxorubicin, 4'-N-benzoylstauroporine, 4(2'-aminoethyl)amino-1,8-dimethylimidazo(1,2-a)quinoxaline, 4alpha-phorbol 12,13-didecanone, 4alphaPDD, 5-((1,2-dihydro-2-oxo-3H-indol-3-ylidene)methyl)-2,4-dimethyl-1H-pyrrole-3-propanoic acid, 5-(4'-(N-piperidinyl)phenylazo)indazole, 5-7-oxo-zeaenol, 5-AC, 5-acetylneuraminyl-(2-3)-galactosyl-(1-4)-(fucopyranosyl-(1-3))-N-acetylglucosamine, 5-azido-1H-indole-3-acetic acid, 5-HT, 5-methoxy-N,N-diisopropyltryptamine, 5-Mop, 5,10-methylenetetrahydrofolate, 5,6-dimethylxanthenoneacetic acid, 5'-O-(((2-decanoylamino-3-phenylpropyloxycarbonyl)amino)sulfonyl)uridine, 6 beta-

hydroxycortisol, 6-Aminochrysene-1,2-dihydrodiol, 6-chloro-2-pyridylmethyl nitrate, 6-deoxy-6-bromoascorbic acid, 6-hydroxydexamehasone, 6-Mercaptopurine, 6,6'-oxybis(2,2-dimethylhexanoic acid), 64Gd, 7-(1,1-dimethylethyl)-6-(2-ethyl-2H-1,2,4-triazol-3-ylmethoxy)-3-(2-fluorophenyl)-1,2,4-triazolo(4,3-b)pyridazine, 7-benzylamino-6-chloro-2-piperazino-4-pyrrolidinopteridine, 7-benzylloxyquinoline, 7-CDL, 7-hydroxystaurosporine, 7-ketocholesterol, 7,8-BF, 7,8-dihydroneopterin, 7'-Isothiocyanato-11-hydroxy-1',1'-dimethylheptylhexahydrocannabinol, 7C3MT, 7H-Pyrrolo(2,3-d)pyrimidine, 8-((4-bromo-2,3-dioxobutyl)thio)-adenosine 3',5'-cyclic monophosphate, 8-(2,6-dichlorophenyl)-10-methyl-3-((4-morpholin-4-ylphenyl)amino)-2,4,10-triazabicyclo(4.4.0)deca-1,3,5,7-tetraen-9-one, 8-(3-chlorostyryl)caffeine, 8-anilinonaphthalene-1-sulfonic acid, 8-Hydroxy-2-(di-n-propylamino)tetralin, 8-Isoprostane, 8,10-bis((2,2-dimethyl-1-oxopropyl)oxy)-11-methyl-1234-tetrahydro-6H-benzo(beta)quinolizin-6-one, 9-(4'-aminophenyl)-9H-pyrido(3,4-b)indole, 9-anthroic acid, 9-CRA, 9-hydroxy-risperidone, 9,10-anthraquinone, 9H-xanthene, A 71915, A-300-I, a-ADP, A73025, Abbott, abciximab, Absele, ABT-737, acetamide 45, Aceton, acetonitrile, acetyl-11-ketoboswellic acid, acetylcholine, acetylvalerenolic acid, Aclarubicin, Acolen, ACON, ACT D, actinium, Actosin, adalimumab, Adalin, Adanon, Adfeed, adinazolam, Adofeed, Adrenor, Adrin, AEBSF, Aeromax, afloqualone, AGMATINE, AIDSVAX, ajoene, ajulemic acid,alachlor, Aladerm, alaninate, Alat, Alcolo, Alcuronium, Aldara, ALDO, Aldrich, alemtuzumab, Alfarol, Alfentanil, ALIMTA, aliskiren, Alli, ALLN, alloxazine, allyl isothiocyanate, almokalant, aloesin, Alprenolol, Alvesco, AM 1387, AM 251, Am 80, AMD 070, Amiloride, Aminacrine, Amine BB, amino-polyethyleneoxide-sulfonate, aminoflavone, Amiodarone, Amlodipine, Amphotericin B, amprenavir, Amrinone, amsonic acid, Amygdalin, AN 207, Anaboleen, anacardic acid, Anandamide, Anco, Andrographis, Androtine, Aneol, Ang II, Anisomycin, Anon, Anthocyanins, anthra(1,9-cd)pyrazol-6(2H)-one, anthracene, anthralin, Anthricin, anthrone, antibiotic G 418, antibiotic H107, Antimycin A, Anyvim, APAP, APDC, Aphidicolin, Aphloiol, apicidin, Apigenin, apocynin, Apotransferrin, aprepitant, APRL, AQ4N, arabinogalactan, Arac, Aralen, Arasine, Areca, Arecoline, Areether, argatroban, aripiprazole, Aron, Artein, Artra, arvan-

il, asiatic acid, asiaticoside, Asmax, Asmol, ASTA, astatine, Astemizole, Astragaloside A, atazanavir, ATL 146e, Atorel, atorvastatin, Atovaquone, ATRA, Atropine, Auranofin, AuTM, auxin, avasimibe, AVE 0118, avicularin, Avid, Axert, Axsain, Aza-dC, Aza-deoxycytidine, azacyclonol, Azadc, azamulin, azaspirane, azelaic acid, azelastine, azelnidipine, azido ruthenium, Azine, Azithromycin, Azobisisobutyramidinium dichloride, Azole, Azoles, Azolidine, Azophen, Azor, BA (VAN), Ba 0108E, bacitracin, Baclofen, bacterial lysate, bafilomycin A1, Bagren, baicalein, Barbiturate, Barnidipine, BAY 11-7085, BB-K8, BCNU, Beflavin, Belt, benazepril, bendamustine, Benidipine, benzamidine, benzimidazole, Benzodiazepines, Benzodioxoles, Benzphetamine, benzydamine N-oxide, benzylamine, benzyloxycarbonylleucyl-leucyl-leucine aldehyde, benzyloxycarbonylvalyl-alanyl-aspartyl fluoromethylketone, beractant, berberine, bergamottin, bergaptol, beta-glycerophosphoric acid, beta-lapachone, beta-Naphthoflavone, beta-propiolactone, Bethanechol, betulinic acid, bexarotene, Bezafibrate, BG 9928, BGC945, biapigenin, BIBX 1382BS, biphenyl-4-ol, BIRB 796, bisindolylmaleimide I, bisindolylmaleimide III, Bisoprolol, bisperoxovanadium, Bisphenol A-Glycidyl Methacrylate, bizelesin, BL1521, Bla-S, Blow, BM 41.440, BML 241, BMS 310705, BMS204352, BMS453, Bo-Xan, Boltin, Bonopen, boron, Borrelia-burgdorferi, bortezomib, bosentan, bosutinib, botrocetin, BPDE, BR-II, Brake, bredinin, Brefeldin A, Bromazepam, bromocis-stilbene, brucine, bryostatin 1, Budesonide, bufalin, bufuralol, Bumetanide, BuOH, Bupivacaine, Buprenorphine, BU-PROPION, Buspirone, Busulfan, Buthionine Sulfoximine, Butyrate, butyrolactone I, C 1027, C 76, CACP, Calcijex, Calcimycin, calphostin C, Calyculin, Camptothecin, Canef, cangrelor, Cannabinoids, Cannabis, Cantharidin, CAPE, Capsaicin, capsaicinoids, capsazepine, Carbachol, Carbamazepine, carbapenem, Carbapenems, carbobenzoxyleucyl-leucyl-norvalinal, Carbolines, Carboxyethylphenethylamino-ethylcarboxamidoadenosine, Cardiolipins, carebastine, CARNOSOL, carrageenans, carvacrol, carvedilol, Casodex, caspofungin, casticin, catechins, CB 3717, Cbdca, CCPA, CD 437, CDP 840, Cefoxitin, celecoxib, cephalomannine, cephalosporins, cepharanthine, cerebrolysin, cerivastatin, Cetomacrogol, cetrotorelix, cetuximab, CGP 12177, CGS 15943A, CGS 21680, CH-THF, CH₂CHO, Chalcone, CHAPS, Chinine, Chitosan, Chloramphenicol, chlorophenyl-ethane, chlorophyllin, chlorophylllypt, chlorproma-

zine, Chlorpropham, Chlorzoxazone, Cholestanol, CHOLINE, Chon-surid, chromophore, Chrysin, chymostatin, CI1033, cicaprost, cifostodine, ciglitazone, Cilazapril, Cilomilast, cilostazol, Cimetidine, cinacalcet, cinitapride, cinnamic aldehyde, cionin, Cipol N, Ciprofloxacin, Ciprol, cis-9, trans-11-conjugated linoleic acid, Cisapride, Citalopram, Citox, CITRULLINE, clebopride, clevidipine, clobazam, Clodronic Acid, clofarabine, Clofibric Acid, Clomipramine, Clonazepam, Clonidine, clopidogrel, clotiazepam, Clozapine, clozapine N-oxide, CNI 1493, Co 2-1970, Coagulin, Colchicine, compactin, CONT, Cotinine, Cotrim, coumarin, CRA 024781, CRA 026440, Crestor, Crodacid, Crypt-2,2,2, cryptdin 3, cryptotanshinone, cryptoxanthin, CUBE, CVT 3146, cyanidin 3-rutinoside, cyanidin-3-glucoside, cyanoginosin-LA, Cyclandelate, cyclohexyl carbamic acid 3'-carbamoylbiphenyl-3-yl ester, cyclohexyl-methyl, cyclopamine, Cyclopentenone, cyclopiazonic acid, Cyproheptadine, Cyproterone Acetate, cystathionine, cysteamine, cysteinyl-leukotriene, Cytarabine, cytochalasin B, Cytochalasin D, cytochalasin E, D 22888, D 23129, DA 8159, Dacarbazine, DAD-SO, daidzein, danaproid, Dapsone, Daral, Darifenacin, darunavir, dasatinib, Daunorubicin, Dayfen, DBPC, DDB, DDE, Debrisoquin, decursin, Deethylamiodarone, deferiprone, Deferoxamine, deguelin, dehydroaripiprazole, Dehydroepiandrosterone Sulfate, dehydroxymethylepoxyquinomicin, Delavirdine, delta8-THC, Denagard, denbinobin, denileukin diftitox, denopamine, Depas, deramciclone, desethylchloroquine, desflurane, desisobutyrylciclesonide, desmethylazelastine, Desmethyldeprenyl, Devazepide, Dexfenfluramine, dexloxiglumide, Dextropropoxyphene, dFdC, DFMO, DHEA, DHLA, di-(1-isoquinolinyl)-di-(pyridyl-2')butane, Diaben, Diacomit, diadenosine tetraphosphate, Dial, Diamide, DIAN, diarsenic trioxide, Dibenzanthracene, Digid, Diclofenac, Dicyclohexylcarbodiimide, diethyl maleate, Diethyl-benzoquinone-imine, Digicor, Digitin, Digoxin, Dihydroqinghaosu, Dihydroxycholecalciferols, diisopropyl fluorophosphate, dillapiol, Diltiazem, Dimethadione, dimethyl fumarate, Dimethyl Sulfoxide, dimethylhydrazide, dimethylamino-purine, dimuonium, dinitrophenol, Dinoprostone, dioxirane, Dipalmitoyl, diphenylalanine, Diphenylamine, diphenyleneiodonium, Dipyridamole, Dipyrone, discodermolide, Diterpenes, Dithionite, diuretic, Diuron, divinyl benzene, dl-Ipr, DMGG, DMPX, DMSO, Dobutamine, Doca, Doconexent, dodecyl-phosphocholine, dodecyloctaethyleneglycol monoether,

Domperidone, DOTA, Doxazosin, Doxorubicin, Doxycycline, DPC 681, DPCPX, Droxia, DTMC, dulcin, Durapatite, DX 9065a, Dxms, Dynatra, E 10, E 3330, E-MIX 80, E.O., EACA, ebastine, ebrotidine, Echinomycin, Econ, econazole, ecteinascidin 743, Edetic Acid, Edex, efavirenz, EGCg, EGTA, eletriptan, Elicide, Empecid, Enalapril, Endocannabinoids, endomorphin 1, Eneidyne, enflurane, enone, Enoximone, entacapone, Entex, enzastaurin, EOS, EPC-K(1), EPEG, EPIB, epibatidine, Epicar, Epoprostenol, epoxybergamottin, epsilon-viniferin, erastin, ergosterol-5,8-peroxide, Eril, erlotinib, erucin, Eryc, erythritol anhydride, esterbut-3, Estriol, ET18-Ome, Etfc cpd, Ethacrynic Acid, Ethan, Ethinyl-oestradiol, Ethylmorphine, Ethynodiol Diacetate, Eticol, Etidronic Acid, Etodolac, Etoposide, etoricoxib, etravirine, Eufor, Eugenol, eupatilin, everolimus, Evex, Evodin, exenatide, Exosurf, Expectorants, Extina, Ezerin, ezetimib, Facet, Facid, facile, Factor IIa, FAMP, Fanchinine, Farnesyl-PP, farnesylthiosalicylic acid, febuxostat, felbamate, Felodipine, Fenfluramine, fenitrothion, fenofibric acid, Fenretinide, Fentanyl, ferulic acid, Filipin, fingolimod, fipronil, fisetin, Flanin F, Flavon, flavonols, flavopiridol, Flavyl, FLCZ, Flecainide, Floxacillin, flufenamic acid, Flunitrazepam, fluorexon, Fluorouracil, fluvoxamine, FOLATE-ANALOG, fondaparinux, Fonofos, Format, Formyl-Tetrahydrofolate, Forskolin, fosamprenavir, Foscarnet, FR 120480, FR 235222, fraxin, FTY 720P, fucoidan, fulvestrant, fumagillin, Fura-2, furafylline, Furamon, Furylfuramide, Gabexate, gadolinium, Gadolinium DTPA, galactocerebroside, galactomannan, galangin, galacturonate, gallic acid, Gallogen, gambierol, Gambogic acid, gamma-butyric-acid, Ganciclovir, gastrin 17, gatifloxacin, gefitinib, Geldanamycin, Gemfibrozil, gemtuzumab, Gentamicins, gepirone, geraniol, geranylecoumarin, Gestodene, GF 120918, GGTI 298, GI 129471, gingerol, ginsenoside Rd, ginsenoside Rf, ginsenoside Rg1, ginsenoside Rh2, Ginsenosides, GLCa, Gliclazide, Glumin, Glyoxal, Gnidimacrin, GnRH, Go 6976, gossypol, GR 79236X, gramicidin S, Granisetron, Gravistat, Grofo, Guggulsterone, GW 4064, GW 501516, H 89, Halan, halofuginone, harmine, Harzol, hassium, HDMTX, Hecogenin, Hectorol, Heet, helenalin, Hemicholinium 3, herbimycin, hesperadin, HESPERETIN, Hexadimethrine, hexarelin, Hgln, himbacine, Hk, Hocus, HOE 33342, honokiol, Horner, HS 1200, HU 211, HyateC, Hydroxin, hydride, Hydromorphone, Hydroxychloroquine, hydroxycotinine, hydroxylamine,

Hydroxytryptophol, Hyhorin, Hypaque, hyperforin, hypericin, Hypericum-perforatum, hypochlorous acid, iberin, IBMX, ibopamine, ibudilast, IC 831423, icariin, icaritin, icilin, ICRF 193, IDS 23, Ifosfamide, Ikarugamycin, ilimaquinone, Iloprost, Imadyl, imatinib, imidafenacin, imidazo-pyridine, imidazolidin-2-one, imidazolidin-one, imidazolidine, Imidazoline, imidazolyl-disulfide, Imipenem, Imizin, Immulina, Immunoferon, Impulsin, Imrecoxib, Imutex, Indinavir, indiplon, indirubin, indole-3-acetic acid, indole-3-methanol, indolin-2-one, indolin-one, infliximab, inhibin B, INOmax, inositol-1,3,4,5-tetrakisphosphate, inulin, Iodoacetamide, iodomethane, iodoresiniferatoxin, Ionomycin, ionophore, Iopanoic Acid, Iophendylate, IPADE, IPOMEANOL, Iressa, irinotecan, irisolidone, Isatin, isaxonine, isoamylol, isobutyl-methyl-Xanthine, Isodonol, isoflavone, isoflurane, Isol, Isoliquiritigenin, isometronidazole, isoprenoids, Isopropyl Thiogalactoside, Isoprostanes, Isorhamnetin, isosilybin A, Isosorbide Dinitrate, isothiocyanates, Isotretinoin, Isradipine, istradefylline, Itraconazole, ivabradine, Ivermectin, ixabepilone, jadomycin B, Jexin, JHW 015, JTE 013, K 252, K-PAM, K-SR, kaempferol, kaempferol-3-O-(2,3,4-tri-O-acetyl-alpha-l-rhamnopyranoside), KAFA, Kaken, Kamalin, Kaolin, Kathon 886, KB 141, Kemi, kenpaullone, Ketamine, Keto-desogestrel, Ketoprogesterone, ketoglutarate, Kipca, KMD 3213, KMTB, Kojic acid, KR-31543, KRM 1648, L 365260, L 740,093, L-454,560, L-696,474, L-T3, LAAM, lacidipine, lactacystin, lactisole, lamotrigine, Lanol, lansoprazole, lapatinib, laquinimod, latrunculin A, latrunculin B, lavendustin A, LBH589, leflunomide, lenalidomide, Lendorm, Lentinan, leptomycin B, Leucovorin, Leukotriene C4, Leukotriene D4, leukotrienes, Leupeptin, Levamisole, Levitra, levobupivacaine, Levonorgestrel, levugen, liarozole, Lidocaine, lilopristone, Lipoate, Lipofectamine, lipoteichoic acid, Lipoxins, lissamine rhodamine B, lithocholic acid, LMWH, LNAC, lonafarnib, Loperamide, lopinavir, Loratadine, Lorazepam, Lorex, lorglumide, Losartan, Lovan, loxiglumide, LUF 5831, lupeol, luteolin, LY 117018, LY 293111, LY231514, LYCOPENE, lysophosphatidic acid, Lysophosphatidylcholines, Lysophosphatidylglycerol, lysyl-arginyl-alanyl-lysyl-alanyl-lysyl-threonyl-threonyl-lysyl-lysyl-arginine, M&B22948, Malix, manidipine, manumycin, maraviroc, Matrine, MCYST-LR, Me-nle-asp-phe-NH₂, mead ethanolamide, MeAsO(OH)₂, Mebumal, Mechlorethamine, Medroxyprogesterone 17-

Acetate, Mefenamic Acid, Megalomicin, Melarsoprol, Melatol, melitin, melitten, meloxicam, Melphalan, Memantine, menadiol, Menhaden oil, menthofuran, Meperidine, Mephenytoin, mesalamine, Mesaton, Meth, methanandamide, methanethiosulfonate ethylammonium, Methimazole, methionyl-leucyl-phenylalanine, Methorphan, Methoxsalen, Methoxy-psoralen, methoxyamine, methoxychlor, methoxymorphinan, methyl chloroformate, Methyl glycine, Methyl paraben, methyl salicylate, methyl tryptophan, methyl-dopa, methylphosphorothioate, methyl-Pyridinium, methylamine, Methylamyl nitrosamine, Methylene-tetrahydrofolate, methylenetetrahydrofolates, methylglyoxal, methylnaltrexone, methyloxidanyl, methylparaben, methylphosphate, Methylprednisolone, methylxanthines, Metoclopramide, Metopiron, Metribolone, mevalonic acid, micafungin, miconazole, Mictonorm, Midazolam, Mifepristone, MIII, Milrinone, Mimosine, mirtazapine, Mit-C, mithramycin, Mitotracker-Red, Mitoxantrone, mizolastine, MLN8054, mofarotene, Monensin, mono-N-demethyladinazolam, mono(2-ethylhexyl)phthalate, monoethylglycinexylidide, monomethylarsonic acid, monoterpenes, monuron, MORIN, morpholine, morusin, motexafin gadolinium, Motuporin, moxifloxacin, MPEG, Muraglitazar, mutalipocin II, mycophenolic acid, Mycose, Myocol, myricetin, myxothiazol, N-(2-cyclohexyloxy-4-nitrophenyl)methanesulfonamide, N-(2-hydroxypropyl)methacrylamide, N-(3-(4-chlorophenyl)-2-(3-cyanophenyl)-1-methylpropyl)-2-methyl-2-((5-(trifluoromethyl)pyridin-2-yl)oxy)propanamide, N-(3-methoxyphenyl)-4-chlorocinnamanilide, N-(3-oxododecanoyl)homoserine lactone, N-(4-(6-(4-(1-(4-fluorophenyl)ethyl)piperazin-1-yl)pyrimidin-4-yloxy)benzo(d)thiazol-2-yl)acetamide, N-(4-(6-(4-trifluoromethylphenyl)pyrimidin-4-yloxy)benzothiazol-2-yl)acetamide, N-(4-cyano-benzo(b)thiophene-2-carbonyl)guanidine, N-(5-(((5-(1,1-dimethylethyl)-2-oxazolyl)methyl)thio)-2-thiazolyl)-4-piperidinecarboxamide, N-acetylcysteine lysinate, n-acetylmuramyl-l-alanyl-d-isoglutamine, N-acetylneuraminic acid, N-desmethylclobazam, N-ethylmaleimide, N-methyl-N-(trimethylsilyl)trifluoroacetamide, N-methylsulfonyl-6-(2-propargyloxyphenyl)hexanamide, N-oleoyldopamine, N-phenyl-1-naphthylamine, N,N,N',N'-tetramethylethylenediamine, N(6)-cyclohexyl-2-O-methyladenosine, N(6)-cyclopentyladenosine, N3-IQ, Nadroparin, naftifine, nal-NH₂, NALS, nanchangmycin, Naprox-

en, naratriptan, narbonolide, NARIGENIN, Narkotil, Nasol, natalizumab, nateglinide, Naxy, nebivolol, Nefazodone, nefiracetam, Nelfinavir, Neomycin, Neopterin, Neostigmine, Neut, Nevirapine, NFBA, Nialk, Nicardipine, Niflumic Acid, nimesulide, niobium, nitecapone, nitroanilide, nitroaspirin, Nitrofurans, NITROPYRENE, nitrosamines, Nitrosoanabasine, Nitrosocysteine, nitrosulindac, Nizatidine, NK 104, NK314, NMDA, NN 703, Noan, Nobiletin, NOC 18, Nocodazole, nodularin, Nodularin v, nolatrexed, Nonoxynol, noralfentanil, norbuprenorphine, Norclozapine, Nordihydroguaiaretic Acid, Norethindrone, noreximide, norfluoxetine, Norgestrel, norharman, norketobemidone, norlaudanosoline, normeperidine, Nortilidine, norverapamil, novobiocin, NS-187, NSC 23766, NSC 366140, NSC 663284, NSC-134754, NU2058, number-one, nutlin 3, NVP-AEW541, Nylon, O-(chloroacetylcarbamoyl)fumagillol, O-desethylreboxetine, O-Due, o-quinone, obovatol, OCDD, octanediol, Octoxynol, Octreotide, Okadaic Acid, olanzapine, olefins, oleoylethanolamide, olmelin, olmesartan, olomoucine, olomoucine II, Oltipraz, omalizumab, omega-agatoxin, omega-Conotoxin GVIA, omega-N-Methylarginine, Omeprazole, omeprazole sulfone, onapristone, ONCB, Ondansetron, ONO4819, Optef, OR 1246, oroxylin A, Orphenadrine, Osten, ostium, OSU 03012, Ouabain, OVEX, Ovex, oxaliplatin, Oxarol, oxaspirodion, oxatomide, Oxazepam, oxcarbazepine, Oxotremorine, oxotremorine M, Oxymorphone, Oxyntomodulin, Oxytrol, p-ABA, p-XSC, p-Xylol, Paclitaxel, paeonol, palladium, palmitoleate, PALMITOYL, Palmitoylcarnitine, pamidronate, panaxadiol, panepoxydone, pantoprazole, Papaverine, Papite, PAPP, parecoxib, Paroxetine, Parsal, Parthenolide, PC 314, PCA 4230, PCSO, PD 134308, PD 144795, PD 180988, PD 98059, pectin, Pemetrexed, Penicillins, Penite, Pentagastrin, Pentoxifylline, Peplomycin, peppermint oil, Pepstatin A, Perazine, Pergolide, Perillol, Perilymph, periodate, perospirone, perovskite, PFPA, Phebestin, phen, phenolate, Phenols, phenoxodiol, Phenprocoumon, Phentermine, phenylpropionamide, phenyl-Pyridinium, Phenytoin, pheophorbide a, phloretin, PHOB, phorate, phorbol, phorbol 12-phenylacetate 13-acetate 20-homovanillate, phosphatidylethanolamines, Phosphatidylinositol 4,5-Diphosphate, phosphatidylinositol phosphate, PtdIns(4,5)P2, phytanic acid, Picibanil, picric acid, pifithrin, Pilot, pimecrolimus, pioglitazone, pipecoloxylidide, piperidine, piperine, Pira, pirinixic acid, Piroxicam, PKC412, plumbagin,

Pluronic p 85, PMDT, PMPA, PMSF, PNPP, Podophyllotoxin, polidocanol, poly-gamma-glutamate, ponacidin, poractant alfa, posaconazole, potassium tellurate(IV), PQQ Cofactor, pranlukast, Pravastatin, Prazosin, PRDL, Precursor mrna, Prednisone, pregnane, Pregnanes, Pregnanolone, pregnenolone 16alpha-carbonitrile, Pregnyl, preussin, Primidone, Proadifen, Proanthocyanidins, Probenecid, Probucol, Procasil, Procetofen, procyanidin B2, Prodix, prolactin, polymeric, Propafenone, Propanesulfonate, Propofol, propyl pyrazole triol, propyne, prostratin, protopanaxadiol, protopanaxatriol, PS 15, Pseudohypericin, Pseudomonas-exotoxin, Psoralens, psychosine-3'-sulfate ester, PTBP, pteridine, Pterostilbene, PURAC, Puromycin, putrescine, Pyocyanine, Pyra, pyranones, pyrazole, Pyrethrins, pyridazine, Pyrimethamine, pyrimidin-2-one beta-ribofuranoside, Pyro, pyrogallol sulfonphthalein, pyrrole-2-carboxylic acid, pyrrolidine dithiocarbamic acid, pyrroloazepinone, Qingkailing, quercitrin, quetiapine, Quicifal, quinazoline, Quinolinium, Quinpirole, quinuclidin-3'-yl-1-phenyl-1,2,3,4-tetrahydroisoquinoline-2-carboxylate monosuccinate, quinupristin-dalfopristin, R-138727, R-99224, Raloxifene, raltitrexed, Ramipril, ramiprilat, RAMP, Ranitidine, RAPA, rasagiline, rebamipide, reboxetine, remifentanyl, renzapride, repaglinide, Resiniferotoxin, resiquimod, Retardex, Riacon, Ribavirin, Riboflavin, Rifabutin, rifamycins, Rifocin, rimonabant, risedronic acid, risperidone, Ristocetin, Ritonavir, rituximab, Ro 13-8996, Ro 23-7553, Ro 23-7637, Ro 24-7429, Ro 31-6233, Ro 31-7549, Ro 31-8220, R04383596, Robitet, rofecoxib, roflumilast, rokitamycin, Rolipram, romidepsin, rooperol, ropivacaine, roscovitine, rosiglitazone, rosmarinic acid, rosuvastatin, Roxithromycin, Rozevin, RPR 121056, RU 58668, ruboxistaurin, rugosin E, rutecarpine, Rutin, S-(beta-p-methoxypropio)phenone)thiamine, S-Nitroso-N-Acetylpenicillamine, S-Nitrosothiols, S-phenyl-N-acetylcysteine, sabarubicin, sabcomeline, Safingol, Safrole, SAGA, SAHA, saikosaponin, Salicin, salvin, samarium, SAME, sanguinarine, sapogenins, Saquinavir, Sarasar, Sarna, sauchinone, saxatilin, SB 218078, SB 225002, SB 415286, SB-705498, scandium, SCH 66712, schizandrer A, scoparone, Scopoletin, Score, SDX 308, Selegiline, seocalcitol, Sep-Pak, Serad, sertindole, sevoflurane, SEW2871, shikonin, siderophore, Sildenafil, silvestrol, silybin, Sincalide, Sizofiran, SK-7041, SK&F 106528, SM 7368, Sodium pentosan poly sulfate, So-

dium Salicylate, sorafenib, sorbinil, Sorbo, Sorbose, spiroglumide, Spironolactone, squamocin, SR 144528, SR 27897, SR 48692, SR 80327A, SR 90107A-ORG 31540, ST 638, stallimycin, Stanozolol, staurosporine, Stearin, Stereoisomerism, Steviol, Stevioside, STIL, stilbene-disulphonate, Stilbenes, Stim, Streptomycin, Styrene, styrene-methylmethacrylate copolymer, SU 5416, SU 6668, SU 9516, suberate, suberosin, succinic semialdehyde, Sufentanil, Suldox, sulfadoxine-pyrimethamine, Sulfamethazine, sulfamethoxazole hydroxylamine, Sulfaphenazole, Sulfasalazine, sulfate ceflufine, sulfate-sulfate, sulfidonitrogen(.), Sulfinpyrazone, sulfo-N-succinimidyl oleate, sulfo-succinimidyl-oleate, sulfogalactosylglycerolipid, sulfones, sulfonic acid, sulfonyl-phenylethyl, Sulforafan, Sulindac, sulindac sulfone, sultopride, sunitinib, Synthos, T 0070907, T 0901317, Tacrine, Tacrolimus, tadalafil, Tamogel, Tamoxifen, tandospirone, Tangeretin, tanshinone, taurocholic acid, Taurodeoxycholic Acid, tauroursodeoxycholic acid, tautomycetin, TAXOTERE, TBDZ, TBHQ, TCAT, technetium, Tegafur, Teleocidin, telithromycin, Temazepam, temozolomide, temsirolimus, terbinafine, terephthalic acid, Terfenadine, teriflunomide, terrein, territrem A, territrem B, territrem C, tertiapin, tetra- μ^3 -sulfido-tetrairon, tetrachloroethene, tetradecanoyl-phorbol-acetate, Tetrahydrocannabinol, tetramethylrhodamine, tetramethylsilane, tetraphene, Tetraprenol, tetrasulfanide, Thalidomide, Thapsigargin, thiamine disulfide, thiazole, Thiazolidinediones, thioacetamide, Thioacetazone, thio benzamide, thiocoraline, Thirole, Thiopental, thio redoxin dithiol, thioridazine, Thiostrepton, thrombin receptor peptide SFLLRNP, thrombin Tokushima, Thromboxane A2, thromboxane B2, Thymine, thymol, thymoquinone, Thyrotropin, Ticlopidine, Tildine, tipranavir, tirilazad, titanium alloy (TiAl6V4), TMC-95A, Tmndga, TMSI, Tobrex, tocotrienols, tofisopam, tolrestat, Tolterodine, toluene, TOLUENE-DITHIOL, topiramate, Topotecan, Toremifene, Tosylarginine Methyl Ester, Tosylllysine Chloromethyl Ketone, Tosylphenylalanyl Chloromethyl Ketone, TPN+, Tracer, Tramadol, trans-resveratrol, trastuzumab, Trazodone, Tremode, Tremorine, Tretinoin, Triad, Triamcinolone, triazolam, triazoles, tributylstannane, trichostatins, Triclosan, triethylamine, Trifluoperazine, trimethylaminocarboxyldihydroboran, trioctyl phosphine oxide, Triolein, tripterine, triptolide, triterpenoids, troglitazone, Troleandomycin, TTNPB, tubocap-

sanolide A, Tunicamycin, tyrphostin AG 1478, tyrphostin AG-490, tyrphostin AG17, U 0126, Ubizol, Ufur, UK 157147, Uprima, uranyl acetate, urethane, Urex, urinastatin, Urso, USAN, valerenic acid, valspodar, venlafaxine, Verapamil, verlukast, vesnarinone, Viagra, Vigil, vincristine, vinflunine, vinorelbine, vinpocetine, violacein, Vira-A, voriconazole, vorozole, VX680, Warfarin, WAY-169916, Win 55212-2, withaferin A, WLN: QR BG, WLN: RVR, WLN: ZSWR, xanthohumol, Xaxa, Xylit, Y 27632, yristate, Z 338, zafirlukast, Zalcitabine, zardaverine, ZD 9331, Zearalenone, Zeldox, zerumbone, Zidovudine, zileuton, Zocor, zopiclone, Zymosan, Trospium chloride, Valproic Acid. These compounds interact with newly identified key regulators of pain sensation and nociception. Mechanistically the inventive treatments involve the modulation of the genes and gene function or interaction with the gene products, in particular proteins, of the genes listed in table 1 or the human orthologues of the Drosophila genes described in Neely et al., 2010, or preferably the human genes listed in table 1.

According to the investigation described herein it was found that these compounds modify at least one gene or gene product thereof selected from the CACNA2D3 (gene for calcium channel subunit alpha-2-delta-3), PIK3CG, or any one of the human genes of table 1, column 2, or any of the human orthologues of the Drosophila genes described in Neely et al., 2010, or any drosophila gene of table 1 column 3, in particular preferred any one of CG10033, CG10095, CG10142, CG10153, CG10158, CG10186, CG10186, CG10228, CG10265, CG1031, CG10332, CG10332, CG10481, CG10537, CG10550, CG1058, CG10583, CG10603, CG10603, CG10612, CG10641, CG10667, CG10686, CG10689, CG10689, CG10691, CG10706, CG10711, CG10728, CG10746, CG10800, CG10823, CG1086, CG10882, CG10932, CG10936, CG10954, CG10988, CG1100, CG1100, CG1101, CG11033, CG11081, CG11183, CG1119, CG11280, CG1130, CG11352, CG11456, CG11508, CG1152, CG11555, CG11577, CG11586, CG11590, CG11592, CG11594, CG11637, CG11637, CG11638, CG11642, CG11715, CG1180, CG1180, CG11820, CG11857, CG11865, CG11878, CG11893, CG11895, CG1193, CG11930, CG11942, CG11967, CG11992, CG12004, CG12030, CG12035, CG12052, CG12079, CG12082, CG12093, CG12131, CG12135, CG12199, CG12209, CG12235, CG12269, CG12290, CG12334, CG12373, CG12559, CG12637, CG1264, CG12641, CG12641, CG12645, CG12663, CG12749, CG12796, CG12797, CG12831, CG12878, CG12932,

CG12938, CG12954, CG12975, CG13035, CG13047, CG13061, CG13069, CG13074, CG13096, CG13110, CG13130, CG13130, CG13162, CG13194, CG13196, CG13196, CG13243, CG13308, CG13319, CG13403, CG13559, CG13575, CG13623, CG1371, CG1387, CG13998, CG14028, CG1406, CG14065, CG14086, CG14214, CG14217, CG14240, CG14252, CG14274, CG14351, CG14362, CG14374, CG14374, CG14376, CG14506, CG14514, CG14590, CG14659, CG14710, CG14750, CG14755, CG14804, CG14818, CG14940, CG14952, CG14980, CG15059, CG15120, CG15153, CG15167, CG15254, CG15307, CG15321, CG15324, CG15427, CG15570, CG15604, CG15604, CG15884, CG16778, CG1683, CG16840, CG16852, CG16854, CG16873, CG16899, CG16932, CG16975, CG17003, CG17027, CG1709, CG17137, CG17146, CG17150, CG17189, CG17234, CG1725, CG17255, CG17266, CG17293, CG17295, CG17521, CG1759, CG17612, CG17673, CG17697, CG17943, CG1800, CG1804, CG18069, CG18088, CG18130, CG18249, CG18332, CG18332, CG18350, CG18350, CG18350, CG18350, CG18372, CG1845, CG18480, CG18624, CG18624, CG18666, CG1915, CG1921, CG1921, CG1966, CG1968, CG1982, CG2038, CG2060, CG2079, CG2100, CG2109, CG2128, CG2158, CG2161, CG2257, CG2257, CG2286, CG2346, CG2371, CG2371, CG2503, CG2522, CG2747, CG2848, CG2848, CG2872, CG2872, CG2901, CG3000, CG30004, CG30004, CG30005, CG30039, CG30050, CG30073, CG30291, CG30342, CG30383, CG30384, CG30404, CG3083, CG3105, CG31065, CG31068, CG31110, CG31267, CG31299, CG31300, CG31623, CG31713, CG31716, CG31718, CG3181, CG3184, CG31841, CG31842, CG31876, CG31886, CG31908, CG31936, CG31955, CG31962, CG32016, CG32025, CG32045, CG32057, CG32121, CG3213, CG32148, CG32150, CG32176, CG32193, CG32219, CG32227, CG3224, CG32278, CG32296, CG32296, CG32313, CG32333, CG32346, CG3241, CG32531, CG32533, CG32540, CG32604, CG32614, CG32678, CG32678, CG32678, CG3269, CG32698, CG3270, CG32703, CG32736, CG32779, CG32779, CG32779, CG32792, CG3291, CG3295, CG3298, CG33002, CG33106, CG33106, CG33106, CG33106, CG33106, CG33106, CG33128, CG33135, CG33147, CG33149, CG33166, CG33202, CG33261, CG33275, CG33275, CG3330, CG33346, CG33350, CG3344, CG33484, CG33500, CG33500, CG3351, CG33512, CG33512, CG33530, CG33547, CG33547, CG33653, CG33980, CG34059, CG34140, CG34140, CG34159, CG3421, CG34339, CG34341, CG34364, CG34383, CG34400, CG34401, CG34401, CG34416, CG3474, CG3520, CG3569, CG3581, CG3604, CG3613, CG3619, CG3619, CG3619, CG3707, CG3711, CG3717, CG3735, CG3905, CG3943, CG3949, CG3955, CG3981, CG4013, CG4040, CG4083, CG4094, CG4109, CG4217, CG42250, CG4247, CG4247, CG4260,

CG4279, CG4279, CG4351, CG4365, CG4396, CG4459, CG4477, CG4502, CG4550, CG4560, CG4584, CG4587, CG4612, CG4633, CG4633, CG4648, CG4655, CG4673, CG4692, CG4698, CG4742, CG4775, CG4795, CG4798, CG4799, CG4806, CG4807, CG4830, CG4875, CG4875, CG4887, CG4946, CG4975, CG4977, CG5003, CG5012, CG5012, CG5013, CG5014, CG5014, CG5121, CG5134, CG5160, CG5179, CG5183, CG5198, CG5201, CG5219, CG5219, CG5261, CG5287, CG5330, CG5405, CG5411, CG5473, CG5499, CG5516, CG5519, CG5565, CG5580, CG5611, CG5643, CG5644, CG5703, CG5723, CG5725, CG5725, CG5727, CG5757, CG5788, CG5800, CG5818, CG5819, CG5821, CG5842, CG5884, CG5889, CG5890, CG5902, CG5934, CG5940, CG5949, CG5969, CG5977, CG5986, CG6006, CG6098, CG6136, CG6143, CG6177, CG6210, CG6249, CG6340, CG6395, CG6457, CG6496, CG6536, CG6549, CG6553, CG6571, CG6575, CG6582, CG6583, CG6605, CG6620, CG6637, CG6673, CG6703, CG6721, CG6724, CG6822, CG6824, CG6930, CG6930, CG6946, CG6948, CG6963, CG6971, CG6971, CG6972, CG6987, CG6998, CG7006, CG7007, CG7007, CG7010, CG7015, CG7025, CG7059, CG7081, CG7099, CG7100, CG7109, CG7129, CG7145, CG7160, CG7175, CG7175, CG7187, CG7194, CG7211, CG7223, CG7225, CG7292, CG7311, CG7342, CG7358, CG7371, CG7376, CG7422, CG7430, CG7443, CG7467, CG7494, CG7494, CG7497, CG7507, CG7556, CG7583, CG7636, CG7664, CG7708, CG7708, CG7712, CG7728, CG7730, CG7800, CG7800, CG7811, CG7816, CG7856, CG7873, CG7946, CG7957, CG8005, CG8008, CG8009, CG8014, CG8014, CG8029, CG8039, CG8048, CG8107, CG8110, CG8114, CG8203, CG8233, CG8288, CG8325, CG8326, CG8394, CG8432, CG8436, CG8440, CG8487, CG8520, CG8625, CG8631, CG8651, CG8732, CG8764, CG8849, CG8912, CG8914, CG8985, CG8985, CG9022, CG9022, CG9032, CG9067, CG9102, CG9160, CG9172, CG9231, CG9280, CG9311, CG9323, CG9350, CG9388, CG9447, CG9453, CG9460, CG9519, CG9537, CG9548, CG9603, CG9636, CG9636, CG9650, CG9696, CG9739, CG9742, CG9753, CG9753, CG9825, CG9825, CG9901, CG9901, CG9948, as well as their orthologues, in particular human orthologues. Furthermore preferred genes (or gene targets) for the inventive treatment are selected from CG10882, CG10033, CG10095, CG10096, CG10096, CG10098, CG10142, CG10153, CG10158, CG10186, CG10186, CG10200, CG10228, CG1031, CG10315, CG10332, CG10332, CG10481, CG10540, CG10550, CG1058, CG10583, CG10603, CG10603, CG10612, CG10641, CG10667, CG10689, CG10691, CG10711, CG10728, CG10746, CG10754, CG10800, CG10823, CG1086, CG10872, CG10932, CG10936, CG10954, CG10988, CG10992, CG1100, CG1100, CG1101, CG11033, CG11081, CG11081, CG11183, CG1119, CG11280, CG11339, CG11419,

CG11456, CG11508, CG11512, CG1152, CG11555, CG11577, CG11586, CG11590, CG11592, CG11637, CG11637, CG11638, CG11715, CG1180, CG1180, CG11820, CG11857, CG11865, CG11878, CG11893, CG11895, CG1193, CG11942, CG11953, CG11967, CG11992, CG12004, CG12030, CG12035, CG12079, CG12082, CG12082, CG12083, CG12131, CG12135, CG12209, CG12235, CG12334, CG12373, CG12532, CG12637, CG12645, CG12663, CG12785, CG12796, CG12797, CG12831, CG12915, CG12927, CG12932, CG12938, CG12954, CG12975, CG13035, CG13047, CG13069, CG13074, CG13096, CG13110, CG13162, CG13196, CG13243, CG13308, CG13319, CG13388, CG13403, CG13534, CG13548, CG13623, CG1371, CG1375, CG13777, CG13788, CG13802, CG13802, CG1387, CG13922, CG13998, CG14028, CG1406, CG14075, CG14086, CG14198, CG14214, CG14217, CG14240, CG14252, CG14255, CG14274, CG14351, CG14353, CG14365, CG14374, CG14374, CG14376, CG14429, CG14442, CG14506, CG14514, CG14707, CG14707, CG14750, CG14804, CG14818, CG14940, CG14980, CG15071, CG15120, CG15167, CG15238, CG15241, CG15254, CG15321, CG15324, CG15427, CG15433, CG15570, CG15604, CG15604, CG15884, CG16725, CG16775, CG16778, CG16852, CG16854, CG16873, CG16899, CG16932, CG17003, CG17027, CG1709, CG17137, CG17146, CG17150, CG17189, CG17203, CG17234, CG1725, CG17266, CG17293, CG17295, CG17386, CG17521, CG17650, CG17673, CG17697, CG17943, CG1800, CG18026, CG1804, CG18069, CG18088, CG18130, CG18213, CG18249, CG18332, CG18332, CG18350, CG18350, CG18350, CG18350, CG18372, CG1847, CG18480, CG18557, CG18624, CG18624, CG18666, CG18671, CG18671, CG18771, CG18816, CG18816, CG18833, CG1915, CG1922, CG1966, CG1968, CG1982, CG2038, CG2052, CG2060, CG2100, CG2109, CG2128, CG2151, CG2158, CG2161, CG2257, CG2257, CG2286, CG2309, CG2346, CG2371, CG2371, CG2503, CG2522, CG2685, CG2698, CG2713, CG2747, CG2848, CG2848, CG2848, CG2872, CG2872, CG3000, CG30005, CG30025, CG30025, CG30025, CG30025, CG30039, CG30050, CG30073, CG30113, CG30186, CG30291, CG30352, CG30383, CG30384, CG30404, CG30427, CG30474, CG3083, CG3105, CG31065, CG31067, CG31067, CG31068, CG31103, CG31110, CG31170, CG31183, CG31267, CG31299, CG31300, CG31309, CG31364, CG31406, CG31623, CG31654, CG31713, CG31718, CG3181, CG3184, CG31841, CG31842, CG31876, CG31893, CG31908, CG31936, CG31955, CG31962, CG32006, CG32016, CG32025, CG32057, CG3213, CG32131, CG32148, CG32150, CG32176, CG32219, CG32227, CG3224, CG32278, CG32283, CG32313, CG32333, CG32381, CG3240, CG3240, CG3241, CG32467, CG32478, CG32531, CG32614, CG32678, CG32678, CG32678, CG32678, CG3269, CG32779,

CG32792, CG3291, CG3298, CG33002, CG3330, CG33346, CG3344, CG33530, CG3421, CG3520, CG3581, CG3604, CG3612, CG3613, CG3619, CG3619, CG3707, CG3711, CG3717, CG3717, CG3733, CG3735, CG3905, CG3943, CG3949, CG3955, CG3955, CG3981, CG3996, CG4073, CG4083, CG4109, CG4110, CG4217, CG4247, CG4247, CG4279, CG4279, CG4351, CG4365, CG4396, CG4453, CG4459, CG4477, CG4550, CG4560, CG4581, CG4584, CG4587, CG4609, CG4612, CG4633, CG4633, CG4648, CG4655, CG4673, CG4698, CG4742, CG4772, CG4775, CG4795, CG4798, CG4799, CG4806, CG4830, CG4863, CG4875, CG4887, CG4946, CG4975, CG4977, CG4994, CG5003, CG5012, CG5012, CG5013, CG5014, CG5014, CG5121, CG5160, CG5179, CG5183, CG5198, CG5201, CG5219, CG5219, CG5254, CG5261, CG5287, CG5330, CG5380, CG5411, CG5473, CG5499, CG5507, CG5516, CG5519, CG5541, CG5565, CG5580, CG5611, CG5625, CG5643, CG5644, CG5703, CG5711, CG5714, CG5723, CG5725, CG5725, CG5727, CG5751, CG5757, CG5788, CG5818, CG5819, CG5820, CG5821, CG5842, CG5884, CG5889, CG5890, CG5902, CG5934, CG5940, CG5949, CG5969, CG5977, CG5986, CG5989, CG6006, CG6006, CG6027, CG6066, CG6098, CG6136, CG6143, CG6177, CG6210, CG6249, CG6294, CG6340, CG6375, CG6457, CG6496, CG6553, CG6571, CG6582, CG6583, CG6605, CG6620, CG6637, CG6673, CG6703, CG6721, CG6724, CG6822, CG6852, CG6881, CG6901, CG6930, CG6930, CG6946, CG6948, CG6963, CG6971, CG6971, CG6972, CG6987, CG6998, CG7006, CG7007, CG7007, CG7010, CG7015, CG7042, CG7042, CG7059, CG7100, CG7109, CG7129, CG7145, CG7160, CG7172, CG7175, CG7175, CG7187, CG7194, CG7211, CG7223, CG7225, CG7307, CG7311, CG7342, CG7358, CG7371, CG7376, CG7422, CG7430, CG7436, CG7443, CG7462, CG7467, CG7494, CG7494, CG7513, CG7520, CG7556, CG7580, CG7583, CG7636, CG7664, CG7693, CG7708, CG7708, CG7712, CG7726, CG7728, CG7730, CG7778, CG7800, CG7800, CG7811, CG7816, CG7856, CG7873, CG7946, CG7957, CG8005, CG8008, CG8009, CG8014, CG8014, CG8029, CG8039, CG8039, CG8048, CG8107, CG8110, CG8114, CG8137, CG8203, CG8233, CG8288, CG8325, CG8326, CG8394, CG8432, CG8436, CG8440, CG8487, CG8520, CG8625, CG8631, CG8651, CG8663, CG8732, CG8764, CG8771, CG8849, CG8912, CG8914, CG9022, CG9022, CG9032, CG9067, CG9102, CG9160, CG9172, CG9231, CG9280, CG9288, CG9305, CG9311, CG9323, CG9343, CG9350, CG9388, CG9447, CG9453, CG9460, CG9519, CG9548, CG9588, CG9603, CG9633, CG9636, CG9636, CG9650, CG9678, CG9696, CG9696, CG9720, CG9742, CG9753, CG9753, CG9825, CG9825, CG9901, CG9901, CG9948, CG9948, CG9983, as well as their orthologues, in particular human orthologues (such as described in Neely et al., 2010, incorporated herein by

reference). These genes are referred herein as "pain genes". Preferred genes are selected from CG10095, CG10096, CG10098, CG10158, CG10481, CG11033, CG11456, CG11577, CG11586, CG11590, CG11592, CG11820, CG11967, CG12004, CG12334, CG12785, CG12797, CG13096, CG13162, CG13623, CG1371, CG14351, CG14442, CG14514, CG14980, CG16725, CG16854, CG1804, CG18088, CG18130, CG18213, CG18249, CG18480, CG1968, CG2052, CG2747, CG30005, CG31103, CG31267, CG31955, CG3213, CG32150, CG3224, CG32792, CG33346, CG3996, CG4110, CG4351, CG4477, CG4946, CG5516, CG5565, CG5819, CG5969, CG5986, CG6136, CG6294, CG6340, CG6553, CG6583, CG6637, CG6724, CG6852, CG6901, CG7006, CG7042, CG7175, CG7358, CG7376, CG7556, CG7728, CG7800, CG8233, CG8325, CG8436, CG8771, CG9067, CG9288, CG9636, CG9650. These genes, as well as their orthologue counterparts, in particular human orthologs (Neely et al., 2010), or their respective gene products are preferred targets for therapy according to the present invention. According to the present invention function of at least one of these genes is modified by the inventive compounds, in particular the small molecules given in table 1. In preferred embodiments the compound modulates at least two, three, four, five or six or more of these genes (or orthologues). Further compounds suitable to modulate gene function include the administration of therapeutic proteins or nucleic acids, such as transgenes or inhibitory nucleic acids (RNAi molecules, siRNA, antisense RNA or DNA). Such interfering nucleic acids bind messages of the genes leading to degradation and reduced gene expression. Preferred therapeutic proteins include the gene products of these genes (as agonists) or antibodies which specifically bind these proteins (as antagonists, but also as agonists if protein activity is increased - such as by binding and blocking an inhibitor binding site). The inventive compounds can act as either agonist by increasing the gene function (via mRNA regulation or interaction with the protein) of a protein in the enzymatic pathway of any one of the above listed genes or an antagonist in said pathways. The antagonizing or activating (agonist) activity of the compounds acts preferably on the identified pain genes (including their gene product) themselves or on a binding partner thereof. With the inventive methods it is possible to suppress pain or, alternatively to increase pain, e.g. to treat hyposensitivities. Depending on the goal an antagonist or agonist of the gene targets

may be used. In preferred embodiments antagonists of the pain genes are used.

The subject to be treated according to the present invention can be any non-human animal or a human. Preferably the subject is a mammal, in particular preferred embodiments a human.

According to the present invention pain and conditions associated with pain, e.g. itching or depression, can be treated or prevented, in particular in the meaning of a prophylactic administration. "Preventing" or "prevention" herein does not require absolute success in the sense of an absolute prevention of pain but indicates a reduced risk of developing a disease or painful condition, or developing pain with reduced severity. Likewise, "treatment" shall not be construed as an absolute cure, but may also relate to amelioration or suppression of pain or pain associated conditions.

Pain and pain associated conditions and diseases to be treated according to the present invention can include acute pain, chronic pain, somatogenic pain, neuropathic pain, psychogenic pain, heat induced pain, physical pain and nociception in general, or hyperalgesia. In particular embodiments the pain is selected from neuropathic pain, inflammatory pain, nociceptive pain, rheumatic pain, headache, low back pain, pelvic pain, myofascial pain, vascular pain, migraine, wound associated pain, inflammatory pain, arthritic pain, diabetic pain, pain from cancer or somatic visceral pain, all in both acute and chronic forms. The pain can also be related to phantom pain, pain from a part of the body that has been lost or from which the brain no longer receives physical signals.

Pain can be generally classified to two broad categories, acute and chronic. The treatment of any acute or chronic pain is subject matter of the present invention. Acute pain is usually associated with a specific cause such as a specific injury and is often sharp and severe. Acute pain begins suddenly and is not persistent. Chronic pain is long-term pain, with a typical duration of more than three months leading to significant psychological and emotional problems. Chronic pain is generally associated with clinical conditions characterised by chronic and/or degenerative lesions. Common examples of chronic pain are neuropathic pain (e.g. painful diabetic neuropathy, post-herpetic neuralgia), rheumatoid arthritis, osteoarthritis, fibromyalgia,

back pain, headache, carpal tunnel syndrome, cancer pain, and chronic post-surgical pain. Pain can also be divided into a number of different subtypes according to differing pathophysiology, including nociceptive, inflammatory and neuropathic pain. Also some types of pain can be classified in multiple categories, for example pain associated with cancer can have a nociceptive and neuropathic component. Nociceptive pain consists of somatic pain (musculo-skeletal pain) and visceral pain (pain associated with the viscera, which encompass the organs of the abdominal cavity). Common causes of somatic pain include cancer metastasis such as to the bone and postsurgical pain from a surgical incision in addition to musculo-skeletal disorders such as dystrophinopathy, myalgia and polymyositis. Nociceptive pain also includes tissue injury-induced pain and inflammatory pain such as that associated with arthritis. Another type of inflammatory pain is visceral pain which includes pain associated with gastrointestinal disorders (GI) such as functional bowel disorder (FBD) and inflammatory bowel disease (IBD). Further examples of visceral pain include the pain associated with dysmenorrhea, cystitis and pancreatitis and pelvic pain. Additional pain types include dysfunctional pain such as fibromyalgia, Temporomandibular Joint Disorder (TMJ), Irritable bowel syndrome (IBS) and musculo-skeletal pain). Neuropathic pain is caused by damage to the peripheral or central nervous system. Examples of central neuropathic pain include pain from spinal cord injury, multiple sclerosis, strokes and fibromyalgia. Diabetes and related metabolic disorders are a common cause of peripheral neuropathic pain (diabetic neuropathy). Some of the human conditions and pathologies characterised by the presence of neuropathic pain include, but are not limited to, cancer (cancer neuropathy), HIV neuropathy, Parkinson's disease, epilepsy, immunodeficiency, post-herpetic syndromes, trauma, ischaemia, sciatica, multiple sclerosis, peripheral neuropathy, trigeminal neuralgia, back pain, phantom limb pain, carpal tunnel syndrome, central post-stroke pain and pain associated with chronic alcoholism, hypothyroidism, uraemia, spinal cord injury, and vitamin deficiency. Preferably the pain is neuropathic pain, such as trigeminal neuralgia, such as post-herpetic neuralgia, such as painful diabetic neuropathy, such as painful diabetic peripheral neuropathy, such as diabetic polyneuropathy, such as sciatic pain, such as

radiculopathy, such as radicular pain or such as non-inflammatory neuropathic pain. Pain may be selected from fibromyalgia, postoperative pain, trigeminal neuralgia, post-herpetic neuralgia, painful diabetic neuropathy, painful diabetic peripheral neuropathy, diabetic polyneuropathy, sciatic pain, radiculopathy, radicular pain, lumbar pain. Preferably the pain is caused by the conditions as mentioned above related to the given pain type. In particular the pain type can be the only pain type in a subject. E.g. preferably a neuropathic pain is caused by affected nerves but not caused by inflammation, i.e. neuropathic pain is the only pain in the subject and is non-inflammatory.

"About" is used to refer to certain dosages that can vary from a given value, nevertheless with the same effects as the indicated dose. In some embodiments "about" may refer to +/- 20% or 10% of a given value.

Preferably the compound is administered in a dosage sufficient to treat or prevent pain or associated conditions and diseases. Administration can e.g. be a single dose administration or a successive or repeated administration, e.g. twice a day, daily or in an interval of at least 1 day, at least 2 days, at least 3 days, at least 1 week, preferably at least 2 weeks, at least 4 weeks, at least 8 weeks or even more preferred at least 12 weeks. Preventive administrations are usually a short time before expected pain, if controllable or foreseeable - such as in scheduled surgery - e.g. up to 1 hour (h), 2h, 3h, 4h, 5h, 6h, 8h, 10h, 12h or up to 24h or even up to 48h beforehand, as well as any interval in between.

According to a further preferred embodiment of the present invention, the compound is provided in a pharmaceutical composition or a medicament, in particular an analgesics. The composition or medicament may comprise a pharmaceutical carrier. Pharmaceutical carrier substances serve for a better tolerance of the medicament and allow for a better solubility as well as a better bioavailability of the active substances contained in the medicament. Examples of this are emulsifiers, thickening agents, redox components, starch, alcohol solutions, polyethylene glycol or lipids. The choice of a suitable pharmaceutical carrier is highly dependent on the manner of administration. For oral administrations, liquid or solid carriers may be used, for injections, liquid final compositions are required. For cellular tar-

geting, such as for inhibitory nucleic acids, suitable vehicles can be included such as liposomes or microsomes.

Preferably, the medicament or the compound to be used according to the invention comprises buffer substances or tonic substances. By means of a buffer, the pH of the medicament can be adjusted to physiological conditions, and moreover, pH fluctuations can be attenuated, or buffered, respectively. An example thereof is a phosphate buffer. Tonic substances serve for adjusting the osmolarity and may comprise ionic substances, such as, e.g., inorganic salts, such as NaCl, or also non-ionic substances, such as, e.g. glycerol or carbohydrates.

The inventive compound or medicament can be administered topical, enteral or parenteral, in particular preferred oral or rectal, intravenous, intraarterial, intramuscular, subcutaneous, intradermal or intraperitoneal, transdermal, transmucosal or inhalational. Preferred routes of administration of the inventive agent according to the present invention are parenteral routes, preferably intraperitoneal or intravenous administration, intravenous administration being specifically preferred. Intravenous administration can be performed e.g. via bolus injection or by continuous intravenous delivery over a longer time period (e.g. 30 min to 6 h, especially 1 to 3 h). Further routes include oral or transdermal or subcutaneous routes. In particular preferred is oral administration. For digestible agents, such as active proteins, peptides or siRNA, parenteral routes are preferred.

The medicament or the compound to be used according to the invention can be prepared to be suitable for oral or intranasal administration. These administration forms of the medicament of the present invention allow for a rapid and uncomplicated uptake of the active substances via the mucous membranes. For a nasal intake, nose drops or nose sprays are suitable. For an oral administration, solid or liquid medicaments may, e.g., be taken directly or in a dissolved or diluted state, respectively.

The medicament or compound to be used according to the invention can be prepared for an intravenous, intra-arterial, intramuscular, intravascular, systemic, intraperitoneal or subcutaneous administration. For this purpose, e.g., injections or transfusions are suitable. Administrations directly into the bloodstream have the advantage that the active substances of the medicament will be distributed in the entire body and will

quickly reach the target tissue or cells, in particular the peripheral nerves, spinal cord cells or brain cells.

The compound may be administered in a effective therapeutic dose. Effective doses are in the range of dosages known for the compounds for other, non-pain related administrations. In particular, for a specific use a dosage can be determined by a simple test using drosophila or mouse test systems. Further possible therapeutic doses of the compounds for the inventive treatment can be the same dosage disclosed or approved for other therapeutic uses for each of these compounds. Example dosages are at least 0.01 mg/kg, at least 0.1 mg/kg, at least 1 mg/kg, at least 10 mg/kg and/or up to 1 mg/kg, up to 10 mg/kg, up to 100 mg/kg, up to 1 g/kg, and any dosages in between. Preferred dosage ranges are between 0.01 mg/kg and 1 g/kg, preferably between 0.1 mg/kg and 100 mg/kg.

The examples show that the inventive pain tests revealed pharmaceutical compounds that are well known to be therapeutically applicable for the treatment of human conditions and diseases. The compounds may now also be used for the treatment of pain and pain associated secondary diseases. Of course the full list of compounds according to table 1 provides new therapeutic concepts.

The present invention also relates to a method of modulating the gene expression or gene function in a cell, wherein the gene is selected from one or more of the genes listed in table 1, in particular selected from the genes above, or an ortholog counterpart thereof, comprising administering a compound of table 1 to said cell. The cell can be a nerve cell, including pain or thermosensitive nerve cells, and/or preferably selected from spinal cord cells, brain cells or peripheral nerve cells. The cell can be of the "pain matrix" such as the thalamus, the S1 and S2 somatosensory cortex, the cingulum, amygdala, hypothalamus, or the motor cortex. The inventive administration be be for treatment, alleviation or prevention of pain or hyperalgesia in a subject.

In a further aspect the present invention relates to method of screening active compounds suitable for the treatment of pain comprising testing for modulation, including suppression or activation, preferably suppression, of gene activity of any one of the genes listed above or given in table 1. The test may com-

prise recombinantly expressing the gene product in a suitable host cell or cell lines, such as mammal cell lines, in particular CHO cells, contacting said cell or cell line with a candidate compound and detecting a deviation in gene function when compared to normal levels without contacting with the compound. Further tests comprising binding of the compound to the gene product (the expressed protein) and detecting binding events. Other tests include the use of animal models and testing the compounds for behavioural changes when exposed to pain, such tests are disclosed in the examples. Additional, information on optimal dosages can be obtained with these tests.

Table 1: List of therapeutic compounds: Small Molecule: name of compound (see list of synonyms below), Interacting Gene Symbol: human gene name of therapeutic target, Interacting GeneID: human gene ID, Drosophila ID: ortholog Drosophila gene ID;

Small Molecule	Interacting Gene Symbol	Interacting GeneID	Drosophila Id
(1S,2S)-2-(2-(N-((3-benzimidazol-2-yl)propyl)-N-methylamino)ethyl)-6-fluoro-1,2,3,4-tetrahydro-1-isopropyl-2-naphthyl cyclopropanecarboxylate dihydrochloride	CYP3A4,	1576,	CG2060,
(5-(2-methoxy-5-chloro-5-phenyl)furan-2-ylcarbonyl)guanidine	CYP3A4,	1576,	CG2060,
(6S)-5,6,7,8-tetrahydrofolic acid	TYMS,	7298,	CG3181,
(T,G)-A-L	FOXP3,	50943,	CG16899,
1 alpha-hydroxyergocalciferol	CYP3A4,	1576,	CG2060,
1-(1-cyclohexylethylamino)-4-phenylphthalazine	CYP3A4,	1576,	CG2060,
1-(2-methyl-4-methoxyphenyl)-4-((2-hydroxyethyl)amino)-6-trifluoromethoxy-2,3-dihydropyrrolo(3,2-c)quinoline	CYP3A4,	1576,	CG2060,
1-(2,3-dichlorobenzoyl)-5-methoxy-2-methyl-(2-(mopholin-4-yl)ethyl)-1H-indole	CNR2,	1269,	CG12796,
1-(2,3-dihydro-1,4-benzodioxin-5-yl)-4-((5-(4-fluorophenyl)-3-pyridinyl)methyl)piperazine	HDAC3,	8841,	CG2128,
1-(6-((3-methoxyestra-1,3,5(10)-trien-17-yl)amino)hexyl)-1H-pyrrole-2,5-dione	NFKB1,S1PR1,ADORA 1,	4790,1901,134,	CG11992,CG12796,CG 9753,

1-adamantyl propargyl ether	NFKB1,	4790,	CG11992,
1-aminobenzotriazole	CYP4F3,CYP4A11,CYP3A5,	4051,1579,1577,	CG2060,CG2060,CG2060,
1-aminooxy-3-aminopropane	SLC25A21,	89874,	CG5254,
1-hydrazino-4-(3,5-dimethyl)-1-pyrazolyl-5H-pyridazino(4,5-b)indole	PDE4A,	5141,	CG14940,
1-hydroxymethylimidazolam	CYP3A4,	1576,	CG2060,
1-hydroxypyrene	GSTT1,	2952,	CG30005,
1-Methyl-4-phenylpyridinium	NFKB1,	4790,	CG11992,
1-Nitropyren-8-ol	CYP3A5,CYP4F3,	1577,4051,	CG2060,CG2060,
1-phosphatidyl-1D-myo-inositol 3-phosphates	KHDRBS1,NCF4,	10657,4689,	CG3613,CG5821,CG7129,
1-stearoyl-2-oleoyl-sn-glycero-3-phosphocholine	NCF4,	4689,	CG7129,
1,1-bis(3'-indolyl)-1-(4-t-butylphenyl)methane	PSMD9,	5715,	CG9588,
1,1-dimethylbutyl-1-deoxy-Delta(9)-THC	CNR2,	1269,	CG12796,
1,1,1-trichloro-2-(4-hydroxyphenyl)-2-(4-methoxyphenyl)ethane	CYP3A4,	1576,	CG2060,
1,2-bis(diphenylphosphino)ethane	ME1,	4199,	CG5889,
1,2-di-(4-sulfamidophenyl)-4-butylpyrazolidine-3,5-dione	UBE2L3,	7332,	CG5788,
1,2-diacyl-sn-glycero-3-phosphocholines	DLD,	1738,	CG7430,
1,2-ethanedithiol	ME3,	10873,	CG5889,
1,2-oleoylphosphatidylcholine	TXNRD1,TXNRD2,	7296,10587,	CG2151,CG2151,
1,2,4-triazines	FGFR1,	2260,	CG7223,
1,25-dihydroxy-21-(3-hydroxy-3-methylbutyl)-23-yne-26,27-hexafluorocholecalciferol	SMAD6,	4091,	CG5201,
1,25-dihydroxyergocalciferol	TRPV6,	55503,	CG5842,
1,25D3	SLC2A1,THOC4,NFKB1,LARP6,CYP3A7,CYP3A4,UGT1A4,UGT1A3,UGT2B15,UGT2B17,TRPV5,TRPV6,GPR17,PPP2CA,CDC2,CDK2,PSMD9,	6513,10189,4790,55323,1551,1576,54657,54659,7366,7367,56302,55503,79971,5515,983,1017,5715,	CG1086,CG1101,CG11992,CG17386,CG2060,CG2060,CG4772,CG4772,CG4772,CG4772,CG5842,CG5842,CG6210,CG7109,CG8203,CG8203,CG9588,
1,3-Dcg	PRDX6,	9588,	CG3083,
1,3-dihydroxy-4,4,5,5-tetramethyl-2-(4-carboxyphenyl)tetrahydroimidazole	CCRN4L,	25819,	CG31299,
1,3-dipropyl-8-(3-noradamantyl)xanthine	ADORA1,	134,	CG9753,
1,3,5-trimethylbenzene	CELSR1,ME2,	9620,4200,	CG11895,CG5889,
1,7-dioxa-2,6-diaza-4,4-dioxide-4,7a-dithia-3H,5H-benzo(cd)pentalene	LPAR3,LPAR2,	23566,9170,	CG12796,CG12796,
10-deoxymethynolide	NDUFAB1,	4706,	CG9160,
10-propargyl-10-deazaaminopterin	RFC1,	5981,	CG1119,
10-undecynoic acid	CYP4A11,	1579,	CG2060,

10,10-bis(4-pyridinylmethyl)-9(10H)-anthracenone	KCNQ5,	56479,	CG12915,
11-cis-retinal	SAG,	6295,	CG5711,
11-hydroxycannabinol	CNR2,CNR1,	1269,1268,	CG12796,CG12796,
12-Hht	LPAR2,	9170,	CG12796,
13-Lox	CD36,	948,	CG7422,
13-oxo-9,11-octadecadienoic acid	UGT2B7,	7364,	CG4772,
15 hete	TXNRD1,TXNRD2,	7296,10587,	CG2151,CG2151,
15-Hydroxy-11 alpha,9 alpha-(epoxymethano)prosta-5,13-dienoic Acid	PSMD9,	5715,	CG9588,
17-(allylamino)-17-demethoxygeldanamycin	NFKB1,CYP3A5,ECD,	4790,1577,11319,	CG11992,CG2060,CG5714,
17alpha-ethynylestradiol	CYP3A4,	1576,	CG2060,
1843U89	TYMS,	7298,	CG3181,
1D-myo-inositol 1,3,4,5-tetrakisphosphate	INPP5A,	3632,	CG31110,
1H-indole	GABA-RAP,CNR2,SFRS1,	11337,1269,6426,	CG12334,CG12796,CG6987,
1H-pyrazole	HNRNPA1,	3178,	CG9983,
1H-pyrazolo(3,4-b)pyridine	CDC2,CDK2,	983,1017,	CG8203,CG8203,
2 APB	TRPV1,TRPV6,TRPV2,TRPV3,	7442,55503,51393,162514,	CG5842,CG5842,CG5842,CG5842,
2-(1-(3-dimethylaminopropyl)-5-methoxyindol-3-yl)-3-(1H-indol-3-yl)maleimide	NFKB1,	4790,	CG11992,
2-(1-methyl-4-piperidinyl)-6-(2-phenylpyrazolo(1,5-a)pyridin-3-yl)-3(2H)-pyridazinone	ADORA1,	134,	CG9753,
2-(2-hydroxyethylsulfanyl)-3-methyl-1,4-naphthoquinone	CDC2,	983,	CG8203,
2-(3,4-dimethoxyphenyl)-5-amino-2-isopropylvaleronitrile	CYP3A5,CYP3A4,	1577,1576,	CG2060,CG2060,
2-(4-amino-3-methylphenyl)-5-fluorobenzothiazole	NFKB1,	4790,	CG11992,
2-(4-morpholinoanilino)-6-cyclohexylaminopurine	AURKA,	6790,	CG6620,
2-(4-morpholinyl)-8-phenyl-4H-1-benzopyran-4-one	NFKB1,S1PR1,CCNA2,LETMD1,CD36,FYN,PSMD9,	4790,1901,890,25875,948,2534,5715,	CG11992,CG12796,CG5940,CG5989,CG7422,CG7873,CG9588,
2-(4-toluidino)-6-naphthalenesulfonic acid	CYP3A4,	1576,	CG2060,
2-(cyclohexylmethylidenehydrazino)adenosine	ADORA2A,	135,	CG9753,
2-AAF	CYP4F3,CYP3A5,	4051,1577,	CG2060,CG2060,
2-acetylthiomethyl-3-(4-methylbenzoyl)propionic acid	NFKB1,	4790,	CG11992,
2-AG	CNR2,CNR1,	1269,1268,	CG12796,CG12796,
2-amino-1-methyl-6-phenylimidazo(4,5-b)pyridine	UGT1A1,UGT1A7,	54658,54577,	CG4772,CG4772,
2-amino-3,4-dimethylimidazo(4,5-f)quinoline	CYP3A4,CYP3A5,	1576,1577,	CG2060,CG2060,
2-aminoethoxydiphenyl borate	TRPV1,TRPV3,TRPV6,TRPV2,	7442,162514,55503,51393,	CG5842,CG5842,CG5842,CG5842,

2-AP	NFKB1,SERPINC1,	4790,462,	CG11992,CG8137,
2-CADO	NFKB1,	4790,	CG11992,
2-chloro-5-nitrobenzanilide	PSMD9,	5715,	CG9588,
2-cyano-3-hydroxy-N-(4-(trifluoromethyl)phenyl)-2-hepten-6-ynamide	NFKB1,	4790,	CG11992,
2-cyanomethylthiopyridine-4-carbonitrile	CYP3A4,	1576,	CG2060,
2-cyclopentyl-5-(5-isoquinolylsulfonyl)-6-nitro-1H-benzo(D)imidazole	CELSR1,NFKB1,GPR12,CNR2,TRPV1,ME2,ME3,PSMD9,	9620,4790,2835,1269,7442,4200,10873,5715,	CG11895,CG11992,CG12796,CG12796,CG5842,CG5889,CG5889,CG9588,
2-DG	SLC2A1,CCNB1,GLRX2,GBF1,	6513,891,51022,8729,	CG1086,CG5940,CG6852,CG8487,
2-hydroxy-4-(2,2,3,3,3-pentafluoropropoxy)benzoic acid	PSMD9,	5715,	CG9588,
2-hydroxyamino-1-methyl-6-phenylimidazo(4,5-b)pyridine	UGT1A1,	54658,	CG4772,
2-hydroxyamino-3-methylimidazo(4,5-f)quinoline	PLXNB1,	5364,	CG11081,
2-ME	NFKB1,SMN1,LARP6,TYMS,CCNB1,PSMD9,	4790,6606,55323,7298,891,5715,	CG11992,CG16725,CG17386,CG3181,CG5940,CG9588,
2-methoxyacetic acid [2-[2-[3-(1H-benzimidazol-2-yl)propylmethyl-amino]ethyl]-6-fluoro-1-isopropyl-tetralin-2-yl] ester	CYP3A4,	1576,	CG2060,
2-methyl-1-((4-methyl-5-isoquinolyl)sulfonyl)homopiperazine	SMN1,	6606,	CG16725,
2-N-(4-(1-azitrifluoroethyl)benzoyl)-1,3-bis-(mannos-4-yloxy)-2-propylamine	SLC2A1,	6513,	CG1086,
2-Naftol	GSTT1,	2952,	CG30005,
2-oxothiazolidine-4-carboxylic acid	NFKB1,	4790,	CG11992,
2-phenyl-4-oxohydroquinoline	CDC2,	983,	CG8203,
2,2,2-trichloroethane-1,1-diol	SLC2A1,	6513,	CG1086,
2,2'-(hydroxynitrosohydrazono)bis-ethanamine	NFKB1,	4790,	CG11992,
2,2'-azobis(2,4-dimethylvaleronitrile)	CDK9,	1025,	CG5179,
2,2'-bipyridine	ME1,	4199,	CG5889,
2,2',4,4'-tetrachlorobiphenyl	NFKB1,	4790,	CG11992,
2,3-bis(3'-hydroxybenzyl)butane-1,4-diol	CCNA2,	890,	CG5940,
2,3-dihydroxyterephthalamide	CELSR1,ME3,ME2,	9620,10873,4200,	CG11895,CG5889,CG5889,
2,3,4-tri-O-acetyl arabinopyranosyl isothiocyanate	TRPA1,	8989,	CG5751,
2,4-diaminoquinazoline	SMN2,	6607,	CG16725,
2,4-thiazolidinedione	SLC2A4,	6517,	CG1086,
21-hydroxy-9beta,10alpha-	UGT2B7,	7364,	CG4772,

pregna-5,7-diene-3-ol-20-one			
25-desacetylirifabutin	CYP3A4,	1576,	CG2060,
25-Hydroxycholesterol	CYP4F2,	8529,	CG2060,
25(OH)D3	TRPV6,	55503,	CG5842,
3-((4-(4-chlorophenyl)piperazin-1-yl)methyl)-1H-pyrrolo(2,3-b)pyridine	HDAC3,	8841,	CG2128,
3-(2-hydroxy-4-(1,1-dimethylheptyl)phenyl)-4-(3-hydroxypropyl)cyclohexanol	CNR1,CNR2,	1268,1269,	CG12796,CG12796,
3-(2h)-pyridazinone	ADORA1,	134,	CG9753,
3-(cyclopentyloxy)-N-(3,5-dichloro-4-pyridyl)-4-methoxybenzamide	PDE4A,	5141,	CG14940,
3-aminopyrazole	CCNA2,CDK2,	890,1017,	CG5940,CG8203,
3-beta-(2-(diethylamino)ethoxy)androst-5-en-17-one	IGF2R,	3482,	CG14255,
3-BHA	UGT1A6,	54578,	CG4772,
3-hydroxybutanal	TFAP4,	7023,	CG7664,
3-hydroxyflunitrazepam	CYP3A4,	1576,	CG2060,
3-Hydroxyquinine	CYP3A4,	1576,	CG2060,
3-isobutyl-1-methyl-Xanthine	CADPS,	8618,	CG18026,
3-keto-desogestrel	CYP3A4,	1576,	CG2060,
3-methoxy-4-aminoazobenzene	CYP4B1,	1580,	CG2060,
3-Methoxymorphinan	CYP3A4,	1576,	CG2060,
3-Methoxyoestradiol	CYP3A4,	1576,	CG2060,
3-methylcholanthrene	PLXNB1,CYP3A7,CYP3A4,CYP3A5,CYP4F3,UGT1A1,SERPINB3,PSMD9,	5364,1551,1576,1577,4051,54658,6317,5715,	CG11081,CG2060,CG2060,CG2060,CG4772,CG8137,CG9453,CG9460,CG9588,
3-MI	CYP3A4,	1576,	CG2060,
3,3',4,5'-tetrahydroxystilbene	NFKB1,FGFR4,	4790,2264,	CG11992,CG7223,
3,4-DCI	NFKB1,	4790,	CG11992,
3,4,5-trihydroxybenzamidoxime	NFKB1,	4790,	CG11992,
4-(3-3,4-p-menthadien-(1,8)-yl)olivetol	CNR1,CNR2,	1268,1269,	CG12796,CG12796,
4-(3-Butoxy-4-methoxybenzyl)-2-imidazolidinone	PDE4A,	5141,	CG14940,
4-(4-(4-chlorophenyl)-4-hydroxy-1-piperidiny)-1-(4-fluorophenyl)-1-butanol	CYP3A4,	1576,	CG2060,
4-(4-(N-benzoylamino)anilino)-6-methoxy-7-(3-(1-morpholino)propoxy)quinazoline	AURKA,	6790,	CG6620,
4-(4-fluorophenyl)-2-(4-hydroxyphenyl)-5-(4-pyridyl)imidazole	POLD1,CDC2,	5424,983,	CG5949,CG8203,
4-(5-benzo(1,3)dioxol-5-yl)-4-pyridin-2-yl-1H-imidazol-2-yl)benzamide	SMN1,SMAD7,	6606,4092,	CG16725,CG5201,
4-(benzodioxan-5-yl)-1-(indan-	HDAC3,	8841,	CG2128,

2-yl)piperazine			
4-(N-methyl-N-nitrosamino)-1-(3-pyridyl)-1-butanone	CYP4F3,CYP3A5,	4051,1577,	CG2060,CG2060,
4-AP	PLXNB2,FGFR3,	23654,2261,	CG11081,CG7223,
4-azidosalicylic acid	UGT1A3,UGT1A4,	54659,54657,	CG4772,CG4772,
4-dimethylamino-3',4'-dimethoxychalcone	LARP6,	55323,	CG17386,
4-hydroxy-N-desmethyldamoxifen	UGT1A4,UGT1A3,	54657,54659,	CG4772,CG4772,
4-hydroxyacetophenone	ECD,	11319,	CG5714,
4-hydroxycoumarin	UGT1A6,	54578,	CG4772,
4-hydroxyestradiol-17 beta	PLXNB2,	23654,	CG11081,
4-hydroxynon-2-enal	PDHX,TRPA1,	8050,8989,	CG5261,CG5751,
4-hydroxytriazolam	CYP3A4,	1576,	CG2060,
4-methyl-N-(3-(4-methylimidazol-1-yl)-5-(trifluoromethyl)phenyl)-3-((4-pyridin-3-ylpyrimidin-2-yl)amino)benzamide	CYP3A4,	1576,	CG2060,
4-phenylbutyric acid	SMN2,	6607,	CG16725,
4-S-cysteaminylphenol	SERPINB6,	5269,	CG8137,CG9453,CG9460,
4-sulfophenylmethallyl ether	ECD,	11319,	CG5714,
4,4'-DDE	CYP3A4,	1576,	CG2060,
4,4'-dipyridyl disulfide	CYP3A4,	1576,	CG2060,
4,8-dimethoxy-7-hydroxyfuro(2,3-b)quinoline	SMN1,	6606,	CG16725,
4'-epidoxorubicin	GPR177,	79971,	CG6210,
4'-N-benzoylstauroporine	POLD1,CDK2,CDC2,	5424,1017,983,	CG5949,CG8203,CG8203,
4(2'-aminoethyl)amino-1,8-dimethylimidazo(1,2-a)quinoxaline	CCNB1,AURKA,CDC2,	891,6790,983,	CG5940,CG6620,CG8203,
4alpha-phorbol 12,13-didecanone	TRPV4,	59341,	CG5842,
4alphaPDD	TRPV4,	59341,	CG5842,
5-((1,2-dihydro-2-oxo-3H-indol-3-ylidene)methyl)-2,4-dimethyl-1H-pyrrole-3-propanoic acid	FGFR1,	2260,	CG7223,
5-(4'-(N-piperidinyl)phenylazo)indazole	CCNA2,CDK2,	890,1017,	CG5940,CG8203,
5-7-oxo-zeaenol	NFKB1,	4790,	CG11992,
5-AC	GALR1,	2587,	CG2872,
5-acetylneuraminy-(2-3)-galactosyl-(1-4)-(fucopyranosyl-(1-3))-N-acetylglucosamine	SLC2A1,	6513,	CG1086,
5-azido-1H-indole-3-acetic acid	KDELRL1,	10945,	CG5183,
5-HT	SERPINC1,	462,	CG8137,
5-methoxy-N,N-diisopropyltryptamine	CYP3A4,	1576,	CG2060,
5-Mop	CYP3A4,	1576,	CG2060,
5,10-methylenetetrahydrofolate	TYMS,	7298,	CG3181,
5,6-dimethylxanthenoneacetic acid	NFKB1,	4790,	CG11992,

5'-O-(((2-decanoylamino-3-phenylpropyloxycarbon-yl)amino)sulfonyl)uridine	FYN,	2534,	CG7873,
6 beta-hydroxycortisol	CYP3A4,	1576,	CG2060,
6-Aminochrysene-1,2-dihydrodiol	CYP4F3,CYP3A5,	4051,1577,	CG2060,CG2060,
6-chloro-2-pyridylmethyl ni- trate	COG6,	57511,	CG1968,
6-deoxy-6-bromoascorbic acid	SLC2A1,	6513,	CG1086,
6-hydroxydexamethasone	CYP3A4,	1576,	CG2060,
6-Mercaptopurine	TXNRD2,	10587,	CG2151,
6,6'-oxybis(2,2- dimethylhexanoic acid)	UGT2B7,UGT2B17,UG T1A3,	7364,7367,54659,	CG4772,CG4772,CG47 72,
64Gd	TXNRD2,TXNRD1,TRP A1,TRPV1,CD36,	10587,7296,8989, 7442,948,	CG2151,CG2151,CG57 51,CG5842,CG7422,
7-(1,1-dimethylethyl)-6-(2- ethyl-2H-1,2,4-triazol-3- ylmethoxy)-3-(2-fluorophenyl)- 1,2,4-triazolo(4,3-b)pyridazine	CYP3A4,	1576,	CG2060,
7-benzylamino-6-chloro-2- piperazino-4- pyrrolidinopteridine	PDE4A,	5141,	CG14940,
7-benzyloxyquinoline	CYP3A4,	1576,	CG2060,
7-CDL	UGT8,	7368,	CG4772,
7-hydroxystaurosporine	NFKB1,TYMS,CCNA2, POLD1,CDC2,CDK2,P SMD9,	4790,7298,890,54 24,983,1017,5715,	CG11992,CG3181,CG5 940,CG5949,CG8203, CG8203,CG9588,
7-ketocholesterol	DYNLL1,	8655,	CG6998,
7,8-BF	CYP3A4,CYP3A5,CYP3 A7,	1576,1577,1551,	CG2060,CG2060,CG20 60,
7,8-dihydroneopterin	NFKB1,	4790,	CG11992,
7'-Isothiocyanato-11-hydroxy- 1',1'- dimethylheptylhexahydrocan- nabinol	CNR1,	1268,	CG12796,
7C3MT	NFKB1,CYP3A4,CCNB 1,PSMD9,	4790,1576,891,57 15,	CG11992,CG2060,CG5 940,CG9588,
7H-Pyrrolo(2,3-d)pyrimidine	TYMS,	7298,	CG3181,
8-((4-bromo-2,3- dioxobutyl)thio)-adenosine 3',5'-cyclic monophosphate	PDE4A,	5141,	CG14940,
8-(2,6-dichlorophenyl)-10- methyl-3-((4-morpholin-4- ylphenyl)amino)-2,4,10- triazabicyclo(4.4.0)deca- 1,3,5,7-tetraen-9-one	LPAR2,	9170,	CG12796,
8-(3-chlorostyryl)caffeine	ADORA2A,	135,	CG9753,
8-anilinonaphthalene-1- sulfonic acid	SERPINC1,	462,	CG8137,
8-Hydroxy-2-(di-n- propylamino)tetralin	FGFR3,	2261,	CG7223,
8-Isoprostane	CADPS,	8618,	CG18026,
8,10-bis((2,2-dimethyl-1- oxopropyl)oxy)-11-methyl- 1234-tetrahydro-6H- benzo(beta)quinolizin-6-one	CNR2,	1269,	CG12796,
9-(4'-aminophenyl)-9H- pyrido(3,4-b)indole	CYP3A4,	1576,	CG2060,

9-anthroic acid	VDAC1,OPN4,	7416,94233,	CG17137,CG4550,
9-CRA	UGT2B15,CD36,	7366,948,	CG4772,CG7422,
9-hydroxy-risperidone	CYP4F3,CYP3A5,CYP3A4,	4051,1577,1576,	CG2060,CG2060,CG2060,
9,10-anthraquinone	CYP4F3,CYP3A5,	4051,1577,	CG2060,CG2060,
9H-xanthene	CYP3A4,UGT1A6,	1576,54578,	CG2060,CG4772,
A 71915	NPR1,	4881,	CG31183,
A-300-I	SLC2A4,NFKB1,S1PR1,SMN2,FOXP3,HDAC3,GALR1,PEG3,TYMS,UBE2L3,AURKB,CDC2,MLL,ATP1B2,	6517,4790,1901,607,50943,8841,2587,5178,7298,7332,9212,983,4297,482,	CG1086,CG11992,CG12796,CG16725,CG16899,CG2128,CG2872,CG31364,CG6930,CG3181,CG5788,CG6620,CG8203,CG8651,CG8663,
a-ADP	SERPINC1,	462,	CG8137,
A73025	SERPINC1,	462,	CG8137,
Abbott	PSMD12,	5718,	CG1100,
abciximab	SAG,SERPINC1,	6295,462,	CG5711,CG8137,
Absele	SLC2A1,	6513,	CG1086,
ABT-737	NFKB1,	4790,	CG11992,
acetamide 45	PDE4A,	5141,	CG14940,
Aceton	CD36,	948,	CG7422,
acetonitrile	CYP3A4,	1576,	CG2060,
acetyl-11-ketoboswellic acid	NFKB1,	4790,	CG11992,
acetylcholine	PLXNA2,DLD,	5362,1738,	CG11081,CG7430,
acetylvalerenolic acid	NFKB1,	4790,	CG11992,
Aclarubicin	SMN2,SMN1,	6607,6606,	CG16725,CG16725,
Acolen	CYP3A4,	1576,	CG2060,
ACON	CYP3A5,CYP3A4,CYP3A7,TXNRD1,DLL1,SA G,	1577,1576,1551,7296,28514,6295,	CG2060,CG2060,CG2060,CG2151,CG3619,CG5711,
ACT D	SLC2A3,MRPL41,BRD8,CYP3A4,TXNRD1,TXNRD2,KHDRBS1,SNRPG,	6515,64975,10902,1576,7296,10587,10657,6637,	CG1086,CG12954,CG14514,CG2060,CG2151,CG2151,CG3613,CG5821,CG9742,
actinium	VDAC1,	7416,	CG17137,
Actosin	SLC2A4,NFKB1,LPAR1,PDE1B,PDE4A,SMN1,PSMD9,	6517,4790,1902,5153,5141,6606,5715,	CG1086,CG11992,CG12796,CG14940,CG14940,CG16725,CG9588,
adalimumab	PSMD12,CD36,	5718,948,	CG1100,CG7422,
Adalin	ECD,	11319,	CG5714,
Adanon	CYP3A4,CYP3A5,FGFR3,	1576,1577,2261,	CG2060,CG2060,CG7223,
Adfeed	PSIP1,	11168,	CG7946,
adinazolam	CYP3A4,	1576,	CG2060,
Adofeed	UGT2B7,CD36,	7364,948,	CG4772,CG7422,
Adrenor	SLC2A4,NFKB1,CNR1,LPAR2,TBXAS1,TYMS,ECD,FGFR4,FGFR3,FYN,	6517,4790,1268,9170,6916,7298,11319,2264,2261,2534,	CG1086,CG11992,CG12796,CG12796,CG2060,CG3181,CG5714,CG7223,CG7223,CG7873,
Adrin	KCNQ5,PDE4A,CYP4F2,CYP4A11,UBE2L3,FGFR3,	56479,5141,8529,1579,7332,2261,	CG12915,CG14940,CG2060,CG2060,CG5788,CG7223,
AEBSF	CTSB,	1508,	CG10992,
Aeromax	DHX8,DHX34,	1659,9704,	CG10689,CG1375,CG1

			4198,
afloqualone	UGT1A3,UGT1A4,	54659,54657,	CG4772,CG4772,
AGMATINE	CCNA2,	890,	CG5940,
AIDSVAX	SFRS1,	6426,	CG6987,
ajoene	CCNB1,	891,	CG5940,
ajulemic acid	CNR1,	1268,	CG12796,
alachlor	CYP3A4,CYP3A7,	1576,1551,	CG2060,CG2060,
Aladerm	CDK2,	1017,	CG8203,
alaninate	FGFR1,	2260,	CG7223,
Alat	NFKB1,CYP3A4,CYP3A5,FGFR3,	4790,1576,1577,2261,	CG11992,CG2060,CG2060,CG7223,
Alcolo	TXNRD2,	10587,	CG2151,
Alcuronium	FGFR3,	2261,	CG7223,
Aldara	NFKB1,	4790,	CG11992,
ALDO	CYP3A4,HDAC3,TMBIM4,GAD1,	1576,8841,51643,2571,	CG2060,CG2128,CG6901,CG7811,
Aldrich	ACTR2,	10097,	CG9901,
alemtuzumab	CADPS,	8618,	CG18026,
Alfarol	CYP3A4,	1576,	CG2060,
Alfentanil	ANKHD1,CYP3A4,CYP3A5,FGFR3,	54882,1576,1577,2261,	CG18671,CG2060,CG2060,CG7223,
ALIMTA	TBXAS1,TYMS,	6916,7298,	CG2060,CG3181,
aliskiren	CYP3A4,	1576,	CG2060,
Alli	CNR1,	1268,	CG12796,
ALLN	NFKB1,CD36,	4790,948,	CG11992,CG7422,
alloxazine	ADORA2B,	136,	CG9753,
allyl isothiocyanate	TRPA1,	8989,	CG5751,
almokalant	UGT2B7,	7364,	CG4772,
aloesin	CDK2,	1017,	CG8203,
Alprenolol	GSTO1,DNALI1,	9446,7802,	CG6673,CG6971,
Alvesco	CYP3A4,	1576,	CG2060,
AM 1387	CNR1,	1268,	CG12796,
AM 251	CNR1,	1268,	CG12796,
Am 80	NFKB1,	4790,	CG11992,
AMD 070	CYP3A4,	1576,	CG2060,
Amiloride	ACCN1,SLC25A21,CCNB1,SERPINB3,	40,89874,891,6317,	CG1058,CG5254,CG5940,CG8137,CG9453,CG9460,
Aminacrine	NFKB1,	4790,	CG11992,
Amine BB	SERPINB1,	1992,	CG8137,CG9453,CG9460,
amino-polyethyleneoxide-sulfonate	SERPINC1,	462,	CG8137,
aminoflavone	CYP4F3,CYP3A5,	4051,1577,	CG2060,CG2060,
Amiodarone	CYP3A4,FGFR3,	1576,2261,	CG2060,CG7223,
Amlodipine	CYP3A4,	1576,	CG2060,
Amphotericin B	UGT8,	7368,	CG4772,
amprenavir	CYP3A7,CYP3A4,	1551,1576,	CG2060,CG2060,
Amrinone	SMARCA1,	6594,	CG8625,
amsonic acid	CDC2,	983,	CG8203,
Amygdalin	LPAR2,	9170,	CG12796,
AN 207	LARP6,	55323,	CG17386,
Anaboleen	SLC2A1,NFKB1,UGT2B15,UGT1A4,UGT1A3	6513,4790,7366,54657,54659,7367,	CG1086,CG11992,CG4772,CG4772,CG4772,

	,UGT2B17,UGT1A9,U BE2L3,CCNA2,	54600,7332,890,	CG4772,CG4772,CG57 88,CG5940,
anacardic acid	AURKA,	6790,	CG6620,
Anandamide	NFKB1,CNR1,CNR2,T RPV1,CD36,CDK2,	4790,1268,1269,7 442,948,1017,	CG11992,CG12796,CG 12796,CG5842,CG742 2,CG8203,
Anco	NFKB1,PSIP1,	4790,11168,	CG11992,CG7946,
Andrographis	TRPV4,	59341,	CG5842,
Androtine	UGT2B17,	7367,	CG4772,
Aneol	CCNB1,POLD1,CDC2,	891,5424,983,	CG5940,CG5949,CG82 03,
Ang II	LPAR2,TXNRD3,SERPI NC1,	9170,114112,462,	CG12796,CG2151,CG8 137,
Anisomycin	PSMD12,NFKB1,TXNR D2,	5718,4790,10587,	CG1100,CG11992,CG2 151,
Anon	TRPV1,	7442,	CG5842,
Anthocyanins	CYP3A4,	1576,	CG2060,
anthra(1,9-cd)pyrazol-6(2H)- one	SLC2A4,NFKB1,SMN1 ,CYP3A4,CCNB1,CDC 2,PSMD9,	6517,4790,6606,1 576,891,983,5715,	CG1086,CG11992,CG1 6725,CG2060,CG5940 ,CG8203,CG9588,
anthracene	CD226,CYP3A5,CYP4 F3,FYN,PSIP1,	10666,1577,4051, 2534,11168,	CG13162,CG2060,CG2 060,CG7873,CG7946,
anthralin	NFKB1,CYP3A5,CYP3 A7,	4790,1577,1551,	CG11992,CG2060,CG2 060,
Anthricin	CYP3A4,	1576,	CG2060,
anthrone	KCNQ5,	56479,	CG12915,
antibiotic G 418	CCNA2,	890,	CG5940,
antibiotic H107	PSMD12,	5718,	CG1100,
Antimycin A	TXNRD2,CCNA2,POL D1,CDC2,PSMD9,	10587,890,5424,9 83,5715,	CG2151,CG5940,CG59 49,CG8203,CG9588,
Anyvim	CYP3A4,	1576,	CG2060,
APAP	CYP3A4,UGT1A4,UGT 1A3,UGT1A1,	1576,54657,54659 ,54658,	CG2060,CG4772,CG47 72,CG4772,
APDC	THOC4,NFKB1,LARP6, SMAD7,	10189,4790,55323 ,4092,	CG1101,CG11992,CG1 7386,CG5201,
Aphidicolin	NFKB1,TYMS,	4790,7298,	CG11992,CG3181,
Aphloiol	NFKB1,	4790,	CG11992,
apicidin	NFKB1,CDK2,	4790,1017,	CG11992,CG8203,
Apigenin	ACAT1,NFKB1,UGT1A 4,UGT1A1,UGT2B7,U GT1A3,UGT1A6,CCNB 1,CCNA2,POLD1,EXO SC1,GADD45GIP1,CD C2,CDK2,	38,4790,54657,54 658,7364,54659,5 4578,891,890,542 4,51013,90480,98 3,1017,	CG10932,CG11992,CG 4772,CG4772,CG4772 ,CG4772,CG4772,CG5 940,CG5940,CG5949, CG6249,CG7172,CG82 03,CG8203,
apocynin	NFKB1,	4790,	CG11992,
Apotransferrin	PSMD9,	5715,	CG9588,
aprepitant	CYP3A4,	1576,	CG2060,
APRL	SLC2A4,NFKB1,LPAR2 ,NCF4,FYN,SERPINB3,	6517,4790,9170,4 689,2534,6317,	CG1086,CG11992,CG1 2796,CG7129,CG7873 ,CG8137,CG9453,CG9 460,
AQ4N	CYP3A5,CYP4F3,	1577,4051,	CG2060,CG2060,
arabinogalactan	DHX9,	1660,	CG9323,
Arac	NFKB1,	4790,	CG11992,
Aralen	NFKB1,C9orf5,DHPS,	4790,23731,1725,	CG11992,CG2698,CG8 005,
Arasine	SLC2A4,	6517,	CG1086,

Areca	NFKB1,	4790,	CG11992,
Arecoline	CCNB1,POLD1,CDC2,	891,5424,983,	CG5940,CG5949,CG8203,
Areether	CYP3A4,	1576,	CG2060,
argatroban	CYP3A4,SERPINC1,	1576,462,	CG2060,CG8137,
aripiprazole	CYP3A4,	1576,	CG2060,
Aron	TXNRD1,TXNRD2,	7296,10587,	CG2151,CG2151,
Artein	NFKB1,SMN1,CYP4F2,CYP3A5,CYP3A4,CD36,CDK2,PSMD9,	4790,6606,8529,1577,1576,948,1017,5715,	CG11992,CG16725,CG2060,CG2060,CG2060,CG7422,CG8203,CG9588,
Artra	NFKB1,GSTT1,CD36,	4790,2952,948,	CG11992,CG30005,CG7422,
arvanil	TRPV1,CD36,	7442,948,	CG5842,CG7422,
asiatic acid	POLD1,CDC2,	5424,983,	CG5949,CG8203,
asiaticoside	SMAD7,	4092,	CG5201,
Asmax	PLXNB1,NFKB1,PDE4A,SMN1,CYP4F3,CYP3A5,SERPINC6,ADORA2A,	5364,4790,5141,606,4051,1577,5269,135,	CG11081,CG11992,CG14940,CG16725,CG2060,CG2060,CG8137,CG9453,CG9460,CG9753,
Asmol	NFKB1,LPAR2,PDE4A,SMN1,	4790,9170,5141,606,	CG11992,CG12796,CG14940,CG16725,
ASTA	RFC1,FOXP3,CYP3A5,CYP4F3,SERPINC6,PAFAH1B1,	5981,50943,1577,4051,5269,5048,	CG1119,CG16899,CG2060,CG2060,CG8137,CG9453,CG9460,CG8440,
astatine	LGI1,SERPINC1,	9211,462,	CG12927,CG8137,
Astemizole	CYP3A4,	1576,	CG2060,
Astragaloside A	NFKB1,	4790,	CG11992,
atazanavir	CYP3A4,UGT1A4,UGT1A1,UGT1A3,	1576,54657,54658,54659,	CG2060,CG4772,CG4772,CG4772,
ATL 146e	ADORA2A,	135,	CG9753,
Atorel	LPAR2,	9170,	CG12796,
atorvastatin	SLC2A4,NFKB1,CYP3A5,CYP3A4,CD36,SCARB2,SERPINC1,	6517,4790,1577,1576,948,950,462,	CG1086,CG11992,CG2060,CG2060,CG7422,CG7422,CG8137,
Atovaquone	CYP3A4,	1576,	CG2060,
ATRA	PSMD12,THOC4,NFKB1,IGF2R,SMN1,FOXP3,GFRA1,GFRA2,TRAM1,CYP4B1,CYP4A11,TBXAS1,CYP3A7,TXNRD2,FZR1,MED9,KHDRBS1,C1orf107,UGT2B15,KDELRL2,PDHX,UBE2L3,CCNA1,CCNB1,POLD1,CD36,FGR,PSIP1,SERPINC1,CDK2,CDK2,CDK5,PAFAH1B1,MLL,PSMD9,	5718,10189,4790,3482,6606,50943,2674,2675,23471,1580,1579,6916,1551,10587,51343,55090,10657,27042,7366,11014,8050,7332,8900,891,5424,948,2268,11168,462,1017,983,1020,5048,4297,5715,	CG1100,CG1101,CG11992,CG14255,CG16725,CG16899,CG17203,CG17203,CG18833,CG2060,CG2060,CG2060,CG2060,CG2151,CG3000,CG30113,CG3613,CG5821,CG3735,CG4772,CG5183,CG5261,CG5788,CG5940,CG5940,CG5949,CG7422,CG7873,CG7946,CG8137,CG8203,CG8203,CG8203,CG8440,CG8651,CG9588,
Atropine	FGFR3,	2261,	CG7223,
Auranofin	NFKB1,	4790,	CG11992,
AuTM	PARD6A,	50855,	CG5884,
auxin	NFKB1,	4790,	CG11992,

avasimibe	CYP3A4,	1576,	CG2060,
AVE 0118	FGFR3,	2261,	CG7223,
avicularin	UGT1A9,	54600,	CG4772,
Avid	CNR2,	1269,	CG12796,
Axert	CYP3A4,	1576,	CG2060,
Axsain	CNR1,TRPV1,DLD,PSI P1,	1268,7442,1738,1 1168,	CG12796,CG5842,CG7 430,CG7946,
Aza-dC	S1PR1,	1901,	CG12796,
Aza-deoxycytidine	PEG3,	5178,	CG31364,CG6930,
azacyclonol	CYP3A4,	1576,	CG2060,
Azadc	LARP6,FZR1,PEG3,DY NLL1,FYN,PAFAH1B1, ATP1B2,	55323,51343,5178 ,8655,2534,5048,4 82,	CG17386,CG3000,CG3 1364,CG6930,CG6998 ,CG7873,CG8440,CG8 663,
azamulin	CYP3A4,	1576,	CG2060,
azaspirane	NFKB1,	4790,	CG11992,
azelaic acid	TXNRD1,	7296,	CG2151,
azelastine	NFKB1,CYP3A4,	4790,1576,	CG11992,CG2060,
azelnidipine	CYP3A4,CD36,	1576,948,	CG2060,CG7422,
azido ruthenium	VDAC1,	7416,	CG17137,
Azine	TXNRD1,	7296,	CG2151,
Azithromycin	NFKB1,	4790,	CG11992,
Azobisisobutyramidinium di- chloride	CDK9,	1025,	CG5179,
Azole	CYP3A4,	1576,	CG2060,
Azoles	CYP3A4,	1576,	CG2060,
Azolidine	NFKB1,	4790,	CG11992,
Azophen	CYP3A7,CYP3A5,	1551,1577,	CG2060,CG2060,
Azor	PLXNA2,CYP3A43,CY P3A4,CYP3A5,	5362,64816,1576, 1577,	CG11081,CG2060,CG2 060,CG2060,
BA (VAN)	CYP3A4,CYP3A7,	1576,1551,	CG2060,CG2060,
Ba 0108E	SERPINC1,	462,	CG8137,
bacitracin	SERPINB1,	1992,	CG8137,CG9453,CG94 60,
Baclofen	FGFR3,	2261,	CG7223,
bacterial lysate	NAP1L4,	4676,	CG5330,
bafilomycin A1	SFRS1,	6426,	CG6987,
Bagren	CYP3A4,	1576,	CG2060,
baicalein	CCNB1,POLD1,CDC2,	891,5424,983,	CG5940,CG5949,CG82 03,
Barbiturate	DYNC1H1,SLC2A1,	1778,6513,	CG17150,CG1086,
Barnidipine	CYP3A4,	1576,	CG2060,
BAY 11-7085	NFKB1,	4790,	CG11992,
BB-K8	SMN1,	6606,	CG16725,
BCNU	GSR,UBE2L3,GLRX, CYP4F3,CYP3A5,GSR, HADHB,	2936,7332,2745, 4051,1577,2936,3 032,	CG2151,CG5788,CG68 52, CG2060,CG2060,CG21 51,CG4581,
Beflavin	DDX18,	8886,	CG6375,
Belt	RBM6,	10180,	CG4887,
benazepril	NFKB1,	4790,	CG11992,
bendamustine	CYP3A4,	1576,	CG2060,
Benidipine	SERPINC1,	462,	CG8137,
benzamidine	UBE2L3,DYNLL2,DYN LL1,	7332,140735,8655 ,	CG5788,CG6998,CG69 98,

Benzodiazepines	KCNQ2,PDE4A,CYP3A4,FGFR3,	3785,5141,1576,2261,	CG12915,CG14940,CG2060,CG7223,
Benzodioxoles	CNR1,	1268,	CG12796,
Benzphetamine	CYP4F11,CYP3A4,	57834,1576,	CG2060,CG2060,
benzylamine N-oxide	FMO3,	2328,	CG3006,
benzylamine	SLC2A4,	6517,	CG1086,
benzyloxycarbonylleucyl-leucyl-leucine aldehyde	NFKB1,S1PR1,SMN1,CYP3A4,KHDRBS1,SMAD6,CCNB1,POLD1,AURKA,CDC2,CDK2,PSMD9,	4790,1901,6606,1576,10657,4091,891,5424,6790,983,1017,5715,	CG11992,CG12796,CG16725,CG2060,CG3613,CG5821,CG5201,CG5940,CG5949,CG6620,CG8203,CG8203,CG9588,
benzyloxycarbonylvalyl-alanyl-aspartyl fluoromethyl ketone	TYMS,	7298,	CG3181,
beractant	NFKB1,	4790,	CG11992,
berberine	CYP3A4,CCNB1,	1576,891,	CG2060,CG5940,
bergamottin	CYP3A4,	1576,	CG2060,
bergaptol	CYP3A4,	1576,	CG2060,
beta-glycerophosphoric acid	TXNRD2,TXNRD1,	10587,7296,	CG2151,CG2151,
beta-lapachone	NFKB1,	4790,	CG11992,
beta-Naphthoflavone	CYP4F3,CYP3A4,CYP3A5,UGT1A4,UGT1A1,UGT1A3,UGT1A9,UGT1A6,	4051,1576,1577,54657,54658,54659,54600,54578,	CG2060,CG2060,CG2060,CG4772,CG4772,CG4772,CG4772,CG4772,CG4772,
beta-propiolactone	SFRS1,	6426,	CG6987,
Bethanechol	FGFR3,	2261,	CG7223,
betulinic acid	NFKB1,	4790,	CG11992,
bexarotene	PSMD12,PSIP1,	5718,11168,	CG1100,CG7946,
Bezafibrate	NFKB1,LPAR3,CYP3A4,	4790,23566,1576,	CG11992,CG12796,CG2060,
BG 9928	ADORA1,	134,	CG9753,
BGC945	TYMS,	7298,	CG3181,
biapigenin	CYP3A4,	1576,	CG2060,
BIBX 1382BS	CHM,	1121,	CG8432,
biphenyl-4-ol	UGT1A4,UGT1A3,	54657,54659,	CG4772,CG4772,
BIRB 796	DLG1,	1739,	CG1725,
bisindolylmaleimide I	NFKB1,CYP3A4,GPR177,	4790,1576,79971,	CG11992,CG2060,CG6210,
bisindolylmaleimide III	CDK2,	1017,	CG8203,
Bisoprolol	CYP3A4,	1576,	CG2060,
bisperoxovanadium	NFKB1,	4790,	CG11992,
Bisphenol A-Glycidyl Methacrylate	CLTB,	1212,	CG6948,
bizelesin	SERPINB3,	6317,	CG8137,CG9453,CG9460,
BL1521	PSMD9,	5715,	CG9588,
Bla-S	NFKB1,	4790,	CG11992,
Blow	CCNA2,FRK,	890,2444,	CG5940,CG7873,
BM 41.440	CCNB1,POLD1,CDC2,	891,5424,983,	CG5940,CG5949,CG8203,
BML 241	S1PR3,	1903,	CG12796,
BMS 310705	CYP3A4,	1576,	CG2060,
BMS204352	KCNQ4,KCNQ5,UGT2B7,	9132,56479,7364,	CG12915,CG12915,CG4772,
BMS453	CDK2,	1017,	CG8203,
Bo-Xan	CHM,	1121,	CG8432,

Boltin	SERPINC1,	462,	CG8137,
Bonopen	ME3,	10873,	CG5889,
boron	TXNRD1,	7296,	CG2151,
Borrelia-burgdorferi	CNR2,	1269,	CG12796,
bortezomib	NFKB1,CYP4F3,CYP3A5,CYP3A4,KHDRBS1,P SIP1,PSMD9,	4790,4051,1577,1 576,10657,11168, 5715,	CG11992,CG2060,CG2 060,CG2060,CG3613, CG5821,CG7946,CG95 88,
bosentan	CYP3A4,	1576,	CG2060,
bosutinib	CDK2,PSMD9,	1017,5715,	CG8203,CG9588,
botrocetin	ACTR2,	10097,	CG9901,
BPDE	NFKB1,GSTT1,	4790,2952,	CG11992,CG30005,
BR-II	TBXAS1,TYMS,	6916,7298,	CG2060,CG3181,
Brake	LPAR3,CD36,	23566,948,	CG12796,CG7422,
bredinin	CCNA2,	890,	CG5940,
Brefeldin A	SLC2A4,GABARAPL2,I GF2R,LARP6,KDELR2, CCNB1,CTBP1,GBF1,	6517,11345,3482, 55323,11014,891, 1487,8729,	CG1086,CG12334,CG1 4255,CG17386,CG518 3,CG5940,CG7583,CG 8487,
Bromazepam	CYP3A4,	1576,	CG2060,
bromo-cis-stilbene	CCNB1,	891,	CG5940,
brucine	FGFR3,	2261,	CG7223,
bryostatin 1	CDK2,CDC2,PSMD9,	1017,983,5715,	CG8203,CG8203,CG95 88,
Budesonide	CYP3A4,CYP3A5,	1576,1577,	CG2060,CG2060,
bufalin	CCNA2,	890,	CG5940,
bufuralol	CYP3A4,	1576,	CG2060,
Bumetanide	FGFR3,	2261,	CG7223,
BuOH	ME1,FGFR3,FGR,	4199,2261,2268,	CG5889,CG7223,CG78 73,
Bupivacaine	KCNQ2,	3785,	CG12915,
Buprenorphine	CYP3A4,	1576,	CG2060,
BUPROPION	CYP3A4,CCKAR,GAD1 ,	1576,886,2571,	CG2060,CG6881,CG78 11,
Buspirone	CYP3A4,	1576,	CG2060,
Busulfan	GSTT1,	2952,	CG30005,
Buthionine Sulfoximine	LARP6,GSR,SERPINB6 ,	55323,2936,5269,	CG17386,CG2151,CG8 137,CG9453,CG9460,
Butyrate	NFKB1,HDAC3,GSTT2 ,CCNA2,CCNB1,CDC2 ,CDK2,	4790,8841,2953,8 90,891,983,1017,	CG11992,CG2128,CG3 0005,CG5940,CG5940 ,CG8203,CG8203,
butyrolactone I	UBE2L3,CCNB1,POLD 1,CDC2,CDK2,CDK5,	7332,891,5424,98 3,1017,1020,	CG5788,CG5940,CG59 49,CG8203,CG8203,C G8203,
C 1027	CCNB1,POLD1,CDC2,	891,5424,983,	CG5940,CG5949,CG82 03,
C 76	RPL11,	6135,	CG7726,
CACP	NFKB1,LPAR1,MRPL4 1,VDAC1,DNAH5,LAR P6,TXNRD3,NPR2,ZS CAN1,TYMS,CCNA2,G PR177,AURKA,CASK,S ER- PINB6,SERPINB3,DDO ST,PSMD9,	4790,1902,64975, 7416,1767,55323, 114112,4882,2843 12,7298,890,7997 1,6790,8573,5269, 6317,1650,5715,	CG11992,CG12796,CG 12954,CG17137,CG17 150,CG17386,CG2151 ,CG31183,CG31364,C G6930,CG3181,CG594 0,CG6210,CG6620,CG 6703,CG8137,CG9453 ,CG9460,CG8137,CG9 453,CG9460,CG9022, CG9588,

Calcijex	PSMD12,TRPV6,	5718,55503,	CG1100,CG5842,
Calcimycin	PSMD12,NFKB1,DYNL L1,FGR,	5718,4790,8655,2 268,	CG1100,CG11992,CG6 998,CG7873,
calphostin C	NFKB1,UGT1A1,UGT1 A4,UGT1A3,FGFR4,	4790,54658,54657 ,54659,2264,	CG11992,CG4772,CG4 772,CG4772,CG7223,
Calyculin	SLC2A1,SLC2A4,NFK B1,TXNRD2,TXNRD1,	6513,6517,4790,1 0587,7296,	CG1086,CG1086,CG11 992,CG2151,CG2151,
Camptothecin	PHB,NFKB1,S1PR1,BR D8,CCNA2,CCNB1,	5245,4790,1901,1 0902,890,891,	CG10691,CG11992,CG 12796,CG14514,CG59 40,CG5940,
Canef	CYP3A4,CYP3A5,	1576,1577,	CG2060,CG2060,
cangrelor	PRDX6,PSMD9,	9588,5715,	CG3083,CG9588,
Cannabinoids	CNR1,CNR2,TRPA1,A NK1,	1268,1269,8989,2 86,	CG12796,CG12796,CG 5751,CG7462,
Cannabis	CNR1,CNR2,CYP3A4, GSR,	1268,1269,1576,2 936,	CG12796,CG12796,CG 2060,CG2151,
Cantharidin	TYMS,	7298,	CG3181,
CAPE	NFKB1,SMN1,	4790,6606,	CG11992,CG16725,
Capsaicin	TRPV1,	7442,	CG5842,
capsaicinoids	TRPV1,	7442,	CG5842,
capsazepine	TRPV1,	7442,	CG5842,
Carbachol	NFKB1,LPAR2,LPAR3, TAOK2,PDE1A,FGFR3,	4790,9170,23566, 9344,5136,2261,	CG11992,CG12796,CG 12796,CG14217,CG14 940,CG7223,
Carbamazepine	CYP4F3,CYP3A4,CYP3 A5,HDAC3,	4051,1576,1577,8 841,	CG2060,CG2060,CG20 60,CG2128,
carbapenem	VDAC1,	7416,	CG17137,
Carbapenems	VDAC1,UGT1A3,UGT1 A4,	7416,54659,54657 ,	CG17137,CG4772,CG4 772,
carbobenzoxy-leucyl-leucyl- norvalinal	AURKA,	6790,	CG6620,
Carbolines	CDK5,CDK2,	1020,1017,	CG8203,CG8203,
Carboxyethyl-phenethylamino- ethylcarboxamidoadenosine	ADORA2A,	135,	CG9753,
Cardiolipins	GLRX2,	51022,	CG6852,
carebastine	CYP3A4,	1576,	CG2060,
CARNOSOL	CCNB1,	891,	CG5940,
carrageenans	SERPINC1,	462,	CG8137,
carvacrol	TRPA1,TRPV3,	8989,162514,	CG5751,CG5842,
carvedilol	UGT2B7,UGT2B4,UGT 1A1,	7364,7363,54658,	CG4772,CG4772,CG47 72,
Casodex	NFKB1,CYP4F3,CYP3A 5,	4790,4051,1577,	CG11992,CG2060,CG2 060,
caspofungin	CYP3A4,	1576,	CG2060,
casticin	CCNA2,CDC2,	890,983,	CG5940,CG8203,
catechins	UGT1A1,	54658,	CG4772,
CB 3717	TYMS,	7298,	CG3181,
Cbdca	AURKB,SERPINB3,	9212,6317,	CG6620,CG8137,CG94 53,CG9460,
CCPA	ADORA1,	134,	CG9753,
CD 437	TXNRD2,	10587,	CG2151,
CDP 840	PDE4A,	5141,	CG14940,
Cefoxitin	VDAC1,DPAGT1,	7416,1798,	CG17137,CG5287,
celecoxib	NFKB1,UBE2L3,CCNB 1,CDK2,PSMD9,	4790,7332,891,10 17,5715,	CG11992,CG5788,CG5 940,CG8203,CG9588,
cephalomannine	CYP3A4,	1576,	CG2060,

cephalosporins	CAPZA1,VDAC1,	829,7416,	CG10540,CG17137,
cepharanthine	NFKB1,	4790,	CG11992,
cerebrolysin	SLC2A1,	6513,	CG1086,
cerivastatin	NFKB1,CYP3A5,CYP3A4,CDK2,	4790,1577,1576,1017,	CG11992,CG2060,CG2060,CG8203,
Cetomacrogol	UGT1A4,UGT1A3,	54657,54659,	CG4772,CG4772,
cetrorelix	PSIP1,	11168,	CG7946,
cetuximab	CHM,	1121,	CG8432,
CGP 12177	DYNLL1,	8655,	CG6998,
CGS 15943A	ADORA2A,	135,	CG9753,
CGS 21680	TRPV1,ADORA2A,	7442,135,	CG5842,CG9753,
CH-THF	TYMS,	7298,	CG3181,
CH2CHO	DPAGT1,TRPA1,FGFR3,	1798,8989,2261,	CG5287,CG5751,CG7223,
Chalcone	CCNA2,CCNB1,POLD1,CDC2,PSMD9,	890,891,5424,983,5715,	CG5940,CG5940,CG5949,CG8203,CG9588,
CHAPS	NFKB1,	4790,	CG11992,
Chinine	CYP4F3,CYP3A4,CYP3A5,CYP3A7,UGT2B7,	4051,1576,1577,1551,7364,	CG2060,CG2060,CG2060,CG4772,
Chitosan	ME1,	4199,	CG5889,
Chloramphenicol	CYP3A4,UGT1A4,UGT1A3,CLTB,	1576,54657,54659,1212,	CG2060,CG4772,CG4772,CG6948,
chlorophenyl-ethane	CYP3A4,	1576,	CG2060,
chlorophyllin	NFKB1,CCNB1,	4790,891,	CG11992,CG5940,
chlorophyllipt	RFC1,	5981,	CG1119,
chlorpromazine	CYP4F11,GSR,UGT1A4,UGT1A3,TRPA1,	57834,2936,54657,54659,8989,	CG2060,CG2151,CG4772,CG4772,CG5751,
Chlorpropham	FGFR3,	2261,	CG7223,
Chlorzoxazone	CYP4F3,CYP3A5,CYP3A4,	4051,1577,1576,	CG2060,CG2060,CG2060,
Cholestanol	CYP3A4,	1576,	CG2060,
CHOLINE	PLXNA2,CHDH,FGFR3,SLC5A7,	5362,55349,2261,60482,	CG11081,CG1152,CG9519,CG7223,CG7708,
Chonsurid	CA10,	56934,	CG9678,
chromophore	LPAR2,OPN4,SAG,	9170,94233,6295,	CG12796,CG4550,CG5711,
Chrysin	UGT1A1,UGT1A6,	54658,54578,	CG4772,CG4772,
chymostatin	CAPN2,CAPNS1,	824,826,	CG8107,CG8107,
CI1033	PSMD9,	5715,	CG9588,
cicaprost	CCNA2,	890,	CG5940,
cifostodine	SERPINB1,	1992,	CG8137,CG9453,CG9460,
ciglitazone	NFKB1,CD36,PSMD9,	4790,948,5715,	CG11992,CG7422,CG9588,
Cilazapril	PGC,	5225,	CG10872,
Cilomilast	PDE4B,	5142,	CG14940,
cilostazol	CYP3A4,	1576,	CG2060,
Cimetidine	CYP4F3,CYP3A5,CYP3A4,CYP3A7,	4051,1577,1576,1551,	CG2060,CG2060,CG2060,CG2060,
cinacalcet	LPAR2,LPAR3,CYP3A4,	9170,23566,1576,	CG12796,CG12796,CG2060,
cinitapride	CYP3A4,	1576,	CG2060,
cinnamic aldehyde	TRPA1,	8989,	CG5751,
cionin	SERPINB6,	5269,	CG8137,CG9453,CG9460,
Cipol N	PSMD12,NFKB1,FOXP	5718,4790,50943,	CG1100,CG11992,CG1

	3,DLG3,CYP3A5,CYP3A4,TXNRD1,UGT2B7,CCNB1,GPR177,DYNL1,PSIP1,SERPINC1,	1741,1577,1576,7296,7364,891,79971,8655,11168,462,	6899,CG1725,CG2060,CG2060,CG2151,CG4772,CG5940,CG6210,CG6998,CG7946,CG8137,
Ciprofloxacin	CYP3A4,	1576,	CG2060,
Ciprol	CYP4X1,UGT1A3,	260293,54659,	CG2060,CG4772,
cis-9, trans-11-conjugated linoleic acid	CD36,	948,	CG7422,
Cisapride	CYP3A4,	1576,	CG2060,
Citalopram	CYP3A4,	1576,	CG2060,
Citox	CYP3A4,	1576,	CG2060,
CITRULLINE	DYNLL1,FGFR3,	8655,2261,	CG6998,CG7223,
clebopride	FGFR3,	2261,	CG7223,
clevidipine	CYP3A4,	1576,	CG2060,
clobazam	CYP3A4,	1576,	CG2060,
Clodronic Acid	DDOST,	1650,	CG9022,
clofarabine	PAFAH1B1,	5048,	CG8440,
Clofibric Acid	NFKB1,CYP3A4,UGT1A3,	4790,1576,54659,	CG11992,CG2060,CG4772,
Clomipramine	CYP3A4,	1576,	CG2060,
Clonazepam	CYP3A5,CYP3A4,CYP4F3,TYMS,UGT1A4,UGT1A3,	1577,1576,4051,7298,54657,54659,	CG2060,CG2060,CG2060,CG3181,CG4772,CG4772,
Clonidine	S1PR1,TBXAS1,TYMS,	1901,6916,7298,	CG12796,CG2060,CG3181,
clopidogrel	CYP4F3,CYP3A4,CYP3A5,CDK9,ME1,SERPINC1,	4051,1576,1577,1025,4199,462,	CG2060,CG2060,CG2060,CG5179,CG5889,CG8137,
clotiazepam	CYP3A4,	1576,	CG2060,
Clozapine	SLC2A1,PSMD12,CYP3A4,CYP3A5,CYP4F3,GAD1,PSIP1,	6513,5718,1576,1577,4051,2571,11168,	CG1086,CG1100,CG2060,CG2060,CG2060,CG7811,CG7946,
clozapine N-oxide	CYP3A4,FMO3,	1576,2328,	CG2060,CG3006,
CNI 1493	DHPS,	1725,	CG8005,
Co 2-1970	GSTO1,DNALI1,	9446,7802,	CG6673,CG6971,
Coagulin	NFKB1,S1PR1,	4790,1901,	CG11992,CG12796,
Colchicine	PLXNB2,CADPS,CYP3A4,	23654,8618,1576,	CG11081,CG18026,CG2060,
compactin	CDK2,PSMD9,	1017,5715,	CG8203,CG9588,
CONT	SMN1,CYP3A4,	6606,1576,	CG16725,CG2060,
Cotinine	GSTT1,FMO1,UGT1A9,UGT1A1,UGT1A4,	2952,2326,54600,54658,54657,	CG30005,CG3006,CG4772,CG4772,CG4772,
Cotrim	CYP4F3,CYP3A5,	4051,1577,	CG2060,CG2060,
coumarin	CYP3A4,SERPINC1,	1576,462,	CG2060,CG8137,
CRA 024781	HDAC3,	8841,	CG2128,
CRA 026440	HDAC3,	8841,	CG2128,
Crestor	CYP3A4,	1576,	CG2060,
Crodacid	PSMD12,CD36,	5718,948,	CG1100,CG7422,
Crypt-2,2,2	COG6,	57511,	CG1968,
cryptdin 3	NFKB1,	4790,	CG11992,
cryptotanshinone	CYP3A4,	1576,	CG2060,
cryptoxanthin	TBXAS1,TYMS,	6916,7298,	CG2060,CG3181,
CUBE	NFKB1,	4790,	CG11992,
CVT 3146	ADORA2A,	135,	CG9753,

cyanidin 3-rutinoside	NFKB1,	4790,	CG11992,
cyanidin-3-glucoside	NFKB1,CCNB1,	4790,891,	CG11992,CG5940,
cyanoginosin-LA	PPP2CA,	5515,	CG7109,
Cyclandelate	SERPINC1,	462,	CG8137,
cyclohexyl carbamic acid 3'- carbamoylebiphenyl-3-yl ester	TRPA1,	8989,	CG5751,
cyclohexyl-methyl	CDK2,	1017,	CG8203,
cyclopamine	CDK2,PSMD9,	1017,5715,	CG8203,CG9588,
Cyclopentenone	CCNA2,	890,	CG5940,
cyclopiazonic acid	NFKB1,CYP3A4,	4790,1576,	CG11992,CG2060,
Cyproheptadine	UGT1A3,	54659,	CG4772,
Cyproterone Acetate	SERPINC1,	462,	CG8137,
cystathionine	ME1,	4199,	CG5889,
cysteamine	STK39,	27347,	CG7693,
cysteinyl-leukotriene	GPR177,	79971,	CG6210,
Cytarabine	NFKB1,DNAH5,CYP3A 4,TRPV1,PAFAH1B1,	4790,1767,1576,7 442,5048,	CG11992,CG17150,CG 2060,CG5842,CG8440 ,
cytochalasin B	SLC2A1,SLC2A4,SMN 1,DNAH5,CD36,	6513,6517,6606,1 767,948,	CG1086,CG1086,CG16 725,CG17150,CG7422 ,
Cytochalasin D	CADPS,CD36,PSIP1,	8618,948,11168,	CG18026,CG7422,CG7 946,
cytochalasin E	SLC2A1,	6513,	CG1086,
D 22888	PDE4A,	5141,	CG14940,
D 23129	KCNQ2,KCNQ4,KCNQ 3,	3785,9132,3786,	CG12915,CG12915,CG 12915,
DA 8159	PLXNB1,CYP3A5,CYP 3A4,	5364,1577,1576,	CG11081,CG2060,CG2 060,
Dacarbazine	CYP3A5,CYP4F3,	1577,4051,	CG2060,CG2060,
DADSO	NFKB1,CYP3A4,TRPA 1,TRPV1,	4790,1576,8989,7 442,	CG11992,CG2060,CG5 751,CG5842,
daidzein	NFKB1,UGT1A8,	4790,54576,	CG11992,CG4772,
danaproid	SERPINC1,	462,	CG8137,
Dapsone	CYP4F3,CYP3A5,CYP3 A4,	4051,1577,1576,	CG2060,CG2060,CG20 60,
Daral	PLXNA2,CYP4B1,CYP 3A4,TRPV6,KCNIP3,P SMD9,	5362,1580,1576,5 5503,30818,5715,	CG11081,CG2060,CG2 060,CG5842,CG5890, CG9588,
Darifenacin	CYP4F3,CYP3A5,	4051,1577,	CG2060,CG2060,
darunavir	CYP3A4,	1576,	CG2060,
dasatinib	CYP3A4,PSMD9,	1576,5715,	CG2060,CG9588,
Daunorubicin	NFKB1,UGT8,GPR177 ,PSIP1,	4790,7368,79971, 11168,	CG11992,CG4772,CG6 210,CG7946,
Dayfen	NFKB1,FOXP3,SERPIN B6,SERPINB4,ADORA 2A,	4790,50943,5269, 6318,135,	CG11992,CG16899,CG 8137,CG9453,CG9460 ,CG8137,CG9453,CG9 460,CG9753,
DBPC	UGT1A6,	54578,	CG4772,
DDB	UBE2L3,	7332,	CG5788,
DDE	PSMD9,	5715,	CG9588,
Debrisoquin	CYP3A4,	1576,	CG2060,
decursin	NFKB1,	4790,	CG11992,
Deethylamiodarone	CYP3A4,	1576,	CG2060,
deferiprone	UGT1A6,	54578,	CG4772,
Deferoxamine	SLC2A1,DPAGT1,CCN	6513,1798,890,54	CG1086,CG5287,CG59

	A2,POLD1,CDC2,CDK2,	24,983,1017,	40,CG5949,CG8203,C8203,
deguelin	NFKB1,	4790,	CG11992,
dehydroaripiprazole	CYP3A4,	1576,	CG2060,
Dehydroepiandrosterone Sulfate	CYP3A7,	1551,	CG2060,
dehydroxymethylepoxyquinomicin	NFKB1,	4790,	CG11992,
Delavirdine	CYP3A4,	1576,	CG2060,
delta8-THC	CNR1,CNR2,CADPS,TRPA1,POLD1,CDC2,	1268,1269,8618,8989,5424,983,	CG12796,CG12796,CG18026,CG5751,CG5949,CG8203,
Denagard	CYP3A4,	1576,	CG2060,
denbinobin	NFKB1,	4790,	CG11992,
denileukin diftitox	PSIP1,	11168,	CG7946,
denopamine	UGT2B7,	7364,	CG4772,
Depas	CYP3A4,	1576,	CG2060,
deramciclane	CYP3A4,	1576,	CG2060,
desethylchloroquine	CYP3A4,	1576,	CG2060,
desflurane	TRPV1,	7442,	CG5842,
desisobutyrylciclesonide	CYP3A4,	1576,	CG2060,
desmethylazelastine	CYP3A4,	1576,	CG2060,
Desmethyldeprenyl	CYP3A4,	1576,	CG2060,
Devazepide	CCKBR,CCKAR,	887,886,	CG6881,CG6881,
Dexfenfluramine	CD36,	948,	CG7422,
dexloxiglumide	CYP3A5,CYP4F3,CCKAR,	1577,4051,886,	CG2060,CG2060,CG6881,
Dextropropoxyphene	CYP3A4,	1576,	CG2060,
dFdC	NFKB1,LARP6,TXNRD1,TXNRD2,UBE2L3,GPR177,	4790,55323,7296,10587,7332,79971,	CG11992,CG17386,CG2151,CG2151,CG5788,CG6210,
DFMO	NFKB1,SLC25A21,CCNB1,CDK2,	4790,89874,891,1017,	CG11992,CG5254,CG5940,CG8203,
DHEA	SLC2A1,SLC2A4,NFKB1,FOXP3,CYP3A5,CYP4F3,CYP3A4,CYP3A7,	6513,6517,4790,50943,1577,4051,1576,1551,	CG1086,CG1086,CG11992,CG16899,CG2060,CG2060,CG2060,
DHLA	NFKB1,	4790,	CG11992,
di-(1-isoquinoliny)-di-(pyridyl-2')butane	CCNB1,	891,	CG5940,
Diaben	CYP3A4,	1576,	CG2060,
Diacomit	CYP4F3,CYP3A4,CYP3A5,	4051,1576,1577,	CG2060,CG2060,CG2060,
diadenosine tetraphosphate	CDC2,	983,	CG8203,
Dial	NFKB1,SERPINB3,PAFAH1B1,	4790,6317,5048,	CG11992,CG8137,CG9453,CG9460,CG8440,
Diamide	NFKB1,HNRNPA1,	4790,3178,	CG11992,CG9983,
DIAN	UGT1A6,	54578,	CG4772,
diarsenic trioxide	SLC2A1,NFKB1,CCNA2,CCNB1,POLD1,GPR177,GSTO1,FGFR4,CDK2,CDC2,PSMD9,	6513,4790,890,891,5424,79971,9446,2264,1017,983,5715,	CG1086,CG11992,CG5940,CG5940,CG5949,CG6210,CG6673,CG7223,CG8203,CG8203,C89588,
Dibenzanthracene	CYP3A5,CYP3A7,	1577,1551,	CG2060,CG2060,
Dicid	CYP4F3,CYP3A5,	4051,1577,	CG2060,CG2060,
Diclofenac	CYP3A4,UGT2B7,UGT	1576,7364,54578,	CG2060,CG4772,CG47

	1A6,		72,
Dicyclohexylcarbodiimide	VDAC1,	7416,	CG17137,
diethyl maleate	CD36,	948,	CG7422,
Diethyl-benzoquinone-imine	CYP3A4,	1576,	CG2060,
Digicor	NFKB1,	4790,	CG11992,
Digitin	VDAC1,	7416,	CG17137,
Digoxin	CYP3A4,	1576,	CG2060,
Dihydroqinghaosu	UGT1A9,UGT2B7,	54600,7364,	CG4772,CG4772,
Dihydroxycholecalciferols	FGR,	2268,	CG7873,
diisopropyl fluorophosphate	ECD,	11319,	CG5714,
dillapiol	CYP3A4,	1576,	CG2060,
Diltiazem	CYP3A5,CYP3A4,CYP4F3,	1577,1576,4051,	CG2060,CG2060,CG2060,
Dimethadione	CYP3A4,	1576,	CG2060,
dimethyl fumarate	NFKB1,	4790,	CG11992,
Dimethyl Sulfoxide	PSMD12,PSIP1,	5718,11168,	CG1100,CG7946,
dimethyl-hydrazide	PDE4A,	5141,	CG14940,
dimethylamino-purine	POLD1,CDC2,	5424,983,	CG5949,CG8203,
dimuonium	LPAR2,	9170,	CG12796,
dinitrophenol	SLC2A4,SLC2A1,	6517,6513,	CG1086,CG1086,
Dinoprostone	PSMD12,NFKB1,LPAR2,PDE4A,CADPS,ONECUT2,TRPV1,CCKBR,ANK1,	5718,4790,9170,5141,8618,9480,7442,887,286,	CG1100,CG11992,CG12796,CG14940,CG18026,CG1922,CG5842,CG6881,CG7462,
dioxirane	TBXAS1,TYMS,	6916,7298,	CG2060,CG3181,
Dipalmitoyl	LPAR2,PDE4A,	9170,5141,	CG12796,CG14940,
diphenylalanine	UGT1A1,	54658,	CG4772,
Diphenylamine	UGT1A3,	54659,	CG4772,
diphenyleneiodonium	NFKB1,MRPL41,TXNRD1,FGR,	4790,64975,7296,2268,	CG11992,CG12954,CG2151,CG7873,
Dipyridamole	SLC2A1,SLC2A4,NFKB1,DLD,	6513,6517,4790,1738,	CG1086,CG1086,CG11992,CG7430,
Dipyrone	CYP4F3,CYP3A4,CYP3A5,	4051,1576,1577,	CG2060,CG2060,CG2060,
discodermolide	CYP3A4,	1576,	CG2060,
Diterpenes	NFKB1,	4790,	CG11992,
Dithionite	CYP3A4,	1576,	CG2060,
diuretic	TRPV5,FGFR3,	56302,2261,	CG5842,CG7223,
Diuron	CYP3A4,	1576,	CG2060,
divinyl benzene	SERPINC1,	462,	CG8137,
dl-lpr	IGF2R,PDE4A,MFF,FGFR3,	3482,5141,56947,2261,	CG14255,CG14940,CG30404,CG7223,
DMGG	SLC2A1,SLC2A4,CYP3A4,SERPINC1,	6513,6517,1576,462,	CG1086,CG1086,CG2060,CG8137,
DMPX	ADORA2A,	135,	CG9753,
DMSO	CYP3A7,CYP3A4,UBE2L3,CD36,	1551,1576,7332,948,	CG2060,CG2060,CG5788,CG7422,
Dobutamine	UGT1A3,UGT1A4,	54659,54657,	CG4772,CG4772,
Doca	UGT2B7,	7364,	CG4772,
Doconexent	NFKB1,UGT1A4,UGT1A3,	4790,54657,54659,	CG11992,CG4772,CG4772,
dodecyl-phosphocholine	ECD,	11319,	CG5714,
dodecyloctaethyleneglycol monoether	SLC2A1,	6513,	CG1086,
Domperidone	CYP3A4,	1576,	CG2060,

DOTA	PLXNB2,	23654,	CG11081,
Doxazosin	ANAPC10,NFKB1,CCN A2,	10393,4790,890,	CG11419,CG11992,CG 5940,
Doxorubicin	NFKB1,LARP6,TXNRD 1,TXNRD2,GSR,TYMS, OPN4,SMAD7,UBE2L3 ,CCNA2,CCNB1,POLD 1,AURKB,DLDCDC2,C DK2,PSMD9,	4790,55323,7296, 10587,2936,7298, 94233,4092,7332, 890,891,5424,921 2,1738,983,1017,5 715,	CG11992,CG17386,CG 2151,CG2151,CG2151 ,CG3181,CG4550,CG5 201,CG5788,CG5940, CG5940,CG5949,CG66 20,CG7430,CG8203,C G8203,CG9588,
Doxycycline	NFKB1,CYP3A4,PRDX 6,DPAGT1,	4790,1576,9588,1 798,	CG11992,CG2060,CG3 083,CG5287,
DPC 681	CYP3A4,	1576,	CG2060,
DPCPX	ADORA1,	134,	CG9753,
Droxia	CYP3A4,SMAD7,POLD 1,CDC2,	1576,4092,5424,9 83,	CG2060,CG5201,CG59 49,CG8203,
DTMC	DHX16,	8449,	CG10689,CG1375,
dulcin	UGT1A9,	54600,	CG4772,
Durapatite	CD36,ANK1,CSNK2B,	948,286,1460,	CG7422,CG7462,CG89 14,
DX 9065a	SERPINC1,	462,	CG8137,
Dxms	SLC2A5,PSMD12,NFK B1,BRD8,PDE4B,PDE 4A,SMN1,CYP4A11,C YP4Z1,CYP4X1,CYP3A 4,CYP3A5,CYP3A7,UG T1A1,NAP1L1,TRPV6, CCNB1,CD36,PSIP1,S LC46A1,SERPINC1,SE RPINB3,CDK2,CDC2,P SMD9,	6518,5718,4790,1 0902,5142,5141,6 606,1579,199974, 260293,1576,1577 ,1551,54658,4673, 55503,891,948,11 168,113235,462,6 317,1017,983,571 5,	CG1086,CG1100,CG11 992,CG14514,CG1494 0,CG14940,CG16725, CG2060,CG2060,CG20 60,CG2060,CG2060,C G2060,CG4772,CG533 0,CG5842,CG5940,CG 7422,CG7946,CG8008 ,CG8137,CG8137,CG9 453,CG9460,CG8203, CG8203,CG9588,
Dynatra	CNR1,LPAR2,SMN1,T BXAS1,TYMS,SAG,RA SA3,CCKBR,FGFR3,G AD2,FYN,SERPINB1,A DORA2A,ADORA1,	1268,9170,6606,6 916,7298,6295,22 821,887,2261,257 2,2534,1992,135,1 34,	CG12796,CG12796,CG 16725,CG2060,CG318 1,CG5711,CG6721,CG 6881,CG7223,CG7811 ,CG7873,CG8137,CG9 453,CG9460,CG9753, CG9753,
E 10	NFKB1,	4790,	CG11992,
E 3330	NFKB1,	4790,	CG11992,
E-MIX 80	CYP4F2,CYP3A4,	8529,1576,	CG2060,CG2060,
E.O.	GSTT1,	2952,	CG30005,
EACA	SFRS1,SERPINC1,	6426,462,	CG6987,CG8137,
ebastine	CYP4F12,CYP4F3,	66002,4051,	CG2060,CG2060,
ebrotidine	CYP3A4,CYP3A5,	1576,1577,	CG2060,CG2060,
Echinomycin	NFKB1,	4790,	CG11992,
Econ	NFKB1,CYP4F2,CYP3A 4,CCRN4L,UGT1A1,C D36,FYN,	4790,8529,1576,2 5819,54658,948,2 534,	CG11992,CG2060,CG2 060,CG31299,CG4772 ,CG7422,CG7873,
econazole	CYP3A4,CDK2,	1576,1017,	CG2060,CG8203,
ecteinasidin 743	CYP4F3,CYP3A4,CYP3 A5,	4051,1576,1577,	CG2060,CG2060,CG20 60,
Edetic Acid	SLC2A1,PLXNB2,CELS R1,LYRM4,ME2,POLD 1,CAPN2,CAPNS1,CD C2,	6513,23654,9620, 57128,4200,5424, 824,826,983,	CG1086,CG11081,CG1 1895,CG3717,CG5889 ,CG5949,CG8107,CG8 107,CG8203,

Edex	DYNC1H1,ATP1B1,	1778,481,	CG17150,CG8663,
efavirenz	CYP4F3,CYP3A5,CYP3A4,	4051,1577,1576,	CG2060,CG2060,CG2060,
EGCg	NFKB1,CYP3A4,CDK2,PSMD9,	4790,1576,1017,5715,	CG11992,CG2060,CG8203,CG9588,
EGTA	CD36,YES1,CAPN2,CAPNS1,	948,7525,824,826,	CG7422,CG7873,CG8107,CG8107,
eletriptan	CYP3A4,	1576,	CG2060,
Elicide	TRPV1,	7442,	CG5842,
Empecid	THOC4,CYP3A5,CYP3A4,CYP3A7,TRPA1,TRPV1,	10189,1577,1576,1551,8989,7442,	CG1101,CG2060,CG2060,CG2060,CG5751,CG5842,
Enalapril	TXNRD2,TXNRD1,	10587,7296,	CG2151,CG2151,
Endocannabinoids	NFKB1,CNR2,CNR1,TRPV1,	4790,1269,1268,7442,	CG11992,CG12796,CG12796,CG5842,
endomorphin 1	OPN4,	94233,	CG4550,
Enediynes	CCNA2,	890,	CG5940,
enflurane	DYNC1H1,TRPV1,	1778,7442,	CG17150,CG5842,
enone	ME3,	10873,	CG5889,
Enoximone	PDE4A,	5141,	CG14940,
entacapone	UGT1A9,	54600,	CG4772,
Entex	FMO3,	2328,	CG3006,
enzastaurin	TYMS,UBE2L3,	7298,7332,	CG3181,CG5788,
EOS	S1PR1,	1901,	CG12796,
EPC-K(1)	NFKB1,	4790,	CG11992,
EPEG	NFKB1,CYP3A5,CYP3A4,TFAM,UGT1A1,CCNA2,CCNB1,POLD1,GPR177,SERPINB3,CDK2,CDC2,MLL,	4790,1577,1576,7019,54658,890,891,5424,79971,6317,1017,983,4297,	CG11992,CG2060,CG2060,CG4217,CG4772,CG5940,CG5940,CG5949,CG6210,CG8137,CG9453,CG9460,CG8203,CG8203,CG8651,
EPIB	CYP4A11,CD36,	1579,948,	CG2060,CG7422,
epibatidine	FGFR3,	2261,	CG7223,
Epicar	SPAST,SERPINB3,	6683,6317,	CG5977,CG8137,CG9453,CG9460,
Epoprostenol	NFKB1,TAOK2,DYNC1H1,CYP3A4,SERPINC1,	4790,9344,1778,1576,462,	CG11992,CG14217,CG17150,CG2060,CG8137,
epoxybergamottin	CYP3A4,	1576,	CG2060,
epsilon-viniferin	CYP4F3,CYP3A5,	4051,1577,	CG2060,CG2060,
erastin	VDAC2,	7417,	CG17137,
ergosterol-5,8-peroxide	NFKB1,	4790,	CG11992,
Eril	SMN1,	6606,	CG16725,
erlotinib	CYP3A4,TYMS,UBE2L3,PSMD9,	1576,7298,7332,5715,	CG2060,CG3181,CG5788,CG9588,
erucin	TXNRD1,	7296,	CG2151,
Eryc	CYP4F11,CYP3A4,CYP3A5,SMAD7,	57834,1576,1577,4092,	CG2060,CG2060,CG2060,CG5201,
erythritol anhydride	GSTT1,	2952,	CG30005,
esterbut-3	TYMS,	7298,	CG3181,
Estriol	CYP3A7,	1551,	CG2060,
ET18-Ome	NFKB1,	4790,	CG11992,
Etfc cpd	CYP3A4,	1576,	CG2060,
Ethacrynic Acid	NFKB1,GPR177,	4790,79971,	CG11992,CG6210,
Ethan	CELSR1,ME2,ME1,	9620,4200,4199,	CG11895,CG5889,CG5889,

Ethinyl-oestradiol	CYP3A4,	1576,	CG2060,
Ethylmorphine	CYP4F11,OPN4,	57834,94233,	CG2060,CG4550,
Ethynodiol Diacetate	SERPINC1,	462,	CG8137,
Eticol	SH3D19,	152503,	CG7129,
Etidronic Acid	TFAP4,	7023,	CG7664,
Etodolac	UGT1A9,CCNA2,CCN B1,POLD1,SERPINB3,CDK2,CDC2,	54600,890,891,5424,6317,1017,983,	CG4772,CG5940,CG5940,CG5949,CG8137,C G9453,CG9460,CG8203,CG8203,
Etoposide	NFKB1,CCNA2,PSIP1,CDC2,CDK2,	4790,890,11168,983,1017,	CG11992,CG5940,CG7946,CG8203,CG8203,
etoricoxib	CYP3A4,	1576,	CG2060,
etravirine	CYP3A4,	1576,	CG2060,
Eufor	CYP4F3,CYP3A4,CYP3A5,PSMD9,	4051,1576,1577,5715,	CG2060,CG2060,CG2060,CG9588,
Eugenol	UBE2L3,TRPV3,	7332,162514,	CG5788,CG5842,
eupatilin	UGT1A3,UGT1A4,CCN B1,POLD1,CDC2,CDK2,	54659,54657,891,5424,983,1017,	CG4772,CG4772,CG5940,CG5949,CG8203,C G8203,
everolimus	ACAT1,CYP3A4,	38,1576,	CG10932,CG2060,
Evex	SLC2A1,SLC2A4,CHD H,NFKB1,GABARAPL1,CNR1,IGF2R,SMN1,F OXP1,CYP3A5,CYP4F3,TBXAS1,CYP3A4,PR DX6,TYMS,DLL4,OPN4,WNT9A,WNT9B,UG T1A4,UGT2B17,UGT2B15,UGT1A1,UGT1A3,UGT1A10,UGT1A9,U BE2L3,TRPV6,ME3,CC NA2,CCNB1,POLD1,A URKB,AURKA,FGFR1, SCARB2,CD36,YES1,S ER-PINC1,SERPINB3,CDK2,CDC2,SMARCA1,DH X9,PSMD9,HNRNPA1,	6513,6517,55349,4790,23710,1268,3482,6606,27086,1577,4051,6916,1576,9588,7298,54567,94233,7483,7484,54657,7367,7366,54658,54659,54575,54600,7332,55503,10873,890,891,5424,9212,6790,2260,950,948,7525,462,6317,1017,983,6594,1660,5715,3178,	CG1086,CG1086,CG1152,CG9519,CG11992,CG12334,CG12796,CG14255,CG16725,CG16899,CG2060,CG2060,CG2060,CG2060,CG3083,CG3181,CG3619,C G4550,CG4698,CG4698,CG4772,CG4772,CG4772,CG4772,CG4772,CG5788,CG5842,CG5889,CG5940,CG5940,CG5949,CG6620,CG6620,C G7223,CG7422,CG7422,CG7873,CG8137,CG8137,CG9453,CG9460,CG8203,CG8203,CG8625,CG9323,CG9588,CG9983,
Evodin	CYP3A4,	1576,	CG2060,
exenatide	PDHX,	8050,	CG5261,
Exosurf	NFKB1,	4790,	CG11992,
Expectorants	NFKB1,	4790,	CG11992,
Extina	CYP3A4,CYP4F3,CYP4F2,CYP3A5,UGT1A3,UGT1A1,UGT1A9,UGT1A4,	1576,4051,8529,1577,54659,54658,54600,54657,	CG2060,CG2060,CG2060,CG2060,CG4772,C G4772,CG4772,CG4772,
Ezerin	FGFR3,	2261,	CG7223,
ezetimib	CD36,	948,	CG7422,
Facet	FOXP3,	50943,	CG16899,
Facid	RFC1,CNR2,TYMS,FGFR4,SLC46A1,KHSRP,	5981,1269,7298,2264,113235,8570,	CG1119,CG12796,CG3181,CG7223,CG8008,CG8912,
facile	MRPL13,TYMS,	28998,7298,	CG10603,CG3181,
Factor IIa	SERPINC1,	462,	CG8137,
FAMP	NFKB1,SERPINB6,PS	4790,5269,5715,	CG11992,CG8137,CG9

	MD9,		453,CG9460,CG9588,
Fanchinine	CYP3A4,TYMS,SMAD7,UBE2L3,	1576,7298,4092,7332,	CG2060,CG3181,CG5201,CG5788,
Farnesyl-PP	TXNRD2,TXNRD1,	10587,7296,	CG2151,CG2151,
farnesylthiosalicylic acid	UBE2L3,	7332,	CG5788,
febuxostat	CYP4F3,CYP3A5,UGT1A4,UGT1A3,	4051,1577,54657,54659,	CG2060,CG2060,CG4772,CG4772,
felbamate	CYP3A4,	1576,	CG2060,
Felodipine	CYP3A4,CYP3A5,	1576,1577,	CG2060,CG2060,
Fenfluramine	CYP4F3,CYP3A5,	4051,1577,	CG2060,CG2060,
fenitrothion	TBXAS1,TYMS,	6916,7298,	CG2060,CG3181,
fenofibric acid	CYP4A11,CYP3A4,	1579,1576,	CG2060,CG2060,
Fenretinide	UBE2L3,	7332,	CG5788,
Fentanyl	PLXNB1,NFKB1,CYP3A5,CYP3A4,	5364,4790,1577,1576,	CG11081,CG11992,CG2060,CG2060,
ferulic acid	CCNB1,POLD1,CDC2,	891,5424,983,	CG5940,CG5949,CG8203,
Filipin	CD36,YES1,	948,7525,	CG7422,CG7873,
fingolimod	S1PR2,CNR1,S1PR5,S1PR1,CDK2,	9294,1268,53637,1901,1017,	CG12796,CG12796,CG12796,CG12796,CG8203,
fipronil	CYP3A4,	1576,	CG2060,
fisetin	NFKB1,CD36,	4790,948,	CG11992,CG7422,
Flanin F	GSR,	2936,	CG2151,
Flavon	CYP3A5,CYP3A4,DYNLL1,CDK2,	1577,1576,8655,1017,	CG2060,CG2060,CG6998,CG8203,
flavonols	CCNB1,CD36,	891,948,	CG5940,CG7422,
flavopiridol	NFKB1,UGT1A1,CDK9,UBE2L3,CCNB1,CDC2,CDK2,CDK5,	4790,54658,1025,7332,891,983,1017,1020,	CG11992,CG4772,CG5179,CG5788,CG5940,CG8203,CG8203,CG8203,
Flavyl	KCNQ3,KCNQ2,CYP3A5,CYP4F3,CYP3A4,	3786,3785,1577,4051,1576,	CG12915,CG12915,CG2060,CG2060,CG2060,
FLCZ	CYP3A4,TXNRD1,UGT2B7,	1576,7296,7364,	CG2060,CG2151,CG4772,
Flecainide	KCNIP2,	30819,	CG5890,
Floxacillin	CYP3A4,	1576,	CG2060,
flufenamic acid	NFKB1,TRPV1,	4790,7442,	CG11992,CG5842,
Flunitrazepam	CYP3A5,UGT1A3,UGT1A1,UGT2B7,	1577,54659,54658,7364,	CG2060,CG4772,CG4772,CG4772,
fluorexon	GPR177,	79971,	CG6210,
Fluorouracil	SLC2A1,NFKB1,TAOK2,LARP6,CYP3A4,TBXAS1,TYMS,DTYMK,UBE2L3,CCNA2,CCNB2,SERPINB6,	6513,4790,9344,55323,1576,6916,7298,1841,7332,890,9133,5269,	CG1086,CG11992,CG14217,CG17386,CG2060,CG2060,CG3181,CG5757,CG5788,CG5940,CG5940,CG8137,CG9453,CG9460,
fluvoxamine	CYP3A4,	1576,	CG2060,
FOLATE-ANALOG	TYMS,	7298,	CG3181,
fondaparinux	SERPINC1,	462,	CG8137,
Fonofos	CYP3A4,	1576,	CG2060,
Format	CADPS,ELAVL2,	8618,1993,	CG18026,CG4396,
Formyl-Tetrahydrofolate	TYMS,	7298,	CG3181,
Forskolin	SLC2A5,SLC2A4,SLC2A2,SLC2A1,LYZ,NFKB	6518,6517,6514,6513,4069,4790,19	CG1086,CG1086,CG1086,CG1086,CG1180,C

	1,S1PR1,PDE4A,CYP3A4,TRPV1,FGFR4,TFA P4,ATP1B1,	01,5141,1576,744 2,2264,7023,481,	G11992,CG12796,CG14940,CG2060,CG5842,CG7223,CG7664,CG8663,
fosamprenavir	CYP3A4,	1576,	CG2060,
Foscarnet	NFKB1,	4790,	CG11992,
FR 120480	CCKAR,	886,	CG6881,
FR 235222	NFKB1,	4790,	CG11992,
fraxin	API5,	8539,	CG6582,
FTY 720P	S1PR1,	1901,	CG12796,
fucoidan	NFKB1,SERPINC1,	4790,462,	CG11992,CG8137,
fulvestrant	UGT2B15,UGT1A8,UGT1A10,CD36,	7366,54576,54575,948,	CG4772,CG4772,CG4772,CG7422,
fumagillin	CYP4V2,	285440,	CG2060,
Fura-2	FGFR3,	2261,	CG7223,
furafylline	CYP3A4,	1576,	CG2060,
Furamon	FGFR3,	2261,	CG7223,
Furylfuramide	THOC4,TXNRD2,	10189,10587,	CG1101,CG2151,
Gabexate	SERPINC1,	462,	CG8137,
gadolinium	CELSR1,ME2,ME3,	9620,4200,10873,	CG11895,CG5889,CG5889,
Gadolinium DTPA	TXNRD2,TXNRD1,CD36,	10587,7296,948,	CG2151,CG2151,CG7422,
galactocerebroside	UGT8,	7368,	CG4772,
galactomannan	CSNK2B,	1460,	CG8914,
galangin	CDC2,	983,	CG8203,
galaturonate	CYP4F3,CYP3A5,UGT1A3,UGT1A4,UGT1A10,	4051,1577,54659,54657,54575,	CG2060,CG2060,CG4772,CG4772,CG4772,
gallic acid	POLD1,CDC2,	5424,983,	CG5949,CG8203,
Gallogen	CDK2,	1017,	CG8203,
gambierol	TRPV1,	7442,	CG5842,
Gambogic acid	NFKB1,POLD1,CDC2,	4790,5424,983,	CG11992,CG5949,CG8203,
gamma-butyric-acid	KCNIP3,	30818,	CG5890,
Ganciclovir	PDHX,	8050,	CG5261,
gastrin 17	NFKB1,CCKBR,	4790,887,	CG11992,CG6881,
gatifloxacin	NFKB1,	4790,	CG11992,
gefitinib	SERPINB3,PSMD9,	6317,5715,	CG8137,CG9453,CG9460,CG9588,
Geldanamycin	NFKB1,CNR2,CDK9,CNBB1,POLD1,CDK2,CDC2,FAM162A,	4790,1269,1025,891,5424,1017,983,26355,	CG11992,CG12796,CG5179,CG5940,CG5949,CG8203,CG8203,CG9231,
Gemfibrozil	CYP3A4,UGT2B7,	1576,7364,	CG2060,CG4772,
gemtuzumab	NOMO1,	23420,	CG1371,
Gentamicins	UGT8,FGFR3,	7368,2261,	CG4772,CG7223,
gepirone	CYP3A4,	1576,	CG2060,
geraniol	CYP3A5,	1577,	CG2060,
geranylcoumarin	CYP3A4,	1576,	CG2060,
Gestodene	CYP3A4,	1576,	CG2060,
GF 120918	CYP3A4,	1576,	CG2060,
GGTI 298	CDK2,PSMD9,	1017,5715,	CG8203,CG9588,
GI 129471	PSMD12,	5718,	CG1100,
gingerol	NFKB1,CCNA2,	4790,890,	CG11992,CG5940,

ginsenoside Rd	CYP3A4,	1576,	CG2060,
ginsenoside Rf	CYP3A4,	1576,	CG2060,
ginsenoside Rg1	CDK2,	1017,	CG8203,
ginsenoside Rh2	CDK2,	1017,	CG8203,
Ginsenosides	NFKB1,FGFR4,	4790,2264,	CG11992,CG7223,
GLCa	SERPINC1,DHX9,	462,1660,	CG8137,CG9323,
Gliclazide	SLC2A4,CD36,	6517,948,	CG1086,CG7422,
Glumin	THOC4,PQBP1,FOXP2 ,PDHX,	10189,10084,9398 6,8050,	CG1101,CG11820,CG1 6899,CG5261,
Glyoxal	TRPV6,	55503,	CG5842,
Gnidimacrin	CDK2,	1017,	CG8203,
GnRH	LPAR2,SMAD7,FGFR1 ,PSIP1,	9170,4092,2260,1 1168,	CG12796,CG5201,CG7 223,CG7946,
Go 6976	NFKB1,	4790,	CG11992,
gossypol	TXNRD1,ME2,ME1,ME 3,	7296,4200,4199,1 0873,	CG2151,CG5889,CG58 89,CG5889,
GR 79236X	ADORA1,	134,	CG9753,
gramicidin S	HDHD1A,	8226,	CG5565,
Granisetron	CYP3A4,	1576,	CG2060,
Gravistat	SERPINC1,	462,	CG8137,
Grofo	CYP3A5,CYP3A4,CYP4 F3,	1577,1576,4051,	CG2060,CG2060,CG20 60,
Guggulsterone	NFKB1,	4790,	CG11992,
GW 4064	UGT2B15,	7366,	CG4772,
GW 501516	NFKB1,	4790,	CG11992,
H 89	CYP3A4,	1576,	CG2060,
Halan	PLXNB1,CYP4F3,CYP3 A4,CYP3A5,	5364,4051,1576,1 577,	CG11081,CG2060,CG2 060,CG2060,
halofuginone	RPL10,SMAD7,	6134,4092,	CG17521,CG5201,
harmine	CCNA2,CDK5,CDC2,C DK2,	890,1020,983,101 7,	CG5940,CG8203,CG82 03,CG8203,
Harzol	CCNB1,POLD1,CDC2,	891,5424,983,	CG5940,CG5949,CG82 03,
hassium	CCNA2,FGFR2,ANK1, CDC2,	890,2263,286,983,	CG5940,CG7223,CG74 62,CG8203,
HDMTX	RFC1,NFKB1,TXNRD2 ,TXNRD1,TYMS,SLC4 6A1,SERPINC1,	5981,4790,10587, 7296,7298,113235 ,462,	CG1119,CG11992,CG2 151,CG2151,CG3181, CG8008,CG8137,
Hecogenin	UGT1A4,	54657,	CG4772,
Hectorol	CYP3A4,	1576,	CG2060,
Heet	CYP4F3,CYP3A5,	4051,1577,	CG2060,CG2060,
helenalin	NFKB1,	4790,	CG11992,
Hemicholinium 3	FGFR3,SLC5A7,	2261,60482,	CG7223,CG7708,
herbimycin	NFKB1,PSMD9,	4790,5715,	CG11992,CG9588,
hesperadin	AURKB,	9212,	CG6620,
HESPERETIN	CDK2,	1017,	CG8203,
Hexadimethrine	SERPINC1,	462,	CG8137,
hexarelin	CD36,	948,	CG7422,
Hgln	CCKBR,	887,	CG6881,
himbacine	FGFR3,	2261,	CG7223,
Hk	SLC2A4,VDAC1,EXOS C1,	6517,7416,51013,	CG1086,CG17137,CG6 249,
Hocus	SLC26A6,NFKB1,S1P R3,CYP3A7,CYP3A4,C CRN4L,UGT1A4,UGT1	65010,4790,1903, 1551,1576,25819, 54657,54659,5465	CG11895,CG11992,CG 12796,CG2060,CG206 0,CG31299,CG4772,C

	A3,UGT1A1,UGT2B7,TRPV1,FGFR3,SERPINC1,	8,7364,7442,2261,462,	G4772,CG4772,CG4772,CG5842,CG7223,CG8137,
HOE 33342	UBE2L3,	7332,	CG5788,
honokiol	UBE2L3,	7332,	CG5788,
Horner	ODZ1,	10178,	CG5723,
HS 1200	CCNA2,CDK2,	890,1017,	CG5940,CG8203,
HU 211	CNR1,CNR2,TRPV1,	1268,1269,7442,	CG12796,CG12796,CG5842,
HyateC	LMAN1,	3998,	CG6822,
Hydoxin	DPAGT1,SERPINC1,	1798,462,	CG5287,CG8137,
hydride	ME1,ME2,ME3,	4199,4200,10873,	CG5889,CG5889,CG5889,
Hydromorphone	CYP3A4,	1576,	CG2060,
Hydroxychloroquine	UBE2L3,	7332,	CG5788,
hydroxycotinine	UGT1A4,	54657,	CG4772,
hydroxylamine	PLXNB2,SLC25A21,	23654,89874,	CG11081,CG5254,
Hydroxytryptophol	UGT1A6,	54578,	CG4772,
Hyhorin	SERPINC1,	462,	CG8137,
Hypaque	CLTA,	1211,	CG6948,
hyperforin	CYP3A4,	1576,	CG2060,
hypericin	NFKB1,	4790,	CG11992,
Hypericum-perforatum	CYP3A4,	1576,	CG2060,
hypochlorous acid	NFKB1,ATP1B1,	4790,481,	CG11992,CG8663,
iberin	TXNRD1,UGT1A1,	7296,54658,	CG2151,CG4772,
IBMX	PDE1B,PDE1C,PDE4A,	5153,5137,5141,	CG14940,CG14940,CG14940,
ibopamine	SMARCA1,	6594,	CG8625,
ibudilast	PDE4A,	5141,	CG14940,
IC 831423	SERPINC1,	462,	CG8137,
icariin	PDE4A,	5141,	CG14940,
icaritin	FGFR4,	2264,	CG7223,
icilin	TRPA1,TRPV1,	8989,7442,	CG5751,CG5842,
ICRF 193	NFKB1,	4790,	CG11992,
IDS 23	NFKB1,	4790,	CG11992,
Ifosfamide	CYP4F3,CYP3A4,CYP3A5,	4051,1576,1577,	CG2060,CG2060,CG2060,
Ikarugamycin	SFRS1,	6426,	CG6987,
ilimaquinone	NFKB1,	4790,	CG11992,
Iloprost	DYNC1H1,RBM6,	1778,10180,	CG17150,CG4887,
Imadyl	PSIP1,	11168,	CG7946,
imatinib	FOXP3,CYP3A4,FZR1,CCNA2,POLD1,FGFR4,CDC2,CDK5,CDK2,PSMD9,	50943,1576,51343,890,5424,2264,983,1020,1017,5715,	CG16899,CG2060,CG3000,CG5940,CG5949,CG7223,CG8203,CG8203,CG8203,CG9588,
imidafenacin	CYP3A4,	1576,	CG2060,
imidazo-pyridine	CYP3A4,	1576,	CG2060,
imidazolidin-2-one	PDE4A,	5141,	CG14940,
imidazolidin-one	PDE4A,	5141,	CG14940,
imidazolidine	TXNRD2,TXNRD1,	10587,7296,	CG2151,CG2151,
Imidazoline	NFKB1,ADORA1,	4790,134,	CG11992,CG9753,
imidazolyl-disulfide	TXNRD1,	7296,	CG2151,
Imipenem	VDAC1,	7416,	CG17137,
Imizin	CYP4F11,CYP3A4,UGT1A4,	57834,1576,54657,	CG2060,CG2060,CG4772,

Immulina	NFKB1,	4790,	CG11992,
Immunoferon	NFKB1,	4790,	CG11992,
Impulsin	CNR1,	1268,	CG12796,
Imrecoxib	CYP3A4,	1576,	CG2060,
Imutex	CYP4F3,CYP3A5,CYP3A7,	4051,1577,1551,	CG2060,CG2060,CG2060,
Indinavir	SLC2A4,CYP3A4,CYP4F3,CYP3A7,CYP3A5,UGT1A1,GPR177,	6517,1576,4051,1551,1577,54658,79971,	CG1086,CG2060,CG2060,CG2060,CG2060,CG4772,CG6210,
indiplon	CYP3A4,CYP3A5,	1576,1577,	CG2060,CG2060,
indirubin	NFKB1,CDK2,CDC2,CDK5,	4790,1017,983,1020,	CG11992,CG8203,CG8203,CG8203,
indole-3-acetic acid	GAD2,GAD1,	2572,2571,	CG7811,CG7811,
indole-3-methanol	NFKB1,	4790,	CG11992,
indolin-2-one	CCKBR,	887,	CG6881,
indolin-one	CDK2,	1017,	CG8203,
infiximab	SLC2A4,PSMD12,NFKB1,FOXP3,ELAVL1,	6517,5718,4790,50943,1994,	CG1086,CG1100,CG11992,CG16899,CG4396,
inhibin B	SMAD7,	4092,	CG5201,
INOmax	PLXNB2,NFKB1,LPAR2,DNAH5,CYP4F3,CYP3A5,CYP3A4,TXNRD1,TRPV1,DYNLL1,FGFR3,FGFR1,GAD2,SERPINB3,	23654,4790,9170,1767,4051,1577,1576,7296,7442,8655,2261,2260,2572,6317,	CG11081,CG11992,CG12796,CG17150,CG2060,CG2060,CG2060,CG2151,CG5842,CG6998,CG7223,CG7223,CG7811,CG8137,CG9453,CG9460,
inositol-1,3,4,5-tetrakisphosphate	RASA3,	22821,	CG6721,
inulin	PSIP1,	11168,	CG7946,
Iodoacetamide	TRPA1,	8989,	CG5751,
iodomethane	CHD2,	1106,	CG3733,
iodoresiniferatoxin	TRPV1,	7442,	CG5842,
Ionomycin	NFKB1,FGFR3,CAPNS1,	4790,2261,826,	CG11992,CG7223,CG8107,
ionophore	NFKB1,DYNLL1,FGFR4,YES1,	4790,8655,2264,7525,	CG11992,CG6998,CG7223,CG7873,
Iopanoic Acid	PSMD9,	5715,	CG9588,
Iophendylate	TXNRD2,TXNRD1,	10587,7296,	CG2151,CG2151,
IPADE	CDK2,	1017,	CG8203,
IPOMEANOL	CYP4F3,CYP4B1,CYP3A4,CYP3A5,	4051,1580,1576,1577,	CG2060,CG2060,CG2060,CG2060,
Iressa	CYP3A4,UBE2L3,SPAG9,PSMD9,	1576,7332,9043,5715,	CG2060,CG5788,CG8110,CG9588,
irinotecan	NFKB1,CYP3A4,TYMS,UGT1A7,UGT1A1,UGT1A4,UGT1A9,UGT1A3,CDK2,	4790,1576,7298,54577,54658,54657,54600,54659,983,	CG11992,CG2060,CG3181,CG4772,CG4772,CG4772,CG4772,CG8203,
irisolidone	NFKB1,	4790,	CG11992,
Isatin	CNR2,	1269,	CG12796,
isaxonine	CYP4F3,CYP3A5,	4051,1577,	CG2060,CG2060,
isoamylol	CYP3A4,	1576,	CG2060,
isobutyl-methyl-Xanthine	CAMK2B,	816,	CG18069,
Isodonol	NFKB1,	4790,	CG11992,
isoflavone	CYP3A4,	1576,	CG2060,
isoflurane	DYNC1H1,TRPV1,	1778,7442,	CG17150,CG5842,

Isol	ME1,	4199,	CG5889,
Isoliquiritigenin	NFKB1,	4790,	CG11992,
isometronidazole	CHM,	1121,	CG8432,
isoprenoids	PSMD9,	5715,	CG9588,
Isopropyl Thiogalactoside	LETMD1,	25875,	CG5989,
Isoprostanes	FGFR3,	2261,	CG7223,
Isorhamnetin	NFKB1,	4790,	CG11992,
isosilybin A	NFKB1,	4790,	CG11992,
Isosorbide Dinitrate	SERPINC1,	462,	CG8137,
isothiocyanates	NFKB1,	4790,	CG11992,
Isotretinoin	CYP3A4,SFRS1,PAFA H1B1,	1576,6426,5048,	CG2060,CG6987,CG84 40,
Isradipine	CYP3A4,	1576,	CG2060,
istradefylline	ADORA2A,	135,	CG9753,
Itraconazole	CYP4F3,CYP3A5,CYP3 A4,	4051,1577,1576,	CG2060,CG2060,CG20 60,
ivabradine	CYP3A4,	1576,	CG2060,
Ivermectin	GPR177,	79971,	CG6210,
ixabepilone	CYP3A4,	1576,	CG2060,
jadomycin B	AURKB,	9212,	CG6620,
Jexin	FGFR3,	2261,	CG7223,
JHW 015	CNR2,	1269,	CG12796,
JTE 013	S1PR2,S1PR1,S1PR3,	9294,1901,1903,	CG12796,CG12796,CG 12796,
K 252	POLD1,CDC2,	5424,983,	CG5949,CG8203,
K-PAM	LMAN1,SERPINC1,	3998,462,	CG6822,CG8137,
K-SR	SAG,PPP2CA,BDP1,	6295,5515,55814,	CG5711,CG7109,CG93 05,
kaempferol	NFKB1,CYP3A4,CD36, MLL,	4790,1576,948,42 97,	CG11992,CG2060,CG7 422,CG8651,
kaempferol-3-O-(2,3,4-tri-O- acetyl-alpha-l- rhamnopyranoside)	CYP3A4,	1576,	CG2060,
KAFA	CYP4F3,CYP3A5,	4051,1577,	CG2060,CG2060,
Kaken	THOC4,NFKB1,S1PR1, WDR92,BRD8,TXNRD 1,TXNRD2,TYMS,KHD RBS1,UBE2L3,CCNA2, FGR,PSIP1,CDK2,SNR PG,	10189,4790,1901, 116143,10902,729 6,10587,7298,106 57,7332,890,2268, 11168,1017,6637,	CG1101,CG11992,CG1 2796,CG14353,CG145 14,CG2151,CG2151,C G3181,CG3613,CG582 1,CG5788,CG5940,CG 7873,CG7946,CG8203 ,CG9742,
Kamalin	CCNA2,POLD1,CDC2,	890,5424,983,	CG5940,CG5949,CG82 03,
Kaolin	SERPINC1,	462,	CG8137,
Kathon 886	DLD,	1738,	CG7430,
KB 141	TXNRD2,	10587,	CG2151,
Kemi	UGT2B4,UGT1A9,UGT 2B7,GSTO1,DNAL1,D YNLL1,	7363,54600,7364, 9446,7802,8655,	CG4772,CG4772,CG47 72,CG6673,CG6971,C G6998,
kenpaullone	CDC2,CDK5,	983,1020,	CG8203,CG8203,
Ketamine	SLC2A1,FGFR3,	6513,2261,	CG1086,CG7223,
Keto-desogestrel	CYP3A4,	1576,	CG2060,
Keto-pgf1alpha	SERPINC1,	462,	CG8137,
ketoglutarate	CELSR1,ME2,	9620,4200,	CG11895,CG5889,
Kipca	NFKB1,SERPINC1,CD C2,	4790,462,983,	CG11992,CG8137,CG8 203,

KMD 3213	CYP3A4,	1576,	CG2060,
KMTB	CTBP1,	1487,	CG7583,
Kojic acid	NFKB1,	4790,	CG11992,
KR-31543	CYP3A4,	1576,	CG2060,
KRM 1648	CYP3A4,	1576,	CG2060,
L 365260	CCKBR,	887,	CG6881,
L 740,093	CCKBR,	887,	CG6881,
L-454,560	PDE4A,	5141,	CG14940,
L-696,474	SLC2A1,	6513,	CG1086,
L-T3	CYP3A4, TXNRD1, TXNRD2,	1576, 7296, 10587,	CG2060, CG2151, CG2151,
LAAM	CYP3A4,	1576,	CG2060,
lacidipine	NFKB1,	4790,	CG11992,
lactacystin	NFKB1, TXNRD2, TXNRD1, SMAD7, PSMD9,	4790, 10587, 7296, 4092, 5715,	CG11992, CG2151, CG2151, CG5201, CG9588,
lactisole	TAS1R2,	80834,	CG7145,
lamotrigine	UGT1A3, UGT1A4,	54659, 54657,	CG4772, CG4772,
Lanol	ACAT2, ACAT1, PLXNB2, PQBP1, NFKB1, CNR1, LPAR2, VDAC1, DNAH5, CYP3A4, CYP4F3, CYP3A5, TXNRD2, DLL1, COG2, SCARB2, CD36, SERPINC1, CDC2, PAFAH1B1,	39, 38, 23654, 10084, 4790, 1268, 9170, 7416, 1767, 1576, 4051, 1577, 10587, 28514, 22796, 950, 948, 462, 983, 5048,	CG10932, CG10932, CG11081, CG11820, CG11992, CG12796, CG12796, CG17137, CG17150, CG2060, CG2060, CG2060, CG2151, CG3619, CG6177, CG7422, CG7422, CG8137, CG8203, CG8440,
lansoprazole	CYP4F3, CYP3A4, CYP3A5,	4051, 1576, 1577,	CG2060, CG2060, CG2060,
lapatinib	CYP3A4, PSMD9,	1576, 5715,	CG2060, CG9588,
laquinimod	CYP3A4,	1576,	CG2060,
latrunculin A	DNAH5,	1767,	CG17150,
latrunculin B	SMN1,	6606,	CG16725,
lavendustin A	FGFR4,	2264,	CG7223,
LBH589	PSMD9,	5715,	CG9588,
leflunomide	FYN,	2534,	CG7873,
lenalidomide	PAFAH1B1,	5048,	CG8440,
Lendorm	CYP3A4,	1576,	CG2060,
Lentinan	TAOK2,	9344,	CG14217,
leptomycin B	PHB, NFKB1, CCNB1, PSMD9,	5245, 4790, 891, 5715,	CG10691, CG11992, CG5940, CG9588,
Leucovorin	NFKB1, TBXAS1, TYMS,	4790, 6916, 7298,	CG11992, CG2060, CG3181,
Leukotriene C4	NFKB1, GPR177,	4790, 79971,	CG11992, CG6210,
Leukotriene D4	NFKB1, LPAR2,	4790, 9170,	CG11992, CG12796,
leukotrienes	LPAR2, CYP4F3, NAP1L1,	9170, 4051, 4673,	CG12796, CG2060, CG5330,
Leupeptin	NFKB1, CAPNS1, CAPN2,	4790, 826, 824,	CG11992, CG8107, CG8107,
Levamisole	DPAGT1,	1798,	CG5287,
Levitra	CYP3A4, CYP3A5,	1576, 1577,	CG2060, CG2060,
levobupivacaine	CYP3A4,	1576,	CG2060,
Levonorgestrel	DLL1,	28514,	CG3619,
levugen	SLC2A1, SLC2A5, SLC2A3, SLC2A2, SLC2A4,	6513, 6518, 6515, 6514, 6517,	CG1086, CG1086, CG1086, CG1086, CG1086,
liarozole	TBXAS1,	6916,	CG2060,

Lidocaine	CYP3A4,TRPV1,	1576,7442,	CG2060,CG5842,
lilopristone	CYP3A4,	1576,	CG2060,
Lipoate	NFKB1,DLAT,	4790,1737,	CG11992,CG5261,
Lipofectamine	GPR177,	79971,	CG6210,
lipoteichoic acid	NFKB1,CD36,	4790,948,	CG11992,CG7422,
Lipoxins	LPAR2,	9170,	CG12796,
lissamine rhodamine B	CYP3A4,	1576,	CG2060,
lithocholic acid	NFKB1,CYP3A4,UGT2 B7,	4790,1576,7364,	CG11992,CG2060,CG4 772,
LMWH	BRD8,SMN1,TBXAS1, TYMS,PDHX,NAP1L4, SAG,FGFR1,PSIP1,SE RPINC1,SERPINB1,CD K2,	10902,6606,6916, 7298,8050,4676,6 295,2260,11168,4 62,1992,1017,	CG14514,CG16725,CG 2060,CG3181,CG5261 ,CG5330,CG5711,CG7 223,CG7946,CG8137, CG8137,CG9453,CG94 60,CG8203,
LNAC	NFKB1,CD36,PSIP1,P SMD9,	4790,948,11168,5 715,	CG11992,CG7422,CG7 946,CG9588,
lonafarnib	NFKB1,	4790,	CG11992,
Loperamide	CYP3A4,	1576,	CG2060,
lopinavir	CYP3A4,	1576,	CG2060,
Loratadine	CYP3A4,	1576,	CG2060,
Lorazepam	PLXNA2,ECD,	5362,11319,	CG11081,CG5714,
Lorex	CYP3A4,	1576,	CG2060,
lorglumide	CCKBR,CCKAR,	887,886,	CG6881,CG6881,
Losartan	CYP3A4,	1576,	CG2060,
Lovan	ME1,	4199,	CG5889,
loxiglumide	CCKAR,	886,	CG6881,
LUF 5831	ADORA1,	134,	CG9753,
lupeol	POLD1,CDC2,	5424,983,	CG5949,CG8203,
luteolin	CYP3A4,CYP3A5,CCN B1,EXOSC1,	1576,1577,891,51 013,	CG2060,CG2060,CG59 40,CG6249,
LY 117018	FGFR1,	2260,	CG7223,
LY 293111	CCNA2,CDK2,PSMD9,	890,1017,5715,	CG5940,CG8203,CG95 88,
LY231514	TBXAS1,TYMS,	6916,7298,	CG2060,CG3181,
LYCOPENE	NFKB1,PSMD9,	4790,5715,	CG11992,CG9588,
lysophosphatidic acid	NFKB1,S1PR4,S1PR1, LPAR2,LPAR1,S1PR5, S1PR3,SMN1,SMAD7, CD36,ANK1,FYN,	4790,8698,1901,9 170,1902,53637,1 903,6606,4092,94 8,286,2534,	CG11992,CG12796,CG 12796,CG12796,CG12 796,CG12796,CG1279 6,CG16725,CG5201,C G7422,CG7462,CG787 3,
Lysophosphatidylcholines	LPAR2,	9170,	CG12796,
Lysophosphatidylglycerol	NFKB1,	4790,	CG11992,
lysyl-arginyl-alanyl-lysyl- alanyl-lysyl-threonyl-threonyl- lysyl-lysyl-arginine	NFKB1,KHDRBS1,PAR D6A,	4790,10657,50855 ,	CG11992,CG3613,CG5 821,CG5884,
M&B22948	LPAR2,	9170,	CG12796,
Malix	CYP3A4,	1576,	CG2060,
manidipine	CYP3A4,	1576,	CG2060,
manumycin	NFKB1,	4790,	CG11992,
maraviroc	CYP3A4,	1576,	CG2060,
Matrine	UBE2L3,	7332,	CG5788,
MCYST-LR	PPP2CA,	5515,	CG7109,
Me-nle-asp-phe-NH2	CCKBR,	887,	CG6881,

mead ethanolamide	CNR1,	1268,	CG12796,
MeAsO(OH)2	GSTO1,	9446,	CG6673,
Mebumal	SLC2A1,	6513,	CG1086,
Mechlorethamine	NFKB1,CCNB1,POLD1 ,CDC2,	4790,891,5424,98 3,	CG11992,CG5940,CG5 949,CG8203,
Medroxyprogesterone 17-Acetate	CYP3A4,DLL4,SERPINC1,PSMD9,	1576,54567,462,5 715,	CG2060,CG3619,CG81 37,CG9588,
Mefenamic Acid	UGT1A9,	54600,	CG4772,
Megalomicin	CD36,	948,	CG7422,
Melarsoprol	NFKB1,	4790,	CG11992,
Melatol	CYP4F3,CYP3A5,GSR, ARR3,	4051,1577,2936,4 07,	CG2060,CG2060,CG21 51,CG5711,
meletin	NFKB1,CYP3A4,CYP3 A5,UGT1A6,UGT1A3, UGT1A4,CCNB1,POLD 1,CDC2,CDK2,PSMD9 ,	4790,1576,1577,5 4578,54659,54657 ,891,5424,983,101 7,5715,	CG11992,CG2060,CG2 060,CG4772,CG4772, CG4772,CG5940,CG59 49,CG8203,CG8203,C G9588,
melitten	NFKB1,	4790,	CG11992,
meloxicam	NFKB1,	4790,	CG11992,
Melphalan	CCNB1,PAFAH1B1,	891,5048,	CG5940,CG8440,
Memantine	CYP3A4,	1576,	CG2060,
menadiol	UGT1A4,UGT1A3,UGT 1A6,	54657,54659,5457 8,	CG4772,CG4772,CG47 72,
Menhaden oil	CYP4F3,CYP3A5,	4051,1577,	CG2060,CG2060,
menthofuran	CYP3A4,	1576,	CG2060,
Meperidine	CYP3A4,	1576,	CG2060,
Mephenytoin	CYP3A4,CYP4F3,CYP3 A5,	1576,4051,1577,	CG2060,CG2060,CG20 60,
mesalamine	NFKB1,	4790,	CG11992,
Mesaton	NFKB1,CCNA2,	4790,890,	CG11992,CG5940,
Meth	NFKB1,CYP3A4,	4790,1576,	CG11992,CG2060,
methanandamide	CNR1,CADPS,	1268,8618,	CG12796,CG18026,
methanethiosulfonate ethylammonium	TRPA1,	8989,	CG5751,
Methimazole	FMO3,	2328,	CG3006,
methionyl-leucyl- phenylalanine	LPAR2,TRPV2,	9170,51393,	CG12796,CG5842,
Methorphan	CYP4F3,CYP3A4,CYP3 A5,	4051,1576,1577,	CG2060,CG2060,CG20 60,
Methoxsalen	CYP3A4,	1576,	CG2060,
Methoxy-psoralen	PRPF19,	27339,	CG5519,
methoxyamine	SERPINC1,	462,	CG8137,
methoxychlor	CYP3A4,	1576,	CG2060,
methoxymorphinan	CYP3A4,	1576,	CG2060,
methyl chloroformate	TYMS,	7298,	CG3181,
Methyl glycine	CYP4F3,CYP3A5,	4051,1577,	CG2060,CG2060,
Methyl paraben	TRPA1,	8989,	CG5751,
methyl salicylate	UGT1A6,	54578,	CG4772,
methyl tryptophan	FOXP3,	50943,	CG16899,
methyl-dopa	UGT1A6,	54578,	CG4772,
methyl-phosphorothioate	TYMS,	7298,	CG3181,
methyl-Pyridinium	CCKBR,	887,	CG6881,
methylamine	SLC2A4,CYP4F3,CYP3 A5,	6517,4051,1577,	CG1086,CG2060,CG20 60,
MethylamylNitrosamine	CYP4F3,CYP3A5,	4051,1577,	CG2060,CG2060,

Methylene-tetrahydrofolate	TYMS,	7298,	CG3181,
methylenetetrahydrofolates	TYMS,	7298,	CG3181,
methylglyoxal	NFKB1,HAGH,TRPV6,	4790,3029,55503,	CG11992,CG4365,CG5842,
methylnaltrexone	S1PR3,	1903,	CG12796,
methyloxidanyl	CYP3A4,	1576,	CG2060,
methylparaben	TRPA1,	8989,	CG5751,
methylphosphate	CDK9,	1025,	CG5179,
Methylprednisolone	NFKB1,CYP3A4,SERPIN1,	4790,1576,462,	CG11992,CG2060,CG8137,
methylxanthines	PDE1B,	5153,	CG14940,
Metoclopramide	NFKB1,	4790,	CG11992,
Metopiron	CYP4F3,CYP3A4,CYP3A5,	4051,1576,1577,	CG2060,CG2060,CG2060,
Metribolone	NFKB1,OPN4,CCNA1,PSIP1,	4790,94233,8900,11168,	CG11992,CG4550,CG5940,CG7946,
mevalonic acid	NFKB1,	4790,	CG11992,
micafungin	CYP3A4,	1576,	CG2060,
miconazole	CYP4F3,CYP3A4,CYP3A5,	4051,1576,1577,	CG2060,CG2060,CG2060,
Mictonorm	CYP3A4,	1576,	CG2060,
Midazolam	PLXNB1,CYP4F3,CYP3A5,CYP3A4,	5364,4051,1577,1576,	CG11081,CG2060,CG2060,CG2060,
Mifepristone	CYP3A4,PRDX6,UBE2L3,CCNA2,CDK2,	1576,9588,7332,890,1017,	CG2060,CG3083,CG5788,CG5940,CG8203,
MIII	FGFR1,	2260,	CG7223,
Milrinone	PDE4A,	5141,	CG14940,
Mimosine	CCNA2,	890,	CG5940,
mirtazapine	CYP3A4,	1576,	CG2060,
Mit-C	NFKB1,	4790,	CG11992,
mithramycin	NDUFV2,	4729,	CG5703,
MitoTracker-Red	TFAM,	7019,	CG4217,
Mitoxantrone	UBE2L3,PAFAH1B1,	7332,5048,	CG5788,CG8440,
mizolastine	CYP3A4,	1576,	CG2060,
MLN8054	AURKA,	6790,	CG6620,
mofarotene	PSMD9,	5715,	CG9588,
Monensin	CCNA2,CCNB1,POLD1,CDC2,CDK2,PSMD9,	890,891,5424,983,1017,5715,	CG5940,CG5940,CG5949,CG8203,CG8203,CG9588,
mono-N-demethyladinazolam	CYP3A4,	1576,	CG2060,
mono(2-ethylhexyl) phthalate	CELSR2,	1952,	CG11895,
monoethylglycinexylidide	CYP3A4,	1576,	CG2060,
monomethylarsonic acid	SLC2A1,	6513,	CG1086,
monoterpenes	NFKB1,	4790,	CG11992,
monuron	TRPV1,	7442,	CG5842,
MORIN	SMAD7,CD36,	4092,948,	CG5201,CG7422,
morpholine	ME1,	4199,	CG5889,
morusin	NFKB1,	4790,	CG11992,
motexafin gadolinium	CYP3A4,TXNRD1,	1576,7296,	CG2060,CG2151,
Motuporin	PPP2CA,	5515,	CG7109,
moxifloxacin	NFKB1,	4790,	CG11992,
MPEG	CYP3A4,	1576,	CG2060,
Muraglitazar	UGT1A4,UGT1A3,	54657,54659,	CG4772,CG4772,
mutalipocin II	MLL,	4297,	CG8651,
mycophenolic acid	UGT2B7,UGT1A9,UGT	7364,54600,54576	CG4772,CG4772,CG47

	1A8,UGT1A4,UGT1A3,UGT1A7,	,54657,54659,54577,	72,CG4772,CG4772,CG4772,
Mycose	LPAR2,	9170,	CG12796,
Myocol	PSMD12,	5718,	CG1100,
myricetin	NFKB1,CD36,	4790,948,	CG11992,CG7422,
myxothiazol	TXNRD2,	10587,	CG2151,
N-(2-cyclohexyloxy-4-nitro-phenyl)methanesulfonamide	NFKB1,UBE2L3,	4790,7332,	CG11992,CG5788,
N-(2-hydroxypropyl)methacrylamide	TXNRD2,TXNRD1,	10587,7296,	CG2151,CG2151,
N-(3-(4-chlorophenyl)-2-(3-cyanophenyl)-1-methylpropyl)-2-methyl-2-((5-(trifluoromethyl)pyridin-2-yl)oxy)propanamide	CNR1,	1268,	CG12796,
N-(3-methoxyphenyl)-4-chlorocinnamanilide	TRPV1,	7442,	CG5842,
N-(3-oxododecanoyl)homoserine lactone	NFKB1,	4790,	CG11992,
N-(4-(6-(4-(1-(4-fluorophenyl)ethyl)piperazin-1-yl)pyrimidin-4-yloxy)benzo(d)thiazol-2-yl)acetamide	TRPV1,	7442,	CG5842,
N-(4-(6-(4-trifluoromethylphenyl)pyrimidin-4-yloxy)benzothiazol-2-yl)acetamide	TRPV1,	7442,	CG5842,
N-(4-cyano-benzo(b)thiophene-2-carbonyl)guanidine	CYP3A4,CYP3A7,	1576,1551,	CG2060,CG2060,
N-(5-(((5-(1,1-dimethylethyl)-2-oxazolyl)methyl)thio)-2-thiazolyl)-4-piperidinecarboxamide	UBE2L3,	7332,	CG5788,
N-acetylcysteine lysinate	NFKB1,	4790,	CG11992,
n-acetylmuramyl-l-alanyl-d-isoglutamine	NFKB1,	4790,	CG11992,
N-acetylneuraminic acid	PGC,CNR2,KHDRBS1,SERPINC1,	5225,1269,10657,462,	CG10872,CG12796,CG3613,CG5821,CG8137,
N-desmethyloclobazam	CYP3A4,	1576,	CG2060,
N-ethylmaleimide	KCNQ2,HNRNPA1,	3785,3178,	CG12915,CG9983,
N-methyl-N-(trimethylsilyl)trifluoroacetamide	TYMS,	7298,	CG3181,
N-methylsulfonyl-6-(2-propargyloxy-phenyl)hexanamide	CYP3A5,CYP4F3,	1577,4051,	CG2060,CG2060,
N-oleoyldopamine	TRPV1,	7442,	CG5842,
N-phenyl-1-naphthylamine	SLC5A7,	60482,	CG7708,
N,N,N',N'-tetramethylethylenediamine	ME1,	4199,	CG5889,
N(6)-cyclohexyl-2-O-	ADORA1,	134,	CG9753,

methyadenosine			
N(6)-cyclopentyladenosine	ADORA1,	134,	CG9753,
N3-IQ	CYP3A5,CYP4F3,	1577,4051,	CG2060,CG2060,
Nadroparin	SERPINC1,	462,	CG8137,
naftifine	CYP4F3,CYP3A5,	4051,1577,	CG2060,CG2060,
nal-NH2	CCKBR,	887,	CG6881,
NALS	SMN1,	6606,	CG16725,
nanchangmycin	NDUFAB1,	4706,	CG9160,
Naproxen	UGT2B7,UGT1A1,	7364,54658,	CG4772,CG4772,
naratriptan	SFRS1,	6426,	CG6987,
narbonolide	NDUFAB1,	4706,	CG9160,
NARIGENIN	SLC2A4,CYP3A4,UGT1A3,	6517,1576,54659,	CG1086,CG2060,CG4772,
Narkotil	STX8,	9482,	CG4109,
Nasol	TYMS,	7298,	CG3181,
natalizumab	FOXP3,	50943,	CG16899,
nateglinide	CYP3A4,	1576,	CG2060,
Naxy	NFKB1,CYP3A4,CYP3A5,	4790,1576,1577,	CG11992,CG2060,CG2060,
nebivolol	NFKB1,CDK2,	4790,1017,	CG11992,CG8203,
Nefazodone	CYP4F3,CYP3A4,CYP3A5,	4051,1576,1577,	CG2060,CG2060,CG2060,
nefiracetam	FGFR3,	2261,	CG7223,
Nelfinavir	CYP4F3,CYP3A4,CYP3A5,	4051,1576,1577,	CG2060,CG2060,CG2060,
Neomycin	SERPINB1,	1992,	CG8137,CG9453,CG9460,
Neopterin	NFKB1,	4790,	CG11992,
Neostigmine	FGFR3,	2261,	CG7223,
Neut	SLC25A21,UBE2L3,	89874,7332,	CG5254,CG5788,
Nevirapine	CYP3A4,	1576,	CG2060,
NFBA	CYP3A4,	1576,	CG2060,
Nialk	ECD,	11319,	CG5714,
Nicardipine	CYP3A5,CYP3A4,DLL1,CD36,	1577,1576,28514,948,	CG2060,CG2060,CG3619,CG7422,
Niflumic Acid	UGT1A9,	54600,	CG4772,
nimesulide	SERPINB3,	6317,	CG8137,CG9453,CG9460,
niobium	ME1,	4199,	CG5889,
nitecapone	NFKB1,	4790,	CG11992,
nitroanilide	SERPINC1,	462,	CG8137,
nitroaspirin	NFKB1,	4790,	CG11992,
Nitrofurans	GSR,DLD,	2936,1738,	CG2151,CG7430,
NITROPYRENE	CYP3A4,CYP4F3,CYP3A5,	1576,4051,1577,	CG2060,CG2060,CG2060,
nitrosamines	CYP3A5,CYP4F3,UGT1A7,	1577,4051,54577,	CG2060,CG2060,CG4772,
Nitrosoanabasine	CYP3A4,	1576,	CG2060,
Nitrosocysteine	NFKB1,LPAR2,	4790,9170,	CG11992,CG12796,
nitrosulindac	NFKB1,	4790,	CG11992,
Nizatidine	FGFR3,	2261,	CG7223,
NK 104	NFKB1,CD36,	4790,948,	CG11992,CG7422,
NK314	CDC2,	983,	CG8203,
NMDA	DLG1,FYN,	1739,2534,	CG1725,CG7873,
NN 703	CYP3A4,	1576,	CG2060,

Noan	SLC2A1,PDE4A,CYP3A4,	6513,5141,1576,	CG1086,CG14940,CG2060,
Nobiletin	NFKB1,CYP3A4,GSR,UGT1A4,UGT1A1,UGT1A3,CD36,	4790,1576,2936,54657,54658,54659,948,	CG11992,CG2060,CG2151,CG4772,CG4772,CG4772,CG7422,
NOC 18	CYP3A4,	1576,	CG2060,
Nocodazole	NFKB1,TAOK2,CCNB1,BICD2,COX7A2L,	4790,9344,891,23299,9167,	CG11992,CG14217,CG5940,CG6605,CG9603,
nodularin	PPP2CA,	5515,	CG7109,
Nodularin v	PPP2CA,	5515,	CG7109,
nolatrexed	TYMS,	7298,	CG3181,
Nonoxynol	NFKB1,	4790,	CG11992,
noralfentanil	CYP3A4,	1576,	CG2060,
norbuprenorphine	UGT1A3,	54659,	CG4772,
Norclozapine	CYP3A4,	1576,	CG2060,
Nordihydroguaiaretic Acid	NFKB1,	4790,	CG11992,
Norethindrone	CYP3A4,TYMS,	1576,7298,	CG2060,CG3181,
noreximide	CDC2,	983,	CG8203,
norfluoxetine	CYP4F3,CYP3A5,CYP3A4,	4051,1577,1576,	CG2060,CG2060,CG2060,
Norgestrel	TYMS,	7298,	CG3181,
norharman	CYP3A4,	1576,	CG2060,
norketobemidone	CYP3A4,	1576,	CG2060,
norlaudanosoline	NFKB1,	4790,	CG11992,
normeperidine	CYP3A4,	1576,	CG2060,
Nortilidine	CYP3A4,	1576,	CG2060,
norverapamil	CYP3A4,CYP3A5,	1576,1577,	CG2060,CG2060,
novobiocin	GPR177,	79971,	CG6210,
NS-187	YES1,	7525,	CG7873,
NSC 23766	NFKB1,ACTR2,	4790,10097,	CG11992,CG9901,
NSC 366140	CYP3A4,CYP4F3,CYP3A5,	1576,4051,1577,	CG2060,CG2060,CG2060,
NSC 663284	CDC2,	983,	CG8203,
NSC-134754	SLC2A1,	6513,	CG1086,
NU2058	CDK2,	1017,	CG8203,
number-one	SMN1,	6606,	CG16725,
nutlin 3	NFKB1,MRPL41,UBE2L3,	4790,64975,7332,	CG11992,CG12954,CG5788,
NVP-AEW541	PSMD9,	5715,	CG9588,
Nylon	CADPS,	8618,	CG18026,
O-(chloroacetylcarbamoyl)fumagillol	CYP4V2,CCNA2,POLD1,CDC2,CDK2,	285440,890,5424,983,1017,	CG2060,CG5940,CG5949,CG8203,CG8203,
O-desethylreboxetine	CYP3A4,	1576,	CG2060,
O-Due	LRRN2,CYP3A4,CYP4F3,CYP3A5,	10446,1576,4051,1577,	CG11280,CG2060,CG2060,CG2060,
o-quinone	TXNRD2,TXNRD1,DL D,	10587,7296,1738,	CG2151,CG2151,CG7430,
obovitol	NFKB1,	4790,	CG11992,
OCDD	CYP3A7,CYP3A5,	1551,1577,	CG2060,CG2060,
octanediol	ME1,	4199,	CG5889,
Octoxynol	UGT1A6,UGT1A1,UGT1A3,UGT2B4,UGT2B15,UGT2B7,UGT1A4,	54578,54658,54659,7363,7366,7364,54657,	CG4772,CG4772,CG4772,CG4772,CG4772,CG4772,

Octreotide	PLXNA2,CD36,PSMD9	5362,948,5715,	CG11081,CG7422,CG9588,
Okadaic Acid	SLC2A1,SLC2A4,CTSB,NFKB1,TXNRD2,POLD1,AURKB,CDC2,ACSL3,	6513,6517,1508,4790,10587,5424,9212,983,2181,	CG1086,CG1086,CG10992,CG11992,CG2151,CG5949,CG6620,CG8203,CG8732,
olanzapine	CYP4F3,CYP3A5,FMO3,UGT1A4,	4051,1577,2328,54657,	CG2060,CG2060,CG3006,CG4772,
olefins	ME1,	4199,	CG5889,
oleoylethanolamide	CNR1,	1268,	CG12796,
olmelin	UGT1A3,UGT1A4,	54659,54657,	CG4772,CG4772,
olmesartan	NFKB1,	4790,	CG11992,
olomoucine	POLD1,CDK2,CDC2,	5424,1017,983,	CG5949,CG8203,CG8203,
olomoucine II	CDK9,	1025,	CG5179,
Oltipraz	NFKB1,CYP3A4,UGT1A4,UGT1A6,UGT1A3,UGT1A1,	4790,1576,54657,54578,54659,54658,	CG11992,CG2060,CG4772,CG4772,CG4772,
omalizumab	CYP3A4,	1576,	CG2060,
omega-agatoxin	FGFR3,	2261,	CG7223,
omega-Conotoxin GVIA	FGFR3,	2261,	CG7223,
omega-N-Methylarginine	FGFR3,	2261,	CG7223,
Omeprazole	PGC,CYP4F3,CYP3A4,CYP3A5,	5225,4051,1576,1577,	CG10872,CG2060,CG2060,CG2060,
omeprazole sulfone	CYP3A4,	1576,	CG2060,
onapristone	CYP3A4,	1576,	CG2060,
ONCB	PPP3R1,	5534,	CG14353,
Ondansetron	CYP3A4,	1576,	CG2060,
ONO4819	FGFR3,	2261,	CG7223,
Optef	RFC1,NFKB1,DNAH5,CYP3A5,CYP3A7,CYP3A4,DLL1,UGT1A1,ME1,SFRS1,SERPINC1,	5981,4790,1767,1577,1551,1576,28514,54658,4199,6426,462,	CG1119,CG11992,CG17150,CG2060,CG2060,CG2060,CG3619,CG4772,CG5889,CG6987,CG8137,
OR 1246	NFKB1,	4790,	CG11992,
oroxylin A	POLD1,CDC2,	5424,983,	CG5949,CG8203,
Orphenadrine	CYP3A4,	1576,	CG2060,
Osten	CYP3A4,FGFR1,	1576,2260,	CG2060,CG7223,
osteum	SERPINC1,	462,	CG8137,
OSU 03012	CCNA2,CDK2,	890,1017,	CG5940,CG8203,
Ouabain	LRRN2,NFKB1,ATP4B,	10446,4790,496,	CG11280,CG11992,CG8663,
OVEX	CYP3A7,UGT1A3,	1551,54659,	CG2060,CG4772,
Ovex	CYP3A5,CYP3A4,UGT1A1,SERPINC1,	1577,1576,54658,462,	CG2060,CG2060,CG4772,CG8137,
oxaliplatin	NFKB1,TYMS,SLC25A21,POLD1,CDC2,CDK2,	4790,7298,89874,5424,983,1017,	CG11992,CG3181,CG5254,CG5949,CG8203,CG8203,
Oxarol	PLXNA2,PSMD9,	5362,5715,	CG11081,CG9588,
oxaspirodion	NFKB1,	4790,	CG11992,
oxatomide	CYP3A4,	1576,	CG2060,
Oxazepam	UGT2B7,UGT2B15,	7364,7366,	CG4772,CG4772,
oxcarbazepine	CYP3A5,CYP3A4,	1577,1576,	CG2060,CG2060,
Oxotremorine	FGFR3,	2261,	CG7223,
oxotremorine M	FGFR3,	2261,	CG7223,
Oxymorphone	CYP3A4,	1576,	CG2060,

Oxyntomodulin	CCKAR,	886,	CG6881,
Oxytrol	CYP3A5,CYP4F3,CYP3A4,	1577,4051,1576,	CG2060,CG2060,CG2060,
p-ABA	SERPINC1,	462,	CG8137,
p-XSC	NFKB1,	4790,	CG11992,
p-Xylol	CELSR1,ME2,	9620,4200,	CG11895,CG5889,
Paclitaxel	NFKB1,TAOK2,CYP4F3,CYP3A4,CYP3A5,TXNRD2,TXNRD1,TYMS,UBE2L3,CCNB1,POLD1,AURKB,CDC2,CDK2,CDK5,PSMD9,COX7A2L,	4790,9344,4051,1576,1577,10587,7296,7298,7332,891,5424,9212,983,1017,1020,5715,9167,	CG11992,CG14217,CG2060,CG2060,CG2060,CG2151,CG2151,CG3181,CG5788,CG5940,CG5949,CG6620,CG8203,CG8203,CG8203,CG9588,CG9603,
paeonol	NFKB1,	4790,	CG11992,
palladium	CELSR1,DNAH5,ME2,	9620,1767,4200,	CG11895,CG17150,CG5889,
palmitoleate	ME2,ME1,ME3,	4200,4199,10873,	CG5889,CG5889,CG5889,
PALMITOYL	UGT1A4,UGT1A3,	54657,54659,	CG4772,CG4772,
Palmitoylcarnitine	PANK2,	80025,	CG5725,
pamidronate	DDOST,	1650,	CG9022,
panaxadiol	CDK2,	1017,	CG8203,
panepoxydone	NFKB1,	4790,	CG11992,
pantoprazole	CYP3A4,	1576,	CG2060,
Papaverine	PDE4A,FGFR3,	5141,2261,	CG14940,CG7223,
Papite	NFKB1,TRPA1,	4790,8989,	CG11992,CG5751,
PAPP	HDAC3,	8841,	CG2128,
parecoxib	CYP3A4,	1576,	CG2060,
Paroxetine	CYP4F3,CYP3A5,	4051,1577,	CG2060,CG2060,
Parsal	PSMD12,NFKB1,	5718,4790,	CG1100,CG11992,
Parthenolide	NFKB1,	4790,	CG11992,
PC 314	NPFFR2,	10886,	CG10823,
PCA 4230	UBE2L3,CCNA2,	7332,890,	CG5788,CG5940,
PCSO	CNR2,	1269,	CG12796,
PD 134308	CCKBR,	887,	CG6881,
PD 144795	NFKB1,	4790,	CG11992,
PD 180988	CYP3A4,	1576,	CG2060,
PD 98059	SLC2A5,SLC2A4,NFKB1,SMN1,CYP3A4,UGT1A1,CDK2,	6518,6517,4790,606,1576,54658,1017,	CG1086,CG1086,CG11992,CG16725,CG2060,CG4772,CG8203,
pectin	ACAT1,	38,	CG10932,
Pemetrexed	TBX-AS1,TYMS,SLC46A1,	6916,7298,113235,	CG2060,CG3181,CG8008,
Penicillins	VDAC1,	7416,	CG17137,
Penite	PSMD12,NFKB1,	5718,4790,	CG1100,CG11992,
Pentagastrin	CCKAR,CCKBR,	886,887,	CG6881,CG6881,
Pentoxifylline	NFKB1,CCNB1,	4790,891,	CG11992,CG5940,
Peplomycin	NFKB1,	4790,	CG11992,
peppermint oil	CYP3A4,	1576,	CG2060,
Pepstatin A	CYP3A4,	1576,	CG2060,
Perazine	CYP3A4,	1576,	CG2060,
Pergolide	NFKB1,	4790,	CG11992,
Perillol	NFKB1,	4790,	CG11992,
Perilymph	SERPINB3,	6317,	CG8137,CG9453,CG9460,

periodate	CLTA,	1211,	CG6948,
perospirone	CYP3A4,	1576,	CG2060,
perovskite	TXNRD1, TXNRD2,	7296, 10587,	CG2151, CG2151,
PFFA	ECD,	11319,	CG5714,
Phebestin	FOXP3,	50943,	CG16899,
phen	NFKB1,	4790,	CG11992,
phenolate	ME1,	4199,	CG5889,
Phenols	UGT1A3, UGT1A4,	54659, 54657,	CG4772, CG4772,
phenoxodiol	CDK2,	1017,	CG8203,
Phenprocoumon	CYP3A4,	1576,	CG2060,
Phentermine	CYP4F3, CYP3A5,	4051, 1577,	CG2060, CG2060,
phenyl-propionamide	CYP3A4,	1576,	CG2060,
phenyl-Pyridinium	MPP1,	4354,	CG6703,
Phenytoin	CYP4F3, CYP3A4, CYP3A5, UGT1A6, UGT1A1,	4051, 1576, 1577, 54578, 54658,	CG2060, CG2060, CG2060, CG4772, CG4772,
pheophorbide a	CCNA1, POLD1, CDC2,	8900, 5424, 983,	CG5940, CG5949, CG8203,
phloretin	SLC2A1, SLC2A2,	6513, 6514,	CG1086, CG1086,
PHOB	CYP4B1, CYP4F3, CYP3A4, CYP4X1, CYP3A5, G	1580, 4051, 1576, 260293, 1577, 2952, 54658, 54578, 2261,	CG2060, CG2060, CG2060, CG2060, CG30005, CG4772, CG4772, CG7223,
phorate	CYP3A4, FMO1,	1576, 2326,	CG2060, CG3006,
phorbol	CADPS, TRPV1, TRPV4, CD36,	8618, 7442, 59341, 948,	CG18026, CG5842, CG5842, CG7422,
phorbol 12-phenylacetate 13-acetate 20-homovanillate	TRPV1,	7442,	CG5842,
phosphatidylethanolamines	GABA-RAP, GABARAPL2, GABARAPL1, SERPINC1,	11337, 11345, 23710, 462,	CG12334, CG12334, CG12334, CG8137,
Phosphatidylinositol 4,5-Diphosphate	KCNQ2, KHDRBS2, KHDRBS3, TRPV6, RASA2, PSIP1,	3785, 202559, 10656, 55503, 5922, 11168,	CG12915, CG3613, CG5821, CG3613, CG5821, CG5842, CG6721, CG7946,
phosphatidylinositol phosphate, PtdIns(4,5)P2	RASA2,	5922,	CG6721,
phytanic acid	UGT1A4, UGT1A3,	54657, 54659,	CG4772, CG4772,
Picibanil	TAOK2,	9344,	CG14217,
picric acid	TRPA1,	8989,	CG5751,
pifithrin	NFKB1, CCNB1,	4790, 891,	CG11992, CG5940,
Pilot	MLL,	4297,	CG8651,
pimecrolimus	NFKB1,	4790,	CG11992,
pioglitazone	SLC2A5, ACAT1, NFKB1, CYP3A5, CYP3A4, CD36, SERPINC1, PSMD9,	6518, 38, 4790, 1577, 1576, 948, 462, 5715,	CG1086, CG10932, CG11992, CG2060, CG2060, CG7422, CG8137, CG9588,
pipecoloxylidide	CYP3A4,	1576,	CG2060,
piperidine	SMN1,	6606,	CG16725,
piperine	CYP3A4, UGT1A3, UGT1A4, TRPV1,	1576, 54659, 54657, 7442,	CG2060, CG4772, CG4772, CG5842,
Pira	LYZ, CYP3A4,	4069, 1576,	CG1180, CG2060,
pirinixic acid	CYP4A11, CYP4X1,	1579, 260293,	CG2060, CG2060,
Piroxicam	SERPINC3,	6317,	CG8137, CG9453, CG9460,
PKC412	POLD1, CDC2,	5424, 983,	CG5949, CG8203,
plumbagin	NFKB1, POLD1, CDC2,	4790, 5424, 983,	CG11992, CG5949, CG8

			203,
Pluronic p 85	SLC2A1,	6513,	CG1086,
PMDT	ME1,	4199,	CG5889,
PMPA	FMO3,	2328,	CG3006,
PMSF	PSIP1,	11168,	CG7946,
PNPP	PPEF1,	5475,	CG6571,
Podophyllotoxin	CYP3A4,PAFAH1B1,	1576,5048,	CG2060,CG8440,
polidocanol	UGT1A3,UGT1A4,	54659,54657,	CG4772,CG4772,
poly-gamma-glutamate	TYMS,	7298,	CG3181,
ponicidin	NFKB1,	4790,	CG11992,
poractant alfa	CD36,	948,	CG7422,
posaconazole	CYP3A4,	1576,	CG2060,
potassium tellurate(IV)	UGT8,	7368,	CG4772,
PQQ Cofactor	TXNRD1,	7296,	CG2151,
pranlukast	GPR177,	79971,	CG6210,
Pravastatin	NFKB1,CYP3A5,CYP4F3,CYP3A4,CD36,	4790,1577,4051,1576,948,	CG11992,CG2060,CG2060,CG2060,CG7422,
Prazosin	CCNA2,	890,	CG5940,
PRDL	NFKB1,CYP3A5,CYP3A4,DPAGT1,	4790,1577,1576,1798,	CG11992,CG2060,CG2060,CG5287,
Precursor mma	DHX16,	8449,	CG10689,CG1375,
Prednisone	SERPINC1,	462,	CG8137,
pregnane	CYP3A4,CYP3A7,	1576,1551,	CG2060,CG2060,
Pregnanes	UGT2B7,UGT2B11,	7364,10720,	CG4772,CG4772,
Pregnanolone	CYP3A4,	1576,	CG2060,
pregnenolone 16alpha-carbonitrile	CYP3A4,	1576,	CG2060,
Pregnyl	NFKB1,NDUFA6,	4790,4700,	CG11992,CG7712,
preussin	CDK2,	1017,	CG8203,
Primidone	CYP3A4,	1576,	CG2060,
Proadifen	CYP4F3,CYP3A7,CYP3A5,	4051,1551,1577,	CG2060,CG2060,CG2060,
Proanthocyanidins	NFKB1,	4790,	CG11992,
Probenecid	TRPV2,GPR177,	51393,79971,	CG5842,CG6210,
Probucol	NFKB1,FGR,	4790,2268,	CG11992,CG7873,
Procasil	PSMD9,	5715,	CG9588,
Procetofen	CYP3A4,UBE2L3,	1576,7332,	CG2060,CG5788,
procyanidin B2	NFKB1,	4790,	CG11992,
Prodix	CYP3A4,	1576,	CG2060,
prolactin, polymeric	ECD,	11319,	CG5714,
Propafenone	CYP3A4,	1576,	CG2060,
Propanesulfonate	UGT1A4,UGT1A3,	54657,54659,	CG4772,CG4772,
Propofol	SLC2A1,PLXNB1,CYP3A4,UGT1A1,UGT1A9,	6513,5364,1576,54658,54600,	CG1086,CG11081,CG2060,CG4772,CG4772,
propyl pyrazole triol	UGT2B15,	7366,	CG4772,
propyne	ME3,	10873,	CG5889,
prostratin	NFKB1,	4790,	CG11992,
protopanaxadiol	FGFR4,	2264,	CG7223,
protopanaxatriol	FGFR4,	2264,	CG7223,
PS 15	CYP3A4,	1576,	CG2060,
Pseudohypericin	CYP3A4,	1576,	CG2060,
Pseudomonas-exotoxin	KDELRL1,FGFR2,	10945,2263,	CG5183,CG7223,
Psoralens	CYP3A4,	1576,	CG2060,
psychosine-3'-sulfate ester	S1PR3,	1903,	CG12796,

PTBP	UGT1A6,	54578,	CG4772,
pteridine	PDE4A,	5141,	CG14940,
Pterostilbene	PSMD9,	5715,	CG9588,
PURAC	SLC2A4,	6517,	CG1086,
Puromycin	KHDRBS1,	10657,	CG3613,CG5821,
putrescine	SLC25A21,TRPV1,	89874,7442,	CG5254,CG5842,
Pyocyanine	NFKB1,	4790,	CG11992,
Pyra	KCNQ2,KCNQ3,SERPI NB3,	3785,3786,6317,	CG12915,CG12915,CG 8137,CG9453,CG9460 ,
pyranones	NFKB1,	4790,	CG11992,
pyrazole	FYN,	2534,	CG7873,
Pyrethrins	CYP4F3,CYP3A4,CYP3 A5,	4051,1576,1577,	CG2060,CG2060,CG20 60,
pyridazine	ADORA1,	134,	CG9753,
Pyrimethamine	TBXAS1,TYMS,DHPS,	6916,7298,1725,	CG2060,CG3181,CG80 05,
pyrimidin-2-one beta- ribofuranoside	POLD1,CDC2,	5424,983,	CG5949,CG8203,
Pyro	CCNA2,CCNB1,CDK2, PSMD9,	890,891,1017,571 5,	CG5940,CG5940,CG82 03,CG9588,
pyrogallol sulfonphthalein	NFKB1,	4790,	CG11992,
pyrrole-2-carboxylic acid	PSMD9,	5715,	CG9588,
pyrrolidine dithiocarbamic acid	NFKB1,	4790,	CG11992,
pyrroloazepinone	CDK5,	1020,	CG8203,
Qingkailing	NFKB1,	4790,	CG11992,
quercitrin	CYP3A4,	1576,	CG2060,
quetiapine	CYP3A4,	1576,	CG2060,
Quicifal	CYP3A4,	1576,	CG2060,
quinazoline	NFKB1,TYMS,	4790,7298,	CG11992,CG3181,
Quinolinium	CYP3A4,	1576,	CG2060,
Quinpirole	FGFR3,	2261,	CG7223,
quinuclidin-3'-yl-1-phenyl- 1,2,3,4-tetrahydroisoquinoline- 2-carboxylate monosuccinate	CYP3A4,CYP4F3,CYP3 A5,	1576,4051,1577,	CG2060,CG2060,CG20 60,
quinupristin-dalfopristin	CYP3A4,	1576,	CG2060,
R-138727	CYP3A4,	1576,	CG2060,
R-99224	ME1,	4199,	CG5889,
Raloxifene	CYP3A4,SERPINC1,	1576,462,	CG2060,CG8137,
raltitrexed	TBX- AS1,TYMS,UBE2L3,	6916,7298,7332,	CG2060,CG3181,CG57 88,
Ramipril	DYNC1H1,	1778,	CG17150,
ramiprilat	NFKB1,	4790,	CG11992,
RAMP	CYP4F3,CYP3A4,CYP3 A5,CYP3A7,UGT1A1,U GT1A6,UGT2A3,GPR1 77,	4051,1576,1577,1 551,54658,54578, 79799,79971,	CG2060,CG2060,CG20 60,CG2060,CG4772,C G4772,CG4772,CG621 0,
Ranitidine	CYP4F3,CYP3A5,CYP3 A4,FGFR3,	4051,1577,1576,2 261,	CG2060,CG2060,CG20 60,CG7223,
RAPA	SLC2A1,EIF3J,GABAR APL2,GABARAPL1,SM N1,CYP3A4,CYP3A5,N PR1,UBE2L3,TRPV6,T RPV5,CCNA2,CD36,C DK2,PSMD9,	6513,8669,11345, 23710,6606,1576, 1577,4881,7332,5 5503,56302,890,9 48,1017,5715,	CG1086,CG12131,CG1 2334,CG12334,CG167 25,CG2060,CG2060,C G31183,CG5788,CG58 42,CG5842,CG5940,C G7422,CG8203,CG958 8,

rasagiline	NFKB1,	4790,	CG11992,
rebamipide	AURKB,	9212,	CG6620,
reboxetine	CYP3A4,	1576,	CG2060,
remifentanyl	ELAVL1,	1994,	CG4396,
renzapride	CYP4F3,CYP3A5,	4051,1577,	CG2060,CG2060,
repaglinide	CYP3A4,	1576,	CG2060,
Resiniferotoxin	TRPV1,	7442,	CG5842,
resiquimod	GSTO1,DNALI1,	9446,7802,	CG6673,CG6971,
Retardex	PDE4A,UGT1A4,UGT1A3,PSIP1,	5141,54657,54659,11168,	CG14940,CG4772,CG4772,CG7946,
Riacon	NFKB1,	4790,	CG11992,
Ribavirin	NFKB1,	4790,	CG11992,
Riboflavin	GSR,	2936,	CG2151,
Rifabutin	CYP4F3,CYP3A4,CYP3A5,POLD1,CDC2,	4051,1576,1577,5424,983,	CG2060,CG2060,CG2060,CG5949,CG8203,
rifamycins	GPR177,	79971,	CG6210,
Rifocin	CYP3A4,	1576,	CG2060,
rimonabant	CNR1,	1268,	CG12796,
risedronic acid	DDOST,	1650,	CG9022,
risperidone	LPAR3,CYP3A4,	23566,1576,	CG12796,CG2060,
Ristocetin	ACTR2,	10097,	CG9901,
Ritonavir	SLC2A4,NFKB1,CYP3A7,CYP3A4,CD36,	6517,4790,1551,1576,948,	CG1086,CG11992,CG2060,CG2060,CG7422,
rituximab	NFKB1,DNAH5,	4790,1767,	CG11992,CG17150,
Ro 13-8996	CYP3A4,	1576,	CG2060,
Ro 23-7553	CDK2,	1017,	CG8203,
Ro 23-7637	CYP3A4,	1576,	CG2060,
Ro 24-7429	NFKB1,	4790,	CG11992,
Ro 31-6233	SLC2A4,	6517,	CG1086,
Ro 31-7549	LPAR2,	9170,	CG12796,
Ro 31-8220	NFKB1,MAPK15,FGFR4,	4790,225689,2264,	CG11992,CG2309,CG7223,
RO4383596	FGFR1,FGFR2,	2260,2263,	CG7223,CG7223,
Robitet	PHB,UGT1A1,UGT1A6,DPAGT1,PSMD9,	5245,54658,54578,1798,5715,	CG10691,CG4772,CG4772,CG5287,CG9588,
rofecoxib	NFKB1,	4790,	CG11992,
roflumilast	PDE4A,PDE4B,CYP3A4,	5141,5142,1576,	CG14940,CG14940,CG2060,
rokitamycin	DPAGT1,	1798,	CG5287,
Rolipram	NFKB1,PDE4B,PDE4C,PDE4A,ADORA2A,	4790,5142,5143,5141,135,	CG11992,CG14940,CG14940,CG14940,CG9753,
romidepsin	NFKB1,	4790,	CG11992,
rooperol	CYP3A4,	1576,	CG2060,
ropivacaine	CYP3A4,	1576,	CG2060,
roscovitine	CDK9,UBE2L3,CCNA2,POLD1,CDK5,CDC2,CDK2,PSMD9,	1025,7332,890,5424,1020,983,1017,5715,	CG5179,CG5788,CG5940,CG5949,CG8203,CG8203,CG8203,CG9588,
rosiglitazone	SLC2A4,CYP3A4,CD36,ACSL4,	6517,1576,948,2182,	CG1086,CG2060,CG7422,CG8732,
rosmarinic acid	NFKB1,	4790,	CG11992,
rosuvastatin	CYP3A4,CYP3A5,	1576,1577,	CG2060,CG2060,
Roxithromycin	NFKB1,CYP3A4,	4790,1576,	CG11992,CG2060,
Rozevin	GPR177,CDC2,	79971,983,	CG6210,CG8203,

RPR 121056	CYP3A4,	1576,	CG2060,
RU 58668	NFKB1,PSMD9,	4790,5715,	CG11992,CG9588,
ruboxistaurin	CYP3A4,	1576,	CG2060,
rugosin E	NFKB1,	4790,	CG11992,
rutecarpine	CYP3A4,TRPV1,	1576,7442,	CG2060,CG5842,
Rutin	NFKB1,	4790,	CG11992,
S-(beta-p-methoxypropiophe- none)thiamine	CYP3A4,	1576,	CG2060,
S-Nitroso-N-Acetylpenicillamine	NFKB1,SERPINB3,	4790,6317,	CG11992,CG8137,CG9 453,CG9460,
S-Nitrosothiols	NFKB1,LPAR2,	4790,9170,	CG11992,CG12796,
S-phenyl-N-acetylcysteine	GSTT1,	2952,	CG30005,
sabarubicin	GPR177,	79971,	CG6210,
sabcomeline	FGFR3,	2261,	CG7223,
Safingol	TYMS,	7298,	CG3181,
Safrole	GSTT1,	2952,	CG30005,
SAGA	SMARCA1,	6594,	CG8625,
SAHA	NFKB1,HDAC3,KPNA2 ,POLD1,AURKB,AURK A,CDC2,	4790,8841,3838,5 424,9212,6790,98 3,	CG11992,CG2128,CG4 799,CG5949,CG6620, CG6620,CG8203,
saikosaponin	NFKB1,	4790,	CG11992,
Salicin	LPAR2,	9170,	CG12796,
salvin	CCNA2,PSMD9,	890,5715,	CG5940,CG9588,
samarium	DCP1B,EXOSC1,SNRP G,	196513,51013,663 7,	CG11183,CG6249,CG9 742,
SAMe	ELP3,	55140,	CG15433,
sanguinarine	NFKB1,	4790,	CG11992,
sapogenins	UGT1A4,	54657,	CG4772,
Saquinavir	CYP3A5,CYP3A4,CYP3 A7,	1577,1576,1551,	CG2060,CG2060,CG20 60,
Sarasar	CYP3A4,	1576,	CG2060,
Sarna	NFKB1,CYP3A4,TRPA 1,TRPV1,TRPV4,	4790,1576,8989,7 442,59341,	CG11992,CG2060,CG5 751,CG5842,CG5842,
sauchinone	NFKB1,	4790,	CG11992,
saxatilin	PSMD9,	5715,	CG9588,
SB 218078	POLD1,CDC2,	5424,983,	CG5949,CG8203,
SB 225002	LPAR2,	9170,	CG12796,
SB 415286	ACTR2,	10097,	CG9901,
SB-705498	TRPV1,	7442,	CG5842,
scandium	CELSR1,ME2,HNRNPH 3,	9620,4200,3189,	CG11895,CG5889,CG6 946,
SCH 66712	CYP3A4,	1576,	CG2060,
schizandrer A	NPFFR2,	10886,	CG10823,
scoparone	PSIP1,	11168,	CG7946,
Scopoletin	UGT1A3,	54659,	CG4772,
Score	SERPINC1,	462,	CG8137,
SDX 308	NFKB1,	4790,	CG11992,
Selegiline	KHDRBS1,	10657,	CG3613,CG5821,
seocalcitol	PSMD9,	5715,	CG9588,
Sep-Pak	ECD,	11319,	CG5714,
Serad	CYP3A4,	1576,	CG2060,
sertindole	CYP3A4,	1576,	CG2060,
sevoflurane	NFKB1,TRPV1,	4790,7442,	CG11992,CG5842,

SEW2871	S1PR1,	1901,	CG12796,
shikonin	NFKB1,FGFR4,	4790,2264,	CG11992,CG7223,
siderophore	VDAC1,	7416,	CG17137,
Sildenafil	PLXNA3,PDE4A,CYP3A5,CYP3A4,	55558,5141,1577,1576,	CG11081,CG14940,CG2060,CG2060,
silvestrol	POLD1,CDC2,	5424,983,	CG5949,CG8203,
silybin	NFKB1,CYP3A4,UGT1A1,UBE2L3,CCNB1,CDK2,PSMD9,	4790,1576,54658,7332,891,1017,5715,	CG11992,CG2060,CG4772,CG5788,CG5940,CG8203,CG9588,
Sincalide	CCKAR,	886,	CG6881,
Sizofiran	TAOK2,	9344,	CG14217,
SK-7041	CCNB1,	891,	CG5940,
SK&F 106528	SFRS1,	6426,	CG6987,
SM 7368	NFKB1,	4790,	CG11992,
Sodium pentosan poly sulfate	SERPINC1,	462,	CG8137,
Sodium Salicylate	NFKB1,	4790,	CG11992,
sorafenib	NFKB1,CYP3A4,CCNA2,CCNB1,POLD1,CDC2,PAFAH1B1,PSMD9,	4790,1576,890,891,5424,983,5048,5715,	CG11992,CG2060,CG5940,CG5949,CG8203,CG8440,CG9588,
sorbinil	NFKB1,	4790,	CG11992,
Sorbo	NFKB1,SORD,	4790,6652,	CG11992,CG1982,
Sorbose	SLC2A1,	6513,	CG1086,
spiroglumide	CCKBR,	887,	CG6881,
Spironolactone	NFKB1,	4790,	CG11992,
squamocin	CDC2,PSMD9,	983,5715,	CG8203,CG9588,
SR 144528	CNR1,CNR2,	1268,1269,	CG12796,CG12796,
SR 27897	CCKAR,	886,	CG6881,
SR 48692	SERPINB1,	1992,	CG8137,CG9453,CG9460,
SR 80327A	SERPINC1,	462,	CG8137,
SR 90107A-ORG 31540	SERPINC1,	462,	CG8137,
ST 638	FGFR4,	2264,	CG7223,
stallimycin	UBE2L3,	7332,	CG5788,
Stanozolol	SERPINC1,	462,	CG8137,
staurosporine	SLC2A4,NFKB1,LPAR3,CYP3A4,TXNRD2,CCNB1,POLD1,AURKA,FYN,CDC2,CDK2,PSMD9,ACTR2,	6517,4790,23566,1576,10587,891,5424,6790,2534,983,1017,5715,10097,	CG1086,CG11992,CG12796,CG2060,CG2151,CG5940,CG5949,CG6620,CG7873,CG8203,CG8203,CG9588,CG9901,
Stearin	CD36,	948,	CG7422,
Stereoisomerism	CDK2,	1017,	CG8203,
Steviol	NFKB1,	4790,	CG11992,
Stevioside	NFKB1,	4790,	CG11992,
STIL	OPN4,SERPINC1,	94233,462,	CG4550,CG8137,
stilbene-disulphonate	VDAC1,	7416,	CG17137,
Stilbenes	CYP3A4,	1576,	CG2060,
Stim	SLC2A4,CYP4F3,CYP3A4,CYP3A5,CYP3A7,CCNB1,POLD1,CDC2,ADORA1,ADORA2A,	6517,4051,1576,1577,1551,891,5424,983,134,135,	CG1086,CG2060,CG2060,CG2060,CG2060,CG5940,CG5949,CG8203,CG9753,CG9753,
Streptomycin	VDAC1,	7416,	CG17137,
Styrene	PLXNB1,GSTT1,SERPINC1,	5364,2952,462,	CG11081,CG30005,CG8137,

styrene-methylmethacrylate copolymer	POLD1,CDC2,	5424,983,	CG5949,CG8203,
SU 5416	PSMD9,	5715,	CG9588,
SU 6668	FGFR1,	2260,	CG7223,
SU 9516	TYMS,CCNB1,CDC2,CDK2,	7298,891,983,1017,	CG3181,CG5940,CG8203,CG8203,
suberate	NPR1,	4881,	CG31183,
suberosin	NFKB1,	4790,	CG11992,
succinic semialdehyde	CCKBR,	887,	CG6881,
Sufentanil	CYP3A4,	1576,	CG2060,
Suldox	DHPS,	1725,	CG8005,
sulfadoxine-pyrimethamine	DHPS,	1725,	CG8005,
Sulfamethazine	CYP3A4,	1576,	CG2060,
sulfamethoxazole hydroxylamine	CYP3A4,	1576,	CG2060,
Sulfaphenazole	CYP4F3,CYP3A4,CYP3A5,	4051,1576,1577,	CG2060,CG2060,CG2060,
Sulfasalazine	NFKB1,SLC46A1,	4790,113235,	CG11992,CG8008,
sulfate cellufine	LMAN1,	3998,	CG6822,
sulfate-sulfate	CYP3A7,	1551,	CG2060,
sulfidonitrogen(.)	CYP3A4,DLL1,FGFR3,CAPN3,	1576,28514,2261,825,	CG2060,CG3619,CG7223,CG8107,
Sulfinpyrazone	CYP3A4,UGT1A9,UGT1A7,UGT1A1,CLTB,	1576,54600,54577,54658,1212,	CG2060,CG4772,CG4772,CG4772,CG6948,
sulfo-N-succinimidyl oleate	CD36,	948,	CG7422,
sulfo-succinimidyl-oleate	CD36,	948,	CG7422,
sulfogalactosylglycerolipid	KHDRBS1,	10657,	CG3613,CG5821,
sulfones	TYMS,	7298,	CG3181,
sulfonic acid	SERPINC1,	462,	CG8137,
sulfonyl-phenyl-ethyl	CNR2,	1269,	CG12796,
Sulforafan	NFKB1,CYP3A4,TXNRD1,UGT1A1,CCNB1,	4790,1576,7296,54658,891,	CG11992,CG2060,CG2151,CG4772,CG5940,
Sulindac	NFKB1,FMO3,	4790,2328,	CG11992,CG3006,
sulindac sulfone	NFKB1,	4790,	CG11992,
sultopride	CYP4F3,CYP3A5,	4051,1577,	CG2060,CG2060,
sunitinib	CYP3A4,	1576,	CG2060,
Synthos	CADPS,CSNK2B,	8618,1460,	CG18026,CG8914,
T 0070907	NFKB1,	4790,	CG11992,
T 0901317	CYP3A4,CD36,PSMD9,	1576,948,5715,	CG2060,CG7422,CG9588,
Tacrine	CDK9,	1025,	CG5179,
Tacrolimus	NFKB1,FOXP3,CYP3A5,CYP3A4,UGT2B7,CD36,	4790,50943,1577,1576,7364,948,	CG11992,CG16899,CG2060,CG2060,CG4772,CG7422,
tadalafil	CYP3A4,	1576,	CG2060,
Tamogel	CYP3A4,UBE2L3,PSMD9,	1576,7332,5715,	CG2060,CG5788,CG9588,
Tamoxifen	NFKB1,CYP4F3,CYP3A5,CYP3A4,TXNRD1,UGT1A4,UGT1A3,UBE2L3,TRPV6,CCNA2,CCNB1,POLD1,FGFR4,CD36,PSIP1,SERPINC1,SERPINC3,CDK2,CDC2,PSMD9,	4790,4051,1577,1576,7296,54657,54659,7332,55503,890,891,5424,2264,948,11168,462,6317,1017,983,5715,	CG11992,CG2060,CG2060,CG2060,CG2151,CG4772,CG4772,CG5788,CG5842,CG5940,CG5940,CG5949,CG7223,CG7422,CG7946,CG8137,CG8137,CG9453,CG9460,CG8203,CG8203,CG9588,

tandospirone	CYP3A4,	1576,	CG2060,
Tangeretin	CYP3A4,PSMD9,	1576,5715,	CG2060,CG9588,
tanshinone	NFKB1,CYP3A4,	4790,1576,	CG11992,CG2060,
taurocholic acid	FGFR4,	2264,	CG7223,
Taurodeoxycholic Acid	NFKB1,	4790,	CG11992,
tauroursodeoxycholic acid	UBE2L3,	7332,	CG5788,
tautomycetin	NFKB1,	4790,	CG11992,
TAXOTERE	NFKB1,TAOK2,CYP4F3,CYP3A5,CYP3A4,CCNB1,POLD1,SERPINB3,CDC2,PAFAH1B1,PSMD9,	4790,9344,4051,1577,1576,891,5424,6317,983,5048,5715,	CG11992,CG14217,CG2060,CG2060,CG2060,CG5940,CG5949,CG8137,CG9453,CG9460,CG8203,CG8440,CG9588,
TBDZ	CYP3A5,CYP3A4,CYP4F3,	1577,1576,4051,	CG2060,CG2060,CG2060,
TBHQ	UGT1A4,UGT1A6,UGT1A9,UGT2B7,UGT1A3,	54657,54578,54600,7364,54659,	CG4772,CG4772,CG4772,CG4772,CG4772,
TCAT	ZNF24,	7572,	CG31364,CG6930,
technetium	ONECUT2,	9480,	CG1922,
Tegafur	TAOK2,	9344,	CG14217,
Teleocidin	PSMD12,	5718,	CG1100,
telithromycin	CYP3A4,	1576,	CG2060,
Temazepam	CYP3A4,	1576,	CG2060,
temozolomide	TXNRD2,TXNRD1,POLD1,CDC2,	10587,7296,5424,983,	CG2151,CG2151,CG5949,CG8203,
temsirolimus	CYP3A4,PSMD9,	1576,5715,	CG2060,CG9588,
terbinafine	CYP4F3,CYP3A5,CCNA2,	4051,1577,890,	CG2060,CG2060,CG5940,
terephthalic acid	HDHD1A,	8226,	CG5565,
Terfenadine	CYP3A5,CYP3A4,	1577,1576,	CG2060,CG2060,
teriflunomide	NFKB1,	4790,	CG11992,
terrein	CCNB1,POLD1,CDC2,	891,5424,983,	CG5940,CG5949,CG8203,
territrem A	CYP3A4,	1576,	CG2060,
territrem B	CYP3A5,	1577,	CG2060,
territrem C	CYP3A5,	1577,	CG2060,
tertiapin	FGFR3,	2261,	CG7223,
tetra-mu3-sulfido-tetrairon	ELP3,	55140,	CG15433,
tetrachloroethene	CYP3A4,	1576,	CG2060,
tetradecanoyl-phorbol-acetate	NFKB1,	4790,	CG11992,
Tetrahydrocannabinol	CNR2,CNR1,UBE2L3,TRPV2,CCNA2,ANK1,	1269,1268,7332,51393,890,286,	CG12796,CG12796,CG5788,CG5842,CG5940,CG7462,
tetramethylrhodamine	ACTR2,	10097,	CG9901,
tetramethylsilane	CELSR1,ME2,	9620,4200,	CG11895,CG5889,
tetraphene	CYP3A5,CYP3A7,	1577,1551,	CG2060,CG2060,
Tetraprenol	TBXAS1,TYMS,	6916,7298,	CG2060,CG3181,
tetrasulfanide	NFKB1,	4790,	CG11992,
Thalidomide	NFKB1,	4790,	CG11992,
Thapsigargin	LYZ,NFKB1,PDE1A,CDK2,	4069,4790,5136,1017,	CG1180,CG11992,CG14940,CG8203,
thiamine disulfide	NFKB1,	4790,	CG11992,
thiazole	TRPV1,	7442,	CG5842,
Thiazolidinediones	NFKB1,CYP3A4,TFAM,	4790,1576,7019,5	CG11992,CG2060,CG4

	PSMD9,	715,	217,CG9588,
thioacetamide	ADORA2A,	135,	CG9753,
Thioacetazone	FMO3,FMO1,	2328,2326,	CG3006,CG3006,
thiobenzamide	FMO1,	2326,	CG3006,
thiocoraline	CYP3A4,	1576,	CG2060,
Thiole	NFKB1,CYP4F3,CYP3A5,	4790,4051,1577,	CG11992,CG2060,CG2060,
Thiopental	PLXNB1,NFKB1,	5364,4790,	CG11081,CG11992,
thioredoxin dithiol	NFKB1,TXNRD1,PDHX,	4790,7296,8050,	CG11992,CG2151,CG5261,
thioridazine	CYP3A4,	1576,	CG2060,
Thiostrepton	RPL11,	6135,	CG7726,
thrombin receptor peptide SFLLRNP	TXNRD1,TXNRD2,	7296,10587,	CG2151,CG2151,
thrombin Tokushima	SERPINC1,	462,	CG8137,
Thromboxane A2	LPAR2,TAOK2,HADHB,FGFR3,	9170,9344,3032,2261,	CG12796,CG14217,CG4581,CG7223,
thromboxane B2	TAOK2,SERPINC1,	9344,462,	CG14217,CG8137,
Thyminose	DLD,	1738,	CG7430,
thymol	TRPV3,	162514,	CG5842,
thymoquinone	UBE2L3,	7332,	CG5788,
Thyrotropin	LPAR2,TXNRD2,TXNRD1,ERP29,	9170,10587,7296,10961,	CG12796,CG2151,CG2151,CG7225,
Ticlopidine	CYP3A4,CYP4F3,CYP3A5,SERPINC1,	1576,4051,1577,462,	CG2060,CG2060,CG2060,CG8137,
Tilidine	CYP3A4,	1576,	CG2060,
tipranavir	CYP3A4,	1576,	CG2060,
tirilazad	CYP3A4,	1576,	CG2060,
titanium alloy (TiAl6V4)	ELAVL2,	1993,	CG4396,
TMC-95A	SLC5A7,	60482,	CG7708,
Tmndga	POLD1,CDC2,	5424,983,	CG5949,CG8203,
TMSI	TYMS,	7298,	CG3181,
Tobrex	SMN1,	6606,	CG16725,
tocotrienols	CYP4F2,CYP3A4,UGT1A1,	8529,1576,54658,	CG2060,CG2060,CG4772,
tofisopam	CYP3A4,	1576,	CG2060,
tolrestat	NFKB1,	4790,	CG11992,
Tolterodine	CYP4F3,CYP3A5,	4051,1577,	CG2060,CG2060,
toluene	PLXNB1,CELSR1,STX8,ME2,	5364,9620,9482,4200,	CG11081,CG11895,CG4109,CG5889,
TOLUENE-DITHIOL	ME3,	10873,	CG5889,
topiramate	CYP3A4,UGT2B7,	1576,7364,	CG2060,CG4772,
Topotecan	CYP3A4,TXNRD1,TXNRD2,	1576,7296,10587,	CG2060,CG2151,CG2151,
Toremifene	ECD,SERPINC1,	11319,462,	CG5714,CG8137,
Tosylarginine Methyl Ester	SERPINC1,	462,	CG8137,
Tosyllysine Chloromethyl Ketone	SMAD7,	4092,	CG5201,
Tosylphenylalanyl Chloromethyl Ketone	NFKB1,	4790,	CG11992,
TPN+	UGT1A4,UGT1A3,	54657,54659,	CG4772,CG4772,
Tracer	GSTO2,	119391,	CG6673,
Tramadol	NFKB1,	4790,	CG11992,
trans-resveratrol	NFKB1,SMN1,CYP3A5,CYP4F3,CYP3A4,CDC	4790,6606,1577,4051,1576,983,571	CG11992,CG16725,CG2060,CG2060,CG2060

	2,PSMD9,	5,	,CG8203,CG9588,
trastuzumab	LARP6,ECD,CCNA2,C DK2,PSMD9,	55323,11319,890, 1017,5715,	CG17386,CG5714,CG5 940,CG8203,CG9588,
Trazodone	CYP3A4,	1576,	CG2060,
Tremode	CYP3A4,CYP3A5,	1576,1577,	CG2060,CG2060,
Tremorine	PLXNA2,	5362,	CG11081,
Tretinoin	TXNRD1,	7296,	CG2151,
Triad	WDR92,PRDX6,	116143,9588,	CG14353,CG3083,
Triamcinolone	PLXNA2,	5362,	CG11081,
triazolam	CYP3A4,	1576,	CG2060,
triazoles	CYP3A4,	1576,	CG2060,
tributylstannane	CYP3A5,CYP4F3,	1577,4051,	CG2060,CG2060,
trichostatins	CCNA2,	890,	CG5940,
Triclosan	RCP9,	27297,	CG4875,
triethylamine	TXNRD1,	7296,	CG2151,
Trifluoperazine	UGT1A4,	54657,	CG4772,
trimethylaminocarboxyldihy- droboran	NFKB1,	4790,	CG11992,
trioctyl phosphine oxide	UBE2L3,	7332,	CG5788,
Triolein	PQBP1,	10084,	CG11820,
tripterine	NFKB1,PSMD9,	4790,5715,	CG11992,CG9588,
triptolide	NFKB1,CYP3A4,	4790,1576,	CG11992,CG2060,
triterpenoids	NFKB1,PDE4A,	4790,5141,	CG11992,CG14940,
troglitazone	SLC2A1,NFKB1,CYP3 A5,CYP3A7,CYP3A4,U GT1A6,POLD1,CD36, DLD,CDC2,CDK2,PSM D9,	6513,4790,1577,1 551,1576,54578,5 424,948,1738,983, 1017,5715,	CG1086,CG11992,CG2 060,CG2060,CG2060, CG4772,CG5949,CG74 22,CG7430,CG8203,C G8203,CG9588,
Troleandomycin	CYP3A7,CYP4F3,CYP3 A5,CYP3A4,	1551,4051,1577,1 576,	CG2060,CG2060,CG20 60,CG2060,
TTNPB	UGT2B15,	7366,	CG4772,
tubocapsanolide A	PSMD9,	5715,	CG9588,
Tunicamycin	SLC2A1,CCNA2,	6513,890,	CG1086,CG5940,
tyrphostin AG 1478	S1PR3,GBF1,PSMD9,	1903,8729,5715,	CG12796,CG8487,CG9 588,
tyrphostin AG-490	FOXP3,	50943,	CG16899,
tyrphostin AG17	CDK2,	1017,	CG8203,
U 0126	SLC2A5,NFKB1,SMN1 ,SMAD6,CCNA2,AURK A,CDK2,	6518,4790,6606,4 091,890,6790,101 7,	CG1086,CG11992,CG1 6725,CG5201,CG5940 ,CG6620,CG8203,
Ubizol	CYP3A4,FGFR3,	1576,2261,	CG2060,CG7223,
Ufur	TYMS,	7298,	CG3181,
UK 157147	UGT1A1,	54658,	CG4772,
Uprima	FGFR3,	2261,	CG7223,
Uran	RBM5,	10181,	CG4887,
uranyl acetate	NFKB1,	4790,	CG11992,
urethane	ELAC1,	55520,	CG3298,
Urex	UGT1A1,FGFR3,	54658,2261,	CG4772,CG7223,
urinastatin	SERPINC1,	462,	CG8137,
Urso	CYP3A4,ME2,ME1,ME 3,	1576,4200,4199,1 0873,	CG2060,CG5889,CG58 89,CG5889,
USAN	NFKB1,GSR,UGT2B7, SERPINB3,CDK2,	4790,2936,7364,6 317,1017,	CG11992,CG2151,CG4 772,CG8137,CG9453, CG9460,CG8203,
valerenic acid	NFKB1,	4790,	CG11992,

valsopodar	CYP3A4,	1576,	CG2060,
venlafaxine	CYP3A4,	1576,	CG2060,
Verapamil	CYP3A5,CYP3A4,ME1, GPR177,FGFR3,DHPS,	1577,1576,4199,7 9971,2261,1725,	CG2060,CG2060,CG58 89,CG6210,CG7223,C G8005,
verlukast	GPR177,	79971,	CG6210,
vesnarinone	CYP3A4,	1576,	CG2060,
Viagra	SMN1,	6606,	CG16725,
Vigil	CYP3A5,CYP3A4,	1577,1576,	CG2060,CG2060,
vincristine	CYP4F3,CYP3A5,CYP3 A4,CCNB1,GPR177,	4051,1577,1576,8 91,79971,	CG2060,CG2060,CG20 60,CG5940,CG6210,
vinflunine	CYP4F3,CYP3A5,COX 7A2L,	4051,1577,9167,	CG2060,CG2060,CG96 03,
vinorelbine	CYP4F3,CYP3A5,TYM S,	4051,1577,7298,	CG2060,CG2060,CG31 81,
vinpocetine	PDE1C,	5137,	CG14940,
violacein	PSMD9,	5715,	CG9588,
Vira-A	NFKB1,LPAR2,PDE4A, FOXP3,DLL1,TRPV1,S FRS1,FGFR3,ADORA2 A,ADORA1,ACTR2,	4790,9170,5141,5 0943,28514,7442, 6426,2261,135,13 4,10097,	CG11992,CG12796,CG 14940,CG16899,CG36 19,CG5842,CG6987,C G7223,CG9753,CG975 3,CG9901,
voriconazole	CYP3A4,FMO3,FMO1,	1576,2328,2326,	CG2060,CG3006,CG30 06,
vorozole	SERPINB1,	1992,	CG8137,CG9453,CG94 60,
VX680	AURKA,	6790,	CG6620,
Warfarin	CYP4F2,CYP4F3,CYP3 A4,CYP3A5,SERPINC1 ,	8529,4051,1576,1 577,462,	CG2060,CG2060,CG20 60,CG2060,CG8137,
WAY-169916	NFKB1,	4790,	CG11992,
Win 55212-2	SLC2A4,CNR2,CNR1,	6517,1269,1268,	CG1086,CG12796,CG1 2796,
withaferin A	NFKB1,	4790,	CG11992,
WLN: QR BG	C9orf5,	23731,	CG2698,
WLN: RVR	EXOSC1,	51013,	CG6249,
WLN: ZSWR	CCNA2,	890,	CG5940,
xanthohumol	CYP3A4,UGT1A3,UGT 1A4,	1576,54659,54657 ,	CG2060,CG4772,CG47 72,
Xaxa	NFKB1,UGT1A6,CDK9 ,FGFR3,CD36,SERPIN C1,	4790,54578,1025, 2261,948,462,	CG11992,CG4772,CG5 179,CG7223,CG7422, CG8137,
Xylit	TXNRD1,	7296,	CG2151,
Y 27632	SMN1,	6606,	CG16725,
yristate	NFKB1,CD226,RPL10, TXNRD1,SLC25A21,S AG,ECD,UBE2L3,TRP V4,CCNA2,HNRNPH3, FGFR1,CD36,FGR,MA PK8IP3,SERPINB10,C DK2,SMARCA1,ADOR A2A,	4790,10666,6134, 7296,89874,6295, 11319,7332,59341 ,890,3189,2260,94 8,2268,23162,527 3,1017,6594,135,	CG11992,CG13162,CG 17521,CG2151,CG525 4,CG5711,CG5714,CG 5788,CG5842,CG5940 ,CG6946,CG7223,CG7 422,CG7873,CG8110, CG8137,CG9453,CG94 60,CG8203,CG8625,C G9753,
Z 338	UGT1A9,UGT1A1,	54600,54658,	CG4772,CG4772,
zafirlukast	CYP3A4,	1576,	CG2060,
Zalcitabine	TFAM,	7019,	CG4217,
zardaverine	PDE4A,	5141,	CG14940,

ZD 9331	TYMS,	7298,	CG3181,
Zearalenone	CYP3A4,	1576,	CG2060,
Zeldox	CYP3A4,	1576,	CG2060,
zerumbone	POLD1,CD36,CDC2,	5424,948,983,	CG5949,CG7422,CG8203,
Zidovudine	UGT2B7,UGT1A9,GPR177,FGFR4,	7364,54600,79971,2264,	CG4772,CG4772,CG6210,CG7223,
zileuton	CYP4F3,CYP3A5,	4051,1577,	CG2060,CG2060,
Zocor	NFKB1,S1PR3,CYP3A5,CYP3A4,CD36,FYN,SER-PINC1,CDK2,PSMD9,	4790,1903,1577,1576,948,2534,462,1017,5715,	CG11992,CG12796,CG2060,CG2060,CG7422,CG7873,CG8137,CG8203,CG9588,
zopiclone	CYP3A4,	1576,	CG2060,
Zymosan	RFC1,NAP1L1,FGR,N DUFAB1,	5981,4673,2268,4706,	CG1119,CG5330,CG7873,CG9160,
Trospium chloride	CYP3A4	1576	CG2060,
Valproic Acid	PLXNB1,CYP3A4,SMN2,NFKB1,TYMS,SMN1,SLC2A4,SLC2A1,GSR,CYP3A4,CYP3A4,CYP3A4,CYP4B1,	5364,1576,6607,4790,7298,6606,6517,6513,2936,1576,1576,1576,1580	CG11081,CG2060,CG16725,CG11992,CG3181,CG16725,CG1086,CG1086,CG2151,CG2060,CG2060,CG2060,CG2060,

The inventive pharmaceutical compounds suitable for the treatment of pain are also known by the following synonyms, trade names and CAS designations:

(1S,2S)-2-(2-(N-((3-benzimidazol-2-yl)propyl)-N-methylamino)ethyl)-6-fluoro-1,2,3,4-tetrahydro-1-isopropyl-2-naphthyl cyclopropanecarboxylate dihydrochloride, (1S,2S)-2-(2-(N-((3-benzimidazol-2-yl)propyl)-N-methylamino)ethyl)-6-fluoro-1,2,3,4-tetrahydro-1-isopropyl-2-naphthyl cyclopropanecarboxylate dihydrochloride, NNC 55-0396;

(5-(2-methoxy-5-chloro-5-phenyl)furan-2-ylcarbonyl)guanidine, (5-(2-methoxy-5-chloro-5-phenyl)furan-2-ylcarbonyl)guanidine, (5-(2-methoxy-5-chlorophenyl)furan-2-ylcarbonyl)guanidine, KR-32570;

(6S)-5,6,7,8-tetrahydrofolic acid, (6S)-5,6,7,8-TETRAHYDROFOLATE, (6S)-5,6,7,8-tetrahydrofolic acid, (6S)-5,6,7,8-tetrahydropteroylglutamate;

(T,G)-A-L, (2S)-2-amino-3-(4-hydroxyphenyl)propanoic acid; (2S)-2-aminopentanedioic acid; (2S)-2-aminopropanoic acid; (2S)-2,6-diaminohexanoic acid, (2S)-2-aminoglutaric acid; (2S)-2-amino-3-(4-hydroxyphenyl)propionic acid; (2S)-2-aminopropionic acid; (2S)-2,6-diaminohexanoic acid, (L-Tyrosine-L-glutamic acid)-poly(DL-alanine)-poly(L-lysine);

1 alpha-hydroxyergocalciferol, 1 alpha-hydroxyergocalciferol, 1alpha(OH)2D2, 1alpha-hydroxyvitamin D2;
1-(1-cyclohexylethylamino)-4-phenylphthalazine, 1-(1-cyclohexylethylamino)-4-phenylphthalazine, MKC 963, MKC-963;
1-(2-methyl-4-methoxyphenyl)-4-((2-hydroxyethyl)amino)-6-trifluoromethoxy-2,3-dihydropyrrolo(3,2-c)quinoline, 1-(2-methyl-4-methoxyphenyl)-4-((2-hydroxyethyl)amino)-6-trifluoromethoxy-2,3-dihydropyrrolo(3,2-c)quinoline, 1-(4-methoxy-2-methylphenyl)-4-((2-hydroxyethyl)amino)-6-trifluoromethoxy-2,3-dihydropyrrolo(3,2-c)quinoline, KR 60436;
1-(2,3-dichlorobenzoyl)-5-methoxy-2-methyl-(2-(mopholin-4-yl)ethyl)-1H-indole, 1-(2,3-dichlorobenzoyl)-5-methoxy-2-methyl-(2-(mopholin-4-yl)ethyl)-1H-indole, GW405833;
1-(2,3-dihydro-1,4-benzodioxin-5-yl)-4-((5-(4-fluorophenyl)-3-pyridinyl)methyl)piperazine, 1-(2,3-dihydro-1,4-benzodioxin-5-yl)-4-((5-(4-fluorophenyl)-3-pyridinyl)methyl)piperazine, SLV 313, SLV-313;
1-(6-((3-methoxyestra-1,3,5(10)-trien-17-yl)amino)hexyl)-1H-pyrrole-2,5-dione, 1-(6-((3-methoxyestra-1,3,5(10)-trien-17-yl)amino)hexyl)-1H-pyrrole-2,5-dione, U 73122, U-73,122;
1-adamantyl propargyl ether, 1-adamantyl propargyl ether, 1APE;
1-aminobenzotriazole, 1-aminobenzotriazole;
1-aminooxy-3-aminopropane, 1-aminooxy-3-aminopropane;
1-hydrazino-4-(3,5-dimethyl)-1-pyrazolyl-5H-pyridazino(4,5-b)indole, 1-hydrazino-4-(3,5-dimethyl)-1-pyrazolyl-5H-pyridazino(4,5-b)indole;
1-hydroxymethylmidazolam, 1-hydroxymethylmidazolam;
1-hydroxypyrene, 1-hydroxypyrene, 1-pyrenol;
1-Methyl-4-phenylpyridinium, 1 Methyl 4 phenylpyridine, 1 Methyl 4 phenylpyridinium, 1 Methyl 4 phenylpyridinium Chloride;
1-Nitropyren-8-ol, 1-Nitro-8-hydroxypyrene, 1-Nitropyren-8-ol, 1-Nitropyrene-8-ol;
1-phosphatidyl-1D-myo-inositol 3-phosphates, 1,2-Diacyl-sn-glycero-3-phospho-(1'-myo-inositol-3'-phosphate), 1-O-(3-sn-phosphatidyl)-1D-myo-inositol 3-(dihydrogen phosphate), 1-Phosphatidyl-1D-myo-inositol 3-phosphate;
1-stearoyl-2-oleoyl-sn-glycero-3-phosphocholine, 1-SOPC, 1-stearoyl-2-oleoyl lecithin, 1-stearoyl-2-oleoyl-sn-3-glycerophosphocholine;
1,1-bis(3'-indolyl)-1-(4-t-butylphenyl)methane, 1,1-bis(3'-

indolyl)-1-(4-*t*-butylphenyl)methane, 1,1-bis(3'-indolyl)-1-(*p*-*t*-butylphenyl)methane, DIM-C-*p*PhtBu;
1,1-dimethylbutyl-1-deoxy-Delta(9)-THC, 1,1-dimethylbutyl-1-deoxy-Delta(9)-THC, JWH-133, JWH1333;
1,1,1-trichloro-2-(4-hydroxyphenyl)-2-(4-methoxyphenyl)ethane, 1,1,1-trichloro-2-(4-hydroxyphenyl)-2-(4-methoxyphenyl)ethane, mono-OH-M;
1,2-bis(diphenylphosphino)ethane, 1,2-bis(diphenylphosphino)ethane, bis(diphenylphosphine)ethane, C(CP(c1ccccc1)c2ccccc2)P(c3ccccc3)c4ccccc4;
1,2-di-(4-sulfamidophenyl)-4-butylpyrazolidine-3,5-dione, 1,2-di-(4-sulfamidophenyl)-4-butylpyrazolidine-3,5-dione;
1,2-diacyl-*sn*-glycero-3-phosphocholines, (3-*sn*-phosphatidyl)choline, 1,2-diacyl-*sn*-glycero-3-phosphocholine, 1,2-diacyl-*sn*-glycero-3-phosphocholines;
1,2-ethanedithiol, 1,2-ethanedithiol, 2-mercaptoethanol disulfide, BisEDT;
1,2-oleoylphosphatidylcholine, 1,2-dioleoyl glycerophosphocholine, 1,2-dioleoyl-*sn*-glycerol-3-ethylphosphocholine, 1,2-dioleoylglycerophosphocholine;
1,2,4-triazines, 1,2,4-triazines;
1,25-dihydroxy-21-(3-hydroxy-3-methylbutyl)-23-yne-26,27-hexafluorocholecalciferol, 1,25-dihydroxy-21-(3-hydroxy-3-methylbutyl)-23-yne-26,27-hexafluorocholecalciferol, 1 α ,25-dihydroxy-20S-21-(3-hydroxy-3-methylbutyl)-23-yne-26,27-hexafluorocholecalciferol, Ro 438-2582;
1,25-dihydroxyergocalciferol, 1 α ,25-dihydroxyvitamin D2, 1,25-(OH)2D2, 1,25-dihydroxyergocalciferol;
1,25D3, (1 α ,3 β ,5Z,7E)-9,10-secocholesta-5,7,10(19)-triene-1,3,25-triol, (1R,3S)-5-{2-[(1R,3aS,7aR)-1-((R)-5-Hydroxy-1,5-dimethyl-hexyl)-7a-methyl-octahydro-inden-4-ylidene]-ethylidene}-4-methylene-cyclohexane-1,3-diol, (1R,3S,5Z)-5-[(2E)-2-[(1R,3aS,7aR)-1-[(1R)-5-hydroxy-1,5-dimethyl-hexyl]-7a-methyl-2,3,3a,5,6,7-hexahydro-1H-inden-4-ylidene]ethylidene]-4-methylene-cyclohexane-1,3-diol;
1,3-Dcg, (2-hydroxy-3-octanoyloxy-propyl) octanoate, (2-hydroxy-3-octanoyloxypropyl) octanoate, 1,3-Dcg;
1,3-dihydroxy-4,4,5,5-tetramethyl-2-(4-carboxyphenyl)tetrahydroimidazole, 1,3-dihydroxy-4,4,5,5-tetramethyl-2-(4-carboxyphenyl)tetrahydroimidazole, 1,3-DTCTI,

2-(4-carboxyphenyl)-;
1,3-dipropyl-8-(3-noradamantyl)xanthine, 1,3-dipropyl-8-(3-noradamantyl)xanthine;
1,3,5-trimethylbenzene, 1,3,5-trimethylbenzene, 3,5-dimethyltoluene, Cc1cc(C)cc(C)c1;
1,7-dioxa-2,6-diaza-4,4-dioxide-4,7a-dithia-3H,5H-benzo(cd)pentalene, 1,7-dioxa-2,6-diaza-4,4-dioxide-4,7a-dithia-3H,5H-benzo(cd)pentalene, HEP-IV;
10-deoxymethynolide, 10-deoxymethynolide;
10-propargyl-10-deazaaminopterin, 10-propargyl-10-deazaaminopterin, pralatrexate;
10-undecynoic acid, 10-undecynoic acid;
10,10-bis(4-pyridinylmethyl)-9(10H)-anthracenone, 10,10-bis(4-pyridinylmethyl)-9(10H)-anthracenone, XE 991, anthracenone, XE-991;
11-cis-retinal, (2E,4Z,6E,8E)-3,7-dimethyl-9-(2,6,6-trimethylcyclohex-1-en-1-yl)nona-2,4,6,8-tetraenal, 11-cis-retinal, 11-cis-Retinene;
11-hydroxycannabinol, 11-hydroxycannabinol;
12-Hht, (5E,8E,10E)-12-hydroxyheptadeca-5,8,10-trienoic acid, 12-Hht, 12-hydroxy-5,8,10-heptadecatrienoic acid;
13-Lox, (9E,11E)-13-hydroxyoctadeca-9,11-dienoic acid, 13-Hodd, 13-Hode;
13-oxo-9,11-octadecadienoic acid, 13-oxo-9,11-octadecadienoic acid;
15 hete, (15S)-15-Hydroxy-5,8,11-cis-13-trans-eicosatetraenoate, (15S)-15-Hydroxy-5,8,11-cis-13-trans-icosatetraenoate, (15S,5Z,8Z,11Z,13E)-15-Hydroxyeicosatetraenoic acid;
15-Hydroxy-11 alpha,9 alpha-(epoxymethano)prosta-5,13-dienoic Acid, (15S)-Hydroxy-11 alpha,9 alpha-(epoxymethano)prosta-5Z,13E-dienoic Acid, (15S)hydroxy-9alpha,11alpha-(epoxymethano)prosta-5,13-dienoic acid, 11 alpha,9 alpha-Epoxymethano PGH2;
17-(allylamino)-17-demethoxygeldanamycin, 17-(allylamino)-17-demethoxy-geldanamycin, 17-(allylamino)-17-demethoxygeldanamycin, 17-AAG;
17alpha-ethynylestradiol, 17-Ethinyl-3,17-estradiol, 17-Ethinyl-3,17-oestradiol, 17-Ethinylestradiol;
1843U89, 1843U, 1843U89, 2-(5-(((1,2-dihydro-3-methyl-1-oxobenzo(f)quinazolin-9-yl)methyl)amino)-1-oxo-2-

isoindoliny)glutaric acid;
1D-myo-inositol 1,3,4,5-tetrakisphosphate, 1D-myo-inositol
1,3,4,5-tetrakis(dihydrogen phosphate), 1D-myo-inositol 1,3,4,5-
tetrakisphosphate, D-myo-Inositol 1,3,4,5-tetrakisphosphate;
1H-indole, 1H-indole, 2,3-Benzopyrrole, c1ccc2[nH]ccc2c1;
1H-pyrazole, 1,2-Diazole, 1H-Pyrazol, 1H-pyrazole;
1H-pyrazolo(3,4-b)pyridine, 1H-pyrazolo(3,4-b)pyridine;
2 APB, ()-2-Amino-4-phosphonobutyric acid, ()-AP-4, 2 APB;
2-(1-(3-dimethylaminopropyl)-5-methoxyindol-3-yl)-3-(1H-indol-3-
yl)maleimide, 2-(1-(3-dimethylaminopropyl)-5-methoxyindol-3-yl)-
3-(1H-indol-3-yl)maleimide, Gö6983;
2-(1-methyl-4-piperidinyl)-6-(2-phenylpyrazolo(1,5-a)pyridin-3-
yl)-3(2H)-pyridazinone, 2-(1-methyl-4-piperidinyl)-6-(2-
phenylpyrazolo(1,5-a)pyridin-3-yl)-3(2H)-pyridazinone, FR194921;
2-(2-hydroxyethylsulfanyl)-3-methyl-1,4-naphthoquinone, 2-(2-
hydroxyethylsulfanyl)-3-methyl-1,4-naphthoquinone, CPD 5, CPD-5;
2-(3,4-dimethoxyphenyl)-5-amino-2-isopropylvaleronitrile, 1-
isopropyl-1-N-methylpropylamino-(3,4-
dimethoxyphenyl)acetonitrile, 2-(3,4-dimethoxyphenyl)-5-amino-2-
isopropylvaleronitrile, 2-(3,4-dimethoxyphenyl)-5-amino-2-
isopropylvaleronitrile hydrochloride;
2-(4-amino-3-methylphenyl)-5-fluorobenzothiazole, 2-(4-amino-3-
methylphenyl)-5-fluorobenzothiazole, 2-NMPH-FBzT, 5F-203;
2-(4-morpholinoanilino)-6-cyclohexylaminopurine, 2-(4-
morpholinoanilino)-6-cyclohexylaminopurine, reversine;
2-(4-morpholinyl)-8-phenyl-4H-1-benzopyran-4-one, 2-(4-
morpholinyl)-8-phenyl-4H-1-benzopyran-4-one, LY 294002, LY-
294002;
2-(4-toluidino)-6-naphthalenesulfonic acid, 2,6-TNS, 2-(4-
toluidino)-6-naphthalenesulfonic acid, 2-(4-toluidino)-6-
naphthalenesulfonic acid, monopotassium salt;
2-(cyclohexylmethylidenehydrazino)adenosine, 2-
(cyclohexylmethylidenehydrazino)adenosine, Binodenoson, WRC
0470;
2-AAF, 2-(Acetylamino)fluorene, 2-AAF, 2-Acetamidofluorene;
2-acetylthiomethyl-3-(4-methylbenzoyl)propionic acid, 2-
acetylthiomethyl-3-(4-methylbenzoyl)propionic acid, esonarimod,
KE 298;
2-AG, (5Z,8Z,11Z,14Z)-Eicosatetraenoic acid, 2-hydroxy-1-
(hydroxymethyl)ethyl ester, (5Z,8Z,11Z,14Z)-icosa-5,8,11,14-

tetraenoic acid (2-hydroxy-1-methylol-ethyl) ester,
(5Z,8Z,11Z,14Z)-icosa-5,8,11,14-tetraenoic acid [2-hydroxy-1-(hydroxymethyl)ethyl] ester;
2-amino-1-methyl-6-phenylimidazo(4,5-b)pyridine, 2-amino-1-methyl-6-phenylimidazo(4,5-b)pyridine;
2-amino-3,4-dimethylimidazo(4,5-f)quinoline, 2-amino-3,4-dimethylimidazo(4,5-f)quinoline;
2-aminoethoxydiphenyl borate, 2-aminoethoxydiphenyl borate, 2-APB compound, 2APB;
2-AP, 2-AP, 4H-1,3-Thiazin-2-amine, 5,6-dihydro-, monohydrobromide, 5,6-Dihydro-4H-1,3-thiazin-2-amine hydrobromide;
2-CADO, (2R,3R,4S,5R)-2-(6-amino-2-chloro-9-purinyl)-5-(hydroxymethyl)tetrahydrofuran-3,4-diol, (2R,3R,4S,5R)-2-(6-amino-2-chloro-purin-9-yl)-5-(hydroxymethyl)oxolane-3,4-diol, (2R,3R,4S,5R)-2-(6-amino-2-chloro-purin-9-yl)-5-(hydroxymethyl)tetrahydrofuran-3,4-diol;
2-chloro-5-nitrobenzanilide, 2-chloro-5-nitrobenzanilide, GW9662;
2-cyano-3-hydroxy-N-(4-(trifluoromethyl)phenyl)-2-hepten-6-ynamide, 2-cyano-3-hydroxy-N-(4-(trifluoromethyl)phenyl)-2-hepten-6-ynamide, 2-cyano-3-hydroxy-N-(4--(trifluoromethyl)phenyl)-2-hepten-6-ynoic acid, FK 778;
2-cyanomethylthiopyridine-4-carbonitrile, 2-(cyanomethylsulfanyl)pyridine-4-carbonitrile, 2-(cyanomethylthio)isonicotinonitrile, 2-(cyanomethylthio)pyridine-4-carbonitrile;
2-cyclopentyl-5-(5-isoquinolylsulfonyl)-6-nitro-1H-benzo(D)imidazole, 2-cyclopentyl-5-(5-isoquinolylsulfonyl)-6-nitro-1H-benzo(D)imidazole, compound-1;
2-DG, (2S,4R,5S,6R)-6-(hydroxymethyl)oxane-2,4,5-triol, (2S,4R,5S,6R)-6-(hydroxymethyl)tetrahydropyran-2,4,5-triol, (2S,4R,5S,6R)-6-methyloltetrahydropyran-2,4,5-triol;
2-hydroxy-4-(2,2,3,3,3-pentafluoropropoxy)benzoic acid, 2-hydroxy-4-(2,2,3,3,3-pentafluoropropoxy)benzoic acid, UR 1505, UR-1505;
2-hydroxyamino-1-methyl-6-phenylimidazo(4,5-b)pyridine, 2-hydroxyamino-1-methyl-6-phenylimidazo(4,5-b)pyridine;
2-hydroxyamino-3-methylimidazolo(4,5-f)quinoline, 2-hydroxyamino-3-methylimidazolo(4,5-f)quinoline;
2-ME, (17beta)-2-Methoxyestra-1,3,5(10)-triene-3,17-diol,

(8R,9S,13S,14S,17S)-2-methoxy-13-methyl-6,7,8,9,11,12,14,15,16,17-decahydrocyclopenta[a]phenanthrene-3,17-diol, 1,3,5(10)-ESTRATRIEN-2,3,17-BETA-TRIOL 2-METHYL ETHER;

2-methoxyacetic acid [2-[2-[3-(1H-benzoimidazol-2-yl)propyl-methyl-amino]ethyl]-6-fluoro-1-isopropyl-tetralin-2-yl] ester, 2-methoxyacetic acid [2-[2-[3-(1H-benzoimidazol-2-yl)propyl-methyl-amino]ethyl]-6-fluoro-1-isopropyl-tetralin-2-yl] ester, d020748, mibefradil;

2-methyl-1-((4-methyl-5-isoquinoliny) sulfonyl)homopiperazine, 2-methyl-1-((4-methyl-5-isoquinoliny) sulfonyl)homopiperazine, dimethylfasudil, H 1152;

2-N-(4-(1-azitrifluoroethyl)benzoyl)-1,3-bis-(mannos-4-yloxy)-2-propylamine, 2-N-(4-(1-azitrifluoroethyl)benzoyl)-1,3-bis-(mannos-4-yloxy)-2-propylamine, 2-N-4-(1-azi-2,2,2-trifluoroethyl)benzoyl-1,3-bis(D-mannos-4-yloxy)-2-propylamine, ATB-BMPA;

2-Naftol, .beta.-Hydroxynaphthalene, .beta.-Monoxynaphthalene, .beta.-Naftol;

2-oxothiazolidine-4-carboxylic acid, 2-oxo-4-thiazolidine carboxylic acid, 2-oxothiazolidine-4-carboxylate, 2-oxothiazolidine-4-carboxylic acid;

2-phenyl-4-oxohydroquinoline, 2-phenyl-4-oxohydroquinoline;

2,2,2-trichloroethane-1,1-diol, 1,1,1-trichloro-2,2-dihydroxyethane, 1,1,1-trichloro-2,2-ethanediol, 2,2,2-trichloro-1,1-ethanediol;

2,2'-(hydroxynitrosohydrazono)bis-ethanamine, 1-(N-(2-aminoethyl)-N-(2-ammonioethyl)amino)diazen-1-ium-1,2-diolate, 2,2'-(hydroxynitrosohydrazono)bis-ethanamine, DETA NONOate;

2,2'-azobis(2,4-dimethylvaleronitrile), 2,2'-azobis(2,4-dimethylvaleronitrile), 2,2'-azobis(2,4-dimethylvaleronitrile), ABDVN-2,2';

2,2'-bipyridine, 2,2'-Bipyridin, 2,2'-bipyridine, 2,2'-bipyridyl;

2,2',4,4'-tetrachlorobiphenyl, 1,1'-Biphenyl, 2,2',4,4'-tetrachloro-, 2,2',4,4'-tetrachloro-1,1'-biphenyl, 2,2',4,4'-tetrachlorobiphenyl;

2,3-bis(3'-hydroxybenzyl)butane-1,4-diol, 2,3-BHBB, 2,3-bis(3'-hydroxybenzyl)butane-1,4-diol, 2,3-bis(3-hydroxybenzyl)butane-1,4-diol;

2,3-dihydroxyterephthalamide, 2,3-DHPA, 2,3-dihydroxyterephthalamide;
2,3,4-tri-O-acetylarabinopyranosyl isothiocyanate, 2,3,4-tri-O-acetylarabinopyranosyl isothiocyanate;
2,4-diaminoquinazoline, 2,4-diaminoquinazoline;
2,4-thiazolidinedione, 2,4-thiazolidinedione, thiazolidinedione;
21-hydroxy-9beta,10alpha-pregna-5,7-diene-3-ol-20-one, 21-hydroxy-9beta,10alpha-pregna-5,7-diene-3-ol-20-one;
25-desacetylrifabutin, 25-desacetylrifabutin, LM 565, LM-565;
25-Hydroxycholesterol, (3BETA)-CHOLEST-5-ENE-3,25-DIOL, (3S,8S,9S,10R,13R,14S,17R)-17-[(1R)-5-hydroxy-1,5-dimethylhexyl]-10,13-dimethyl-2,3,4,7,8,9,11,12,14,15,16,17-dodecahydro-1H-cyclopenta[a]phenanthren-3-ol, (3S,8S,9S,10R,13R,14S,17R)-17-[(1R)-5-hydroxy-1,5-dimethylhexyl]-10,13-dimethyl-2,3,4,7,8,9,11,12,14,15,16,17-dodecahydro-1H-cyclopenta[a]phenanthren-3-ol;
25(OH)D3, (1S,3Z)-3-[(2E)-2-[(1R,3aS,7aR)-1-[(1R)-5-hydroxy-1,5-dimethylhexyl]-7a-methyl-2,3,3a,5,6,7-hexahydro-1H-inden-4-ylidene]ethylidene]-4-methylene-cyclohexan-1-ol, (1S,3Z)-3-[(2E)-2-[(1R,3aS,7aR)-1-[(1R)-5-hydroxy-1,5-dimethylhexyl]-7a-methyl-2,3,3a,5,6,7-hexahydro-1H-inden-4-ylidene]ethylidene]-4-methylene-1-cyclohexanol, (1S,3Z)-3-[(2E)-2-[(1R,3aS,7aR)-1-[(2R)-6-hydroxy-6-methylheptan-2-yl]-7a-methyl-2,3,3a,5,6,7-hexahydro-1H-inden-4-ylidene]ethylidene]-4-methylidene-cyclohexan-1-ol;
3-((4-(4-chlorophenyl)piperazin-1-yl)methyl)-1H-pyrrolo(2,3-b)pyridine, 3-((4-(4-chlorophenyl)piperazin-1-yl)methyl)-1H-pyrrolo(2,3-b)pyridine, CPMPP-3, L 745,870;
3-(2-hydroxy-4-(1,1-dimethylheptyl)phenyl)-4-(3-hydroxypropyl)cyclohexanol, 3-(2-hydroxy-4-(1,1-dimethylheptyl)phenyl)-4-(3-hydroxypropyl)cyclohexanol, CP 55940, CP 56667;
3-(2h)-pyridazinone, 2H-pyridazin-3-one, 3 (2H)-Pyridazinone, 3(2H)-Pyridazinone;
3-(cyclopentyloxy)-N-(3,5-dichloro-4-pyridyl)-4-methoxybenzamide, 3-(cyclopentyloxy)-N-(3,5-dichloro-4-pyridyl)-4-methoxybenzamide, 3-cyclopentyloxy-N-(3,5-dichloro-4-pyridyl)-4-methoxybenzamide, CPODPMB;
3-aminopyrazole, 3-aminopyrazole, 3-APzl;
3-beta-(2-(diethylamino)ethoxy)androst-5-en-17-one, 3-beta-(2-

(diethylamino)ethoxy)androst-5-en-17-one, 3beta-(2-diethylaminoethoxy)-androst-5-en-17-one hydrochloride, U 18,666A;

3-BHA, 2(3)-tert-Butyl-4-hydroxyanisole, 2-(1,1-Dimethylethyl)-4-methoxy-phenol, 2-Butyl-4-hydroxyanisole;

3-hydroxybutanal, 3-hydroxybutanal, 3-hydroxybutyraldehyde, acetaldo;

3-hydroxyflunitrazepam, 3-hydroxyflunitrazepam;

3-Hydroxyquinine, (3S,4R,6R)-6-[(S)-hydroxy-(6-methoxy-4-quinolyl)methyl]-3-vinyl-3-quinuclidinol, (3S,4R,6R)-6-[(S)-hydroxy-(6-methoxy-4-quinolyl)methyl]-3-vinyl-quinuclidin-3-ol, (4R,5S,7R)-5-ethenyl-7-[(S)-hydroxy-(6-methoxyquinolin-4-yl)methyl]-1-azabicyclo[2.2.2]octan-5-ol;

3-isobutyl-1-methyl-Xanthine, 3-isobutyl-1-methyl-Xanthine;

3-keto-desogestrel, 13-ethyl-17-hydroxy-11-methylene-18,19-dinor-17alpha-pregn-4-en-20-yn-3-one, 3-keto-desogestrel, 3-ketodesogestrel;

3-methoxy-4-aminoazobenzene, 3-methoxy-4-aminoazobenzene;

3-Methoxymorphinan, 3-Methoxymorphinan, Morphinan, 3-methoxy-; 3-Methoxyoestradiol, (17-beta)-3-Methoxyestra-1,3,5(10)-trien-17-ol, (17S)-3-methoxy-13-methyl-6,7,8,9,11,12,14,15,16,17-decahydrocyclopenta[a]phenanthren-17-ol, 17-beta-Estradiol 3-methyl ether;

3-methylcholanthrene, 1,2-Dihydro-3-methylbenz(j)aceanthrylene, 20-MC, 20-Methylcholanthrene;

3-MI, .beta.-Methylindole, 1H-Indole, 3-methyl-, 3-methyl-1H-indole;

3,3',4,5'-tetrahydroxystilbene, 3'-hydroxyresveratol, 3,3',4',5'-tetrahydroxystilbene, 3,3',4,5'-tetrahydroxy stilbene;

3,4-DCI, 1H-2-Benzopyran-1-one, 3,4-dichloro-, 3,4-DCI, 3,4-Dcl; 3,4,5-trihydroxybenzamidoxime, 3,4,5-trihydroxybenzamidoxime, trimidox, VF 233;

4-(3-3,4-p-menthadien-(1,8)-yl)olivetol, 4-(3-3,4-p-menthadien-(1,8)-yl)olivetol, abn-cbd, abnormal cannabidiol;

4-(3-Butoxy-4-methoxybenzyl)-2-imidazolidinone, 4-(3-Butoxy-4-methoxybenzyl)-2-imidazolidinone, Ro 1724, Ro 20 1724;

4-(4-(4-chlorophenyl)-4-hydroxy-1-piperidinyl)-1-(4-fluorophenyl)-1-butanol, 4-(4-(4-chlorophenyl)-4-hydroxy-1-piperidinyl)-1-(4-fluorophenyl)-1-butanol, hydroxyhaloperidol, reduced haloperidol;

4-(4-(N-benzoylamino)anilino)-6-methoxy-7-(3-(1-morpholino)propoxy)quinazoline, 4-(4-(N-benzoylamino)anilino)-6-methoxy-7-(3-(1-morpholino)propoxy)quinazoline, ZM 447439, ZM-447439;

4-(4-fluorophenyl)-2-(4-hydroxyphenyl)-5-(4-pyridyl)imidazole, 4-(4-fluorophenyl)-2-(4-hydroxyphenyl)-5-(4-pyridyl)imidazole, SB 202190, SB-202190;

4-(5-benzo(1,3)dioxol-5-yl-4-pyridin-2-yl-1H-imidazol-2-yl)benzamide, 4-(5-benzo(1,3)dioxol-5-yl-4-pyridin-2-yl-1H-imidazol-2-yl)benzamide, SB 431542, SB-431542;

4-(benzodioxan-5-yl)-1-(indan-2-yl)piperazine, 4-(benzodioxan-5-yl)-1-(indan-2-yl)piperazine, S 15535, S-15535;

4-(N-methyl-N-nitrosamino)-1-(3-pyridyl)-1-butanone, 4-(N-methyl-N-nitrosamino)-1-(3-pyridyl)-1-butanone;

4-AP, .gamma.-Aminopyridine, 4-Aminopyridine, 4-Aminopyridine 10;

4-azidosalicylic acid, 4-AzHBA, 4-azido-2-hydroxybenzoic acid, 4-azidosalicylic acid;

4-dimethylamino-3',4'-dimethoxychalcone, 4-dimethylamino-3',4'-dimethoxychalcone, CH 11;

4-hydroxy-N-desmethyltamoxifen, 4-hydroxy-N-demethyltamoxifen, 4-hydroxy-N-desmethyltamoxifen, 4-hydroxy-N-desmethyltamoxifen, (Z)-isomer;

4-hydroxyacetophenone, 1-(4-hydroxyphenyl)ethanone, 4-hydroxyacetophenone, p-hydroxyacetophenone;

4-hydroxycoumarin, 4-hydroxycoumarin;

4-hydroxyestradiol-17 beta, 4-hydroxyestradiol, 4-hydroxyestradiol-17 alpha, 4-hydroxyestradiol-17 beta;

4-hydroxynon-2-enal, 4-Hydroxy-2,3-nonenal, 4-Hydroxy-2-nonenal, 4-hydroxynon-2-enal;

4-hydroxytriazolam, 4-hydroxytriazolam;

4-methyl-N-(3-(4-methylimidazol-1-yl)-5-(trifluoromethyl)phenyl)-3-((4-pyridin-3-ylpyrimidin-2-yl)amino)benzamide, 4-methyl-N-(3-(4-methylimidazol-1-yl)-5-(trifluoromethyl)phenyl)-3-((4-pyridin-3-ylpyrimidin-2-yl)amino)benzamide, AMN107, nilotinib;

4-phenylbutyric acid, 4-phenylbutyrate, 4-phenylbutyric acid, 4-phenylbutyric acid, calcium salt;

4-S-cysteaminyphenol, 4-S-cysteaminyphenol;

4-sulfophenylmethallyl ether, 4-sulfophenylmethallyl ether, 4-

sulfophenylmethallyl ether, sodium salt, SPME;
4,4'-DDE, 1,1'-(2,2-dichloroethene-1,1-diyl)bis(4-chlorobenzene),
1,1'-(Dichloroethenylidene)bis(4-chlorobenzene), 1,1'-(Dichloroethenylidene)bis[4-chlorobenzene];
4,4'-dipyridyl disulfide, 4,4'-dipyridine disulfide, 4,4'-dipyridyl disulfide, 4,4'-dithiodipyridine;
4,8-dimethoxy-7-hydroxyfuro(2,3-b)quinoline, 4,8-dimethoxy-7-hydroxyfuro(2,3-b)quinoline, haplopin;
4'-epidoxorubicin, (1S,3S)-3,5,12-trihydroxy-3-(hydroxyacetyl)-10-methoxy-6,11-dioxo-1,2,3,4,6,11-hexahydrotetracen-1-yl 3-amino-2,3,6-trideoxy- α -L-arabino-hexopyranoside, 4'-Epiadriamycin, 4'-epidoxorubicin;
4'-N-benzoylstauropine, 4'-N-benzoyl stauropine, 4'-N-benzoylstauropine, benzoylstauropine;
4(2'-aminoethyl)amino-1,8-dimethylimidazo(1,2-a)quinoxaline, 4(2'-aminoethyl)amino-1,8-dimethylimidazo(1,2-a)quinoxaline, BMS-345541, BMS345541;
4 α -phorbol 12,13-didecanone, 4 α -phorbol 12,13-didecanone;
4 α PDD, 4-. α -Phorbol 12,13-didecanoate, 4-. α -Phorbol didecanoate, 4- α -Phorbol 12,13-didecanoate;
5-((1,2-dihydro-2-oxo-3H-indol-3-ylidene)methyl)-2,4-dimethyl-1H-pyrrole-3-propanoic acid, 5-((1,2-dihydro-2-oxo-3H-indol-3-ylidene)methyl)-2,4-dimethyl-1H-pyrrole-3-propanoic acid, TSU 68, TSU-68;
5-(4'-(N-piperidinyl)phenylazo)indazole, 5-(4'-(N-piperidinyl)phenylazo)indazole;
5-7-oxo-zeaenol, 5-7-oxo-zeaenol, 7-oxo-zeaenol;
5-AC, 1,3,5-Triazin-2(1H)-one, 4-amino-1- β -D-ribofuranosyl-, 2-(β -D-Ribofuranosyl)-4-amino-1,3,5-triazin-2-one, 4-Amino-1-(β -D-ribofuranosyl)-1,3,5-triazin-2(1H)-one;
5-acetylneuraminyl-(2-3)-galactosyl-(1-4)-(fucopyranosyl-(1-3))-N-acetylglucosamine, 5-acetylneuraminyl-(2-3)-galactosyl-(1-4)-(fucopyranosyl-(1-3))-N-acetylglucosamine;
5-azido-1H-indole-3-acetic acid, 5-AIAA, 5-azido-(7-3H)-indol-3-ylacetic acid, 5-azido-1H-indole-3-acetic acid;
5-HT, 1H-Indol-5-ol, 3-(2-aminoethyl)-, 3-(2-aminoethyl)-1H-indol-5-ol, 3-(2-Aminoethyl)indol-5-ol;
5-methoxy-N,N-diisopropyltryptamine, 5-MeO-DIPT, 5-methoxy-N,N-

bis(1-methylethyl)-1H-indole-3-ethanamine, 5-methoxy-N,N-diisopropyltryptamine;
5-Mop, 4-methoxy-7-furo[3,2-g]chromenone, 4-Methoxy-7H-furo(3,2-g)(1)benzopyran-7-one, 4-methoxy-7H-furo[3,2-g]chromen-7-one;
5,10-methylenetetrahydrofolate, 5,10-methylene-5,6,7,8-tetrahydrofolate, 5,10-methylenetetrahydrofolate, 5,10-methylenetetrahydrofolate monohydrochloride, (L-Glu)-isomer;
5,6-dimethylxanthenoneacetic acid, 5,6-dimethyl xanthenone acetic acid, 5,6-dimethyl-9-oxo-9H-xanthenone-4-acetic acid, 5,6-dimethylxanthenone-4-acetic acid;
5'-O-(((2-decanoylamino-3-phenylpropyloxycarbonyl)amino)sulfonyl)uridine, 5'-O-(((2-decanoylamino-3-phenylpropyloxycarbonyl)amino)sulfonyl)uridine, PP55;
6 beta-hydroxycortisol, 6 beta-hydroxycortisol, 6beta-hydroxycortisol;
6-Aminochrysene-1,2-dihydrodiol, (1S,2S)-6-amino-1,2-dihydrochrysene-1,2-diol, 1,2-Chrysenediol, 1,2-dihydro-6-amino-, trans-, 6-Aminochrysene-1,2-dihydrodiol;
6-chloro-2-pyridylmethyl nitrate, 6-chloro-2-pyridylmethyl nitrate;
6-deoxy-6-bromoascorbic acid, 6-bromo-6-deoxy-ascorbic acid, 6-bromo-6-deoxy-L-ascorbic acid, 6-bromo-6-deoxyascorbic acid;
6-hydroxydexamethasone, 6-hydroxydexamethasone;
6-Mercaptopurine, 1,7-Dihydro-6H-purine-6-thione, 6 Mercaptopurine, 6 Mercaptopurine Monohydrate;
6,6'-oxybis(2,2-dimethylhexanoic acid), 6,6'-oxybis(2,2-dimethylhexanoic acid), gemcabene, PD 72953;
64Gd, 64Gd, gadolinio, gadolinium;
7-(1,1-dimethylethyl)-6-(2-ethyl-2H-1,2,4-triazol-3-ylmethoxy)-3-(2-fluorophenyl)-1,2,4-triazolo(4,3-b)pyridazine, 7-(1,1-dimethylethyl)-6-(2-ethyl-2H-1,2,4-triazol-3-ylmethoxy)-3-(2-fluorophenyl)-1,2,4-triazolo(4,3-b)pyridazine, TPA 023, TPA-023;
7-benzylamino-6-chloro-2-piperazino-4-pyrrolidinopteridine, 7-benzylamino-6-chloro-2-piperazino-4-pyrrolidinopteridine;
7-benzyloxyquinoline, 7-benzyloxyquinoline;
7-CDL, (2S,4R)-N-[2-chloro-1-[(2R,3R,4S,5R,6R)-3,4,5-trihydroxy-6-(methylthio)-2-tetrahydropyranyl]propyl]-1-methyl-4-propyl-2-pyrrolidinecarboxamide, (2S,4R)-N-[2-chloro-1-[(2R,3R,4S,5R,6R)-3,4,5-trihydroxy-6-(methylthio)tetrahydropyran-2-yl]propyl]-1-

methyl-4-propyl-pyrrolidine-2-carboxamide, (2S,4R)-N-[2-chloro-1-[(2R,3R,4S,5R,6R)-3,4,5-trihydroxy-6-methylsulfanyl-oxan-2-yl]propyl]-1-methyl-4-propyl-pyrrolidine-2-carboxamide;
7-hydroxystaurosporine, 7-hydroxy-staurosporine, 7-hydroxystaurosporine, UCN 01;
7-ketocholesterol, 7-ketocholesterol;
7,8-BF, .alpha.-Naphthoflavone, .alpha.-Naphthylflavone, 2-phenyl-4-benzo[h]chromenone;
7,8-dihydroneopterin, 7,8-dihydro-neopterin, 7,8-dihydroneopterin;
7'-Isothiocyanato-11-hydroxy-1',1'-dimethylheptylhexahydrocannabinol, 7'-Isothiocyanato-11-hydroxy-1',1'-dimethylheptylhexahydrocannabinol, AM841;
7C3MT, (2R,3R)-3,5,7-trihydroxy-2-[(2R,3R)-2-(4-hydroxy-3-methoxy-phenyl)-3-(hydroxymethyl)-2,3-dihydro-1,4-benzodioxin-7-yl]chroman-4-one, (2R,3R)-3,5,7-trihydroxy-2-[(2R,3R)-2-(4-hydroxy-3-methoxy-phenyl)-3-methylol-2,3-dihydro-1,4-benzodioxin-7-yl]chroman-4-one, (2R,3R)-3,5,7-trihydroxy-2-[(2R,3R)-2-(4-hydroxy-3-methoxyphenyl)-3-(hydroxymethyl)-2,3-dihydro-1,4-benzodioxin-7-yl]-4-chromanone;
7H-Pyrrolo(2,3-d)pyrimidine, 7H-Pyrrolo(2,3-d)pyrimidine;
8-((4-bromo-2,3-dioxobutyl)thio)-adenosine 3',5'-cyclic monophosphate, 8-((4-bromo-2,3-dioxobutyl)thio)-adenosine 3',5'-cyclic monophosphate;
8-(2,6-dichlorophenyl)-10-methyl-3-((4-morpholin-4-ylphenyl)amino)-2,4,10-triazabicyclo(4.4.0)deca-1,3,5,7-tetraen-9-one, 8-(2,6-dichlorophenyl)-10-methyl-3-((4-morpholin-4-ylphenyl)amino)-2,4,10-triazabicyclo(4.4.0)deca-1,3,5,7-tetraen-9-one, PD0173952;
8-(3-chlorostyryl)caffeine, 8-(3-chlorostyryl)caffeine;
8-anilidonaphthalene-1-sulfonic acid, 1-(phenylamino)-8-naphthalenesulfonic acid, 1-Anilino-8-naphthalenesulfonate, 1-anilino-8-naphthalenesulfonic acid;
8-Hydroxy-2-(di-n-propylamino)tetralin, 8-Hydroxy-2-(di-n-propylamino)tetralin, 8-Hydroxy-2-(di-n-propylamino)tetralin Hydrobromide, 8-Hydroxy-2-(di-n-propylamino)tetralin Hydrobromide, (+-)-Isomer;
8-Isoprostane, (5Z,13E,15S)-9alpha,11alpha,15-trihydroxy-8beta-prosta-5,13-dien-1-oic acid, (Z)-7-[(1S,2R,3R,5S)-3,5-dihydroxy-2-[(E,3S)-3-hydroxyoct-1-enyl]cyclopentyl]hept-5-enoic acid, 8-

Epi PGF-2alpha;
8,10-bis((2,2-dimethyl-1-oxopropyl)oxy)-11-methyl-1234-tetrahydro-6H-benzo(beta)quinolizin-6-one, 8,10-bis((2,2-dimethyl-1-oxopropyl)oxy)-11-methyl-1234-tetrahydro-6H-benzo(beta)quinolizin-6-one, Sch35966;
9-(4'-aminophenyl)-9H-pyrido(3,4-b)indole, 9-(4'-aminophenyl)-9H-pyrido(3,4-b)indole, aminophenylnorharman, APNH cpd;
9-anthroic acid, 9-anthracenecarboxylic acid, 9-anthroic acid, 9-carboxyanthracene;
9-CRA, (2E,4E,6Z,8E)-3,7-dimethyl-9-(2,6,6-trimethyl-1-cyclohexenyl)nona-2,4,6,8-tetraenoic acid, 9 Cis Retinoic Acid, 9-cis-RA;
9-hydroxy-risperidone, 3-(2-(4-(6-fluoro-3-(1,2-benzisoxazolyl))-1-piperidinyl)ethyl)-6,7,8,9-tetrahydro-9-hydroxy-2-methyl-4H-pyrido(1,2-a)pyrimidin-4-one, 9-hydroxy-risperidone, 9-hydroxyrisperidone;
9,10-anthraquinone, 9,10-Anthracendion, 9,10-anthracenedione, 9,10-Anthrachinon;
9H-xanthene, 10H-9-oxaanthracene, 9H-xanthene, C1c2cccccc2Oc3cccccc13;
A 71915, A 71915;
A-300-I, (2E,4E,6R)-7-(4-(dimethylamino)phenyl)-N-hydroxy-4,6-dimethyl-7-oxo-2,4-heptadienamide, (2E,4E,6R)-7-(4-dimethylaminophenyl)-4,6-dimethyl-7-oxo-hepta-2,4-dienehydroxamic acid, (2E,4E,6R)-7-(4-dimethylaminophenyl)-4,6-dimethyl-7-oxohepta-2,4-dienehydroxamic acid;
a-ADP, (S)-1-C-(7-Amino-1H-pyrazolo(4,3-d)pyrimidin-3-yl)-1,4-anhydro-D-ribitol, 5-(trihydrogen diphosphate), 5'-Adenylphosphoric acid, 5'-ADP;
A73025, A73025;
Abbott, 1,2,4-Triazolidine-3,5-dione, 1,2-bis(1-methylethyl)-, 1,2,4-Triazolidine-3,5-dione, 1,2-bis(1-methylethyl)- (9CI), 1,2,4-Triazolidine-3,5-dione, 1,2-diisopropyl-;
abciximab, abciximab, c7E3 Fab, CentoRx;
Absele, (+)-Ethyl 1-(alpha-methylbenzyl)imidazole-5-carboxylate, (+)-Etomidate, (d)-Etomidate;
ABT-737, ABT-737;
acetamide 45, acetamide 45, acetamide-45;
Aceton, .beta.-Ketopropane, 2-Propanone, Aceton;
acetonitrile, acetonitrile, CC#N, CH3-C#N;

acetyl-11-ketoboswellic acid, 3-O-acetyl-11-keto-boswellic acid, acetyl-11-keto-beta-boswellic acid, acetyl-11-ketoboswellic acid;

acetylcholine, 2-acetyloxy-N,N,N-trimethylethanaminium, acetylcholine, ACh;

acetylvalerenolic acid, acetylvalerenolic acid;

Aclarubicin, Aclacin, Aclacinomycin A, Aclaplastin;

Acolen, (4R)-4-[(5S,8R,9S,10S,13R,14S,17R)-10,13-dimethyl-3,7,12-trioxo-1,2,4,5,6,8,9,11,14,15,16,17-

dodecahydrocyclopenta[a]phenanthren-17-yl]pentanoic acid, (4R)-4-[(5S,8R,9S,10S,13R,14S,17R)-3,7,12-triketo-10,13-dimethyl-1,2,4,5,6,8,9,11,14,15,16,17-

dodecahydrocyclopenta[a]phenanthren-17-yl]valeric acid, (5beta)-3,7,12-trioxocholan-24-oic acid;

ACON, (2E,4E,6E,8E)-3,7-dimethyl-9-(2,6,6-trimethyl-1-cyclohexenyl)nona-2,4,6,8-tetraen-1-ol, (2E,4E,6E,8E)-3,7-dimethyl-9-(2,6,6-trimethylcyclohex-1-en-1-yl)nona-2,4,6,8-tetraen-1-ol, (all-E)-3,7-Dimethyl-9-(2,6,6-trimethyl-1-cyclohexen-1-yl)-2,4,6,8-nonatetraen-1-ol;

ACT D, Err:508, 10,10'-[(2-Amino-4,6-dimethyl-3-oxo-3H-phenoxazine-1,9-Diyl)bis(carbonylimino)]bis-[dodecahydro-6,13-diisopropyl-2,5,9-trimethyl-1H-Pyrrolo-(2,1-1)(1,4,7,10,13)oxatetra-azacyclohexadecine]-1,4,7,11,14, 1H-Pyrrolo(2,1-1)-(1,4,7,10,13)oxatetraazacyclohexadecine;

actinium, 89Ac, actinio, actinium;

Actosin, 2-methoxy-2-methyl-4-phenyl-3,4-dihydropyrano[5,6-c]chromen-5-one, 2H,5H-Pyrano(3,2-c)(1)benzopyran-5-one, 3,4-dihydro-2-methoxy-2-methyl-4-phenyl-, 2H,5H-Pyrano[3,2-c][1]benzopyran-5-one, 3,4-dihydro-2-methoxy-2-methyl-4-phenyl-; adalimumab, Abbott brand of adalimumab, adalimumab, D2E7 antibody;

Adalin, (.alpha.-Bromo-.alpha.-ethylbutyryl)carbamide, (.alpha.-Bromo-.alpha.-ethylbutyryl)urea, (2-Brom-2-ethylbutyryl)harnstoff;

Adanon, (+)-Methadone,

(+)-Methadone, (-)-(R)-6-(Dimethylamino)-4,4-diphenyl-3-heptanone;

Adfeed, (-)-(2R)-2-(2-fluorobiphenyl-4-yl)propanoic acid, (-)-Flurbiprofen, (2R)-2-(2-Fluoro-1,1'-biphenyl-4-yl)propanoic acid;

adinazolam, adinazolam;
Adofeed, (C3-C24) Fatty acids, 2-arylpropanoic acid, 2-Arylpropionate;
Adrenor, (−)-Norepinephrine, (-)-(R)-Norepinephrine, (-)-alpha-(Aminomethyl)protocatechuyal alcohol;
Adrin, (+)-3,4-dihydroxy-alpha-((methylamino)methyl)benzyl alcohol, (+)-adrenaline, (-)-Adrenaline;
AEBSF, 4-(2-Aminoethyl)benzenesulfonyl fluoride, 4-(2-Aminoethyl)benzenesulfonylfluoride, 4-beta-Aminoethylbenzolsulfofluoride;
Aeromax, (+-)-4-Hydroxy-alpha'-(((6-(4-phenylbutoxy)hexyl)amino)methyl)-m-xylene-alpha,alpha'-diol, (+)-4-Hydroxy-alpha1-(((6-(4-phenylbutoxy)hexyl)amino)methyl)-1,3-benzenedimethanol, 1,3-Benzenedimethanol, 4-hydroxy-alpha(sup 1)-(((6-(4-phenylbutoxy)hexyl)amino)methyl)-, (+-)-;
afloqualone, afloqualone;
AGMATINE, (4-Aminobutyl) guanidine, (4-AMINOBYTYL) GUANIDINE, (4-Aminobutyl)guanidinium sulphate;
AIDSVAX, AIDSVAX, ALVAC-HIV, vCP1521;
ajoene, 4,5,9-trithiadodeca-1,6,11-triene 9-oxide, ajoene;
ajulemic acid, ajulemic acid;
alachlor, 2-chloro-N-(2,6-diethylphenyl)-N-(methoxymethyl)acetamide,alachlor;
Aladerm, 5-amino-4-keto-valeric acid, 5-amino-4-oxo-pentanoic acid, 5-Amino-4-oxopentanoate;
alaninate, 2-aminopropanoate, alaninate, alanine anion;
Alat, 1,4-Dihydro-2,6-dimethyl-4-(2-nitrophenyl)-3,5-pyridinedicarboxylic acid dimethyl ester, 2,6-Dimethyl-3,5-dicarbomethoxy-4-(2-nitrophenyl)-1,4-dihydropyridine, 2,6-dimethyl-4-(2-nitrophenyl)-1,4-dihydropyridine-3,5-dicarboxylic acid dimethyl ester;
Alcolo, 1-Hydroxy-1-methylethyl, 1-Methylethanol, 1-Methylethyl alcohol;
Alcuronium, Alcuronium, Alcuronium Chloride, Alcuronium Dichloride;
Aldara, (1-isobutylimidazo[4,5-c]quinolin-4-yl)amine, 1-(2-Methylpropyl)-1H-imidazole[4,5-c]quinoline-4-amine, 1-(2-methylpropyl)-1H-imidazo[4,5-c]quinolin-4-amine;
ALDO, .gamma.-[4-(p-Chlorphenyl)-4-hydroxypiperidino]-p-fluorbutyrophenone, 1-(3-p-Fluorobenzoylpropyl)-4-p-

chlorophenyl-4-hydroxypiperidine, 1-Butanone, 4-(4-(4-chlorophenyl)-4-hydroxy-1-piperidinyl)-1-(4-fluorophenyl)-; Aldrich, 1,3-di-O-methylpyrogallol, 1,3-dimethoxy-2-hydroxybenzene, 1,3-dimethyl pyrogallate; alemtuzumab, alemtuzumab, Berlex brand of alemtuzumab, Campath; Alfarol, (1S,3R,5Z)-5-[(2E)-2-[(1R,7aR)-1-[(1R)-1,5-dimethylhexyl]-7a-methyl-2,3,3a,5,6,7-hexahydro-1H-inden-4-ylidene]ethylidene]-4-methylene-cyclohexane-1,3-diol, (1S,3R,5Z)-5-[(2E)-2-[(1R,7aR)-1-[(1R)-1,5-dimethylhexyl]-7a-methyl-2,3,3a,5,6,7-hexahydro-1H-inden-4-ylidene]ethylidene]-4-methylenecyclohexane-1,3-diol, (1S,3R,5Z)-5-[(2E)-2-[(1R,7aR)-7a-methyl-1-[(2R)-6-methylheptan-2-yl]-2,3,3a,5,6,7-hexahydro-1H-inden-4-ylidene]ethylidene]-4-methylidene-cyclohexane-1,3-diol; Alfentanil, Alfenta, Alfentanil, Alfentanil Hydrochloride; ALIMTA, ALIMTA; aliskiren, 2(S),4(S),5(S),7(S)-N-(2-carbamoyl-2-methylpropyl)-5-amino-4-hydroxy-2,7-diisopropyl-8-(4-methoxy-3-(3-methoxypropoxy)phenyl)octanamid hemifumarate, aliskiren, CGP 060536B; Alli, (−)-Tetrahydrolipstatin, (-)-Tetrahydrolipstatin, (2S)-2-formamido-4-methyl-valeric acid [(1S)-1-[(2S,3S)-3-hexyl-4-keto-oxetan-2-yl]methyl]dodecyl] ester; ALLN, (2S)-2-[(2S)-2-acetamido-4-methylpentanamido]-N-[(1S)-1-formylpentyl]-4-methylpentanamide, (2S)-2-[(2S)-2-acetamido-4-methyl-1-oxopentyl]amino]-N-[(1S)-1-formylpentyl]-4-methylpentanamide, (2S)-2-[(2S)-2-acetamido-4-methyl-pentanoyl]amino]-4-methyl-N-[(2S)-1-oxohexan-2-yl]pentanamide; alloxazine, Alloxazin, alloxazine, benzo[g]pteridine-2,4(1H,3H)-dione; allyl isothiocyanate, allyl isothiocyanate; almokalant, almokalant; aloesin, aloesin; Alprenolol, 1-(o-Allylphenoxy)-3-(isopropylamino)-2-propanol, Alfeprol, Alpheprol; Alvesco, Alvesco, Ciclesonide; AM 1387, AM 1387, AM-1387, AM1387; AM 251, AM 251, AM-251, AM251; Am 80, 4-((5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-2-naphthalenyl)carbamoyl)benzoic acid, Am 80, AM-80;

AMD 070, AMD 070, AMD-070, AMD070;
Amiloride, Alphapharm Brand of Amiloride Hydrochloride, Amidal, Amiduret Trom;
Aminacrine, 9 Aminoacridine, 9-Aminoacridine, Acridinamine;
Amine BB, (C12-18)Qalkylamine, (C12-C18)Alkylamine, 1-Aminododecane;
amino-polyethyleneoxide-sulfonate, amino-polyethyleneoxide-sulfonate, NH₂-PEO-SO₃, PEO-SO₃;
aminoflavone, 5-amino-2-(4-amino-3-fluorophenyl)-6,8-difluoro-7-methyl-4H-1-benzopyran-4-one, aminoflavone, NSC 686288;
Amiodarone, (2-butyl-1-benzofuran-3-yl)(4-{[2-(diethylamino)ethyl]oxy}-3,5-diiodophenyl)methanone, (2-butyl-1-benzofuran-3-yl)-[4-(2-diethylaminoethoxy)-3,5-diiodophenyl]methanone, (2-butyl-1-benzofuran-3-yl)-[4-(2-diethylaminoethoxy)-3,5-diiodophenyl]methanone;
Amlodipine, Almirall Brand of Amlodipine Besilate, Amlodipine, Amlodipine Besylate;
Amphotericin B, Amphocil, Amphotericin, Amphotericin B;
amprenavir, 141W94, Agenerase, amprenavir;
Amrinone, 5-Amino-(3,4'-bipyridine)-6(1H)-one, Amrinon, Amrinone;
amsonic acid, 4,4'-diacetamido-2,2'-stilbene disulfonate, 4,4'-diaminostilbene-2,2'-disulfonic acid, amsonic acid;
Amygdalin, Amygdalin, Amygdaloside, Laetrile;
AN 207, AN 207;
Anaboleen, (5a,17b)-17-Hydroxyandrostane-3-one, (5alpha,17beta)-17-hydroxyandrostane-3-one, (5S,8R,9S,10S,13S,14S,17S)-17-hydroxy-10,13-dimethyl-1,2,4,5,6,7,8,9,11,12,14,15,16,17-tetradecahydrocyclopenta[a]phenanthrene-3-one;
anacardic acid, 6-(8(Z),11(Z),14-pentadecatrienyl)salicylic acid, 6-(8,11,14-pentadecatrienyl)salicylic acid, 6-nonadecyl salicylic acid;
Anandamide, (5Z,8Z,11Z,14Z)-N-(2-Hydroxyethyl)-5,8,11,14-eicosatetraenamide, (5Z,8Z,11Z,14Z)-N-(2-hydroxyethyl)-5,8,11,14-eicosatetraenamide, (5Z,8Z,11Z,14Z)-N-(2-hydroxyethyl)icosa-5,8,11,14-tetraenamide;
Anco, (-)-Ibuprofen, (+-)-2-(p-isobutylphenyl)propionic acid, (+-)-alpha-methyl-4-(2-methylpropyl)benzeneacetic acid;
Andrographis, (3E,4S)-3-[2-[(1R,4aS,5R,6R,8aS)-6-hydroxy-5,8a-dimethyl-2-methylene-5-methylol-decalin-1-yl]ethylidene]-4-

hydroxy-tetrahydrofuran-2-one, (3E,4S)-3-[2-[(1R,4aS,5R,6R,8aS)-6-hydroxy-5-(hydroxymethyl)-5,8a-dimethyl-2-methylene-1-decalinyl]ethylidene]-4-hydroxy-2-tetrahydrofuranone, (3E,4S)-3-[2-[(1R,4aS,5R,6R,8aS)-6-hydroxy-5-(hydroxymethyl)-5,8a-dimethyl-2-methylene-decalin-1-yl]ethylidene]-4-hydroxy-tetrahydrofuran-2-one;

Androtine, (3 α ,5 α)-3-hydroxyandrostan-17-one, (3R,5S,8R,9S,10S,13S,14S)-3-hydroxy-10,13-dimethyl-1,2,3,4,5,6,7,8,9,11,12,14,15,16-tetradecahydrocyclopenta[a]phenanthren-17-one, 3- α -Hydroxy-17-androstanone;

Aneol, (+)-3-Benzoyl- α -methylbenzeneacetic acid, 19583 RP, 2-(3-benzoylphenyl)propanoic acid;

Ang II, (3S)-3-amino-4-[[[(1S)-1-[[[(1S)-1-[[[(1S)-2-[[[(1S,2S)-1-[[[(1S)-2-[(2S)-2-[[[(1S)-1-(benzyl)-2-hydroxy-2-keto-ethyl]carbamoyl]pyrrolidin-1-yl]-1-(3H-imidazol-4-ylmethyl)-2-keto-ethyl]carbamoyl]-2-methyl-butyl]amino]-1-(4-hydroxybenzyl)-2-keto-ethyl]carbamoyl], (3S)-3-amino-4-[[[(1S)-4-guanidino-1-[[[(1S)-1-[[[(1S)-2-[[[(1S,2S)-1-[[[(1S)-2-[(2S)-2-[[[(1S)-2-hydroxy-2-oxo-1-(phenylmethyl)ethyl]carbamoyl]pyrrolidin-1-yl]-1-(3H-imidazol-4-ylmethyl)-2-oxo-ethyl]carbamoyl]-2-methyl-butyl]amino]-1-(4-hydroxyphenyl)methyl]-, (3S)-3-amino-4-[[[(1S)-4-guanidino-1-[[[(1S)-1-[[[(1S)-2-[[[(1S,2S)-1-[[[(1S)-2-[(2S)-2-[[[(1S)-2-hydroxy-2-oxo-1-(phenylmethyl)ethyl]amino]-oxomethyl]-1-pyrrolidinyl]-1-(3H-imidazol-4-ylmethyl)-2-oxoethyl]amino]-oxomethyl]-2-methylbutyl]amino]-1-(4-hydrox;

Anisomycin, Anisomycin, Flagecidin;

Anon, Anon, Anone, Cicloesanone;

Anthocyanins, Anthocyanidin, Anthocyanidins, Anthocyanin;

anthra(1,9-cd)pyrazol-6(2H)-one, anthra(1,9-cd)pyrazol-6(2H)-one, SP600125;

anthracene, anthracene, Anthrazen, c1ccc2cc3ccccc3cc2c1;

anthralin, 1,8-dihydroxy-9(10H)-anthracenone, 1,8-dihydroxy-9-anthrone, 1,8-dihydroxyanthracen-9(10H)-one;

Anthricin, (-)-Anthricin, (-)-Deoxypodophyllotoxin, (-)-Desoxypodophyllotoxin;

anthrone, 9(10H)-anthracenone, 9,10-dihydro-9-oxoanthracene, anthracen-9(10H)-one;

antibiotic G 418, antibiotic G 418;

antibiotic H107, antibiotic H107, H 107;

Antimycin A, Antimycin A, Antimycin A1;
Anyvim, Aminobenzene, Aminophen, Anilin;
APAP, 222 AF, 4'-Hydroxyacetanilide, 4-(Acetylamino)phenol;
APDC, 1-Pyrrolidinecarbodithioic acid, 1-Pyrrolidinecarbodithioic acid & Z-100, Ammonium pyrrolidine dithiocarbamate;
Aphidicolin, Aphidicolin, Aphidicolin, (3S-(3alpha,4beta,4abeta,6aalpha,8alpha,9alpha,11aalpha,11balpha))-Isomer, ICI 69653;
Aphloiol, 1,3,6,7-tetrahydroxy-2-[(3R,4R,5S,6R)-3,4,5-trihydroxy-6-(hydroxymethyl)-2-tetrahydropyranyl]-9-xanthenone, 1,3,6,7-tetrahydroxy-2-[(3R,4R,5S,6R)-3,4,5-trihydroxy-6-(hydroxymethyl)oxan-2-yl]xanthen-9-one, 1,3,6,7-tetrahydroxy-2-[(3R,4R,5S,6R)-3,4,5-trihydroxy-6-(hydroxymethyl)tetrahydropyran-2-yl]xanthen-9-one;
apicidin, apicidin, apicidin C, cyclo(N-O-methyl-tryptophyl-isoleucyl-pipecolinyl-2-amino-8-oxodecanoyl);
Apigenin, 2-(p-hydroxyphenyl)-5,7-dihydroxychromone, 4′, 5,7-Trihydroxyflavone, 4′, 5,7-Trihydroxyflavone;
apocynin, 1-(4-hydroxy-3-methoxyphenyl)ethan-1-one, 4'-hydroxy-3'-methoxyacetophenone, Acetovanillone;
Apotransferrin, Apotransferrin;
aprepitant, (2R)-(1R)-3,5-bis(trifluoromethylphenyl)ethoxy)-(3S)-(4-fluoro)phenyl-4-(3-(5-oxo-1H,4H-1,2,4-triazole)methyl)morpholine, aprepitant, Emend;
APRL, 1-ethyl-2-acetyl-sn-glycero-3-phosphocholine, 1-O-Alkyl-2-acetyl-sn-glycero-3-phophocholine, 1-O-Alkyl-2-acetyl-sn-glyceryl-3-phosphorylcholine;
AQ4N, 1,4-bis-((2-(dimethylamino)ethyl)amino)-5,8-dihydroxyanthracene-9,10-dione, 1,4-bis-((2-(dimethylamino-N-oxide)ethyl)amino)-5,8-dihydroxyanthracene-9,10-dione, AQ4N;
arabinogalactan, arabinogalactan;
Arac, Arac;
Aralen, (-)-Chloroquine, (+)-Chloroquine, (+)-N4-(7-Chloro-4-quinolinyl)-N1,N1-diethyl-1,4-pentanediamine;
Arasine, 1H-Imidazole-4-carboxamide, 5-amino-1-beta-D-ribofuranosyl-, 5-Amino-1-.beta.-D-ribofuranosyl-1H-imidazole-4-carboxamide, 5-Amino-1-beta-D-ribofuranosyl-1H-imidazole-4-carboxamide;

Areca, Areca, Areca catechu, Betel Nut;
Arecoline, Arecaline, Arecholin, Arecholine;
Areether, 109716-83-8 (UNSPECIFIED 12 POSITION), 3,12-Epoxy-12H-pyrano(4,3-j)-1,2-benzodioxepin, 10-ethoxydecahydro-3,6,9-trimethyl-, (3S-(3alpha,5alpha,6alpha,8aalpha,9beta,10beta,12beta,12aalpha))-, 3,12-Epoxy-12H-pyrano(4,3-j)-1,2-benzodioxepin, decahydro-10-ethoxy-3,6,9-trimethyl-, (3R-(3alpha,5beta,6beta,8abeta,9alpha,10alpha,12beta,12aR*)) -;
argatroban, 4-methyl-1-(N(2)-(3-methyl-1,2,3,4-tetrahydro-8-quinolinesulfonyl)-L-arginyl)-2-piperidinecarboxylic acid, Aco-va, argatroban;
aripiprazole, 7-(4-(4-(2,3-dichlorophenyl)-1-piperazinyl)butyloxy)-3,4-dihydro-2(1H)-quinolinone, Abilify, aripiprazole;
Aron, 2-Carboxyethyl acrylate oligomers, 2-Propenoic acid, 2-Propenoic acid, homopolymer;
Artein, (1S,3R,7S,8S,8aR)-1,2,3,7,8,8a-Hexahydro-3,7-dimethyl-8-(2-(2R,4R)-(tetrahydro-4-hydroxy-6-oxo-2H-pyran-2-yl)ethyl)-1-naphthalenyl (S)-2-methyl-butyrate, (1S-(1alpha(R),3alpha,7beta,8beta(2S,4S),8abeta))-(1,2,3,7,8,8a-hexahydro-3,7-dimethyl-8-(2-(tetrahydro-4-hydroxy-6-oxo-2H-pyran-2-yl)ethyl)-1-naphthyl) 2-methylbutanoate, (1S-(1alpha(R*),3alpha,7beta,8beta(2S*,4S*),8abeta))-2-Methylbutanoic acid 1,2,3,7,8,8a-hexahydro-3,7-dimethyl-8-(2-(tetrahydro-4-hydroxy-6-oxo-2H-pyran-2-yl)ethyl)-1-naphthalenyl ester;
Artra, .alpha.-Hydroquinone, .beta.-Quinol, 1,4-Benzenediol;
arvanil, arvanil;
asiatic acid, asiatic acid;
asiaticoside, asiaticoside;
Asmax, 1,3-Dimethyl-2,6-dioxo-1,2,3,6-tetrahydropurine, 1,3-dimethyl-3,7-dihydro-1H-purine-2,6-dione, 1,3-dimethyl-7H-purine-2,6-dione;
Asmol, (+-)-Albuterol, (+-)-alpha(sup 1)-(((1,1-Dimethylethyl)amino)methyl)-4-hydroxy-1,3-benzenedimethanol, (+-)-Salbutamol;
ASTA, (+-)-Cyclophosphamide, (+-)-N,N-Bis(2-chloroethyl)tetrahydro-2H-1,3,2-oxazaphosphorin-2-amine 2-oxide, (-)-Cyclophosphamide;

astatine, ⁸⁵At, Astat, astate;
Astemizole, Alacan Brand of Astemizole, Alermizol, Alonga Brand of Astemizole;
Astragaloside A, Astragaloside A, Astragaloside IV, Astramembrannin I;
atazanavir, 3,12-bis(1,1-dimethylethyl)-8-hydroxy-4,11-dioxo-9-(phenylmethyl)-6-((4-(2-pyridinyl)phenyl)methyl)-2,5,6,10,13-pentaazatetradecanedioic acid dimethyl ester, atazanavir, atazanavir sulfate;
ATL 146e, 4-(3-(6-amino-9-(5-ethylcarbamoyl-3,4-dihydroxytetrahydrofuran-2-yl)-9H-purin-2-yl)prop-2-ynyl)cyclohexanecarboxylic acid methyl ester, ATL 146e, ATL-146e;
Atorel, .beta.-D-Ribofuranoside, hypoxanthine-9, .beta.-Inosine, 6H-Purin-6-one, 9-.beta.-D-arabinofuranosyl-1,9-dihydro-;
atorvastatin, atorvastatin, atorvastatin calcium, atorvastatin, calcium salt;
Atovaquone, 2-(4-(4'-chlorophenyl)cyclohexyl)-3-hydroxy-1,4-naphthoquinone, 2-(trans-4-(4-chlorophenyl)cyclohexyl)-3-hydroxy-1,4-naphthoquinone, 566C;
ATRA, (2E,4E,6E,8E)-3,7-dimethyl-9-(2,6,6-trimethyl-1-cyclohexenyl)nona-2,4,6,8-tetraenoic acid, (2E,4E,6E,8E)-3,7-dimethyl-9-(2,6,6-trimethylcyclohex-1-en-1-yl)nona-2,4,6,8-tetraenoic acid, (2E,4E,6E,8E)-3,7-Dimethyl-9-(2,6,6-trimethylcyclohex-1-enyl)nona-2,4,6,8-tetraenoic acid;
Atropine, Anaspaz, AtroPen, Atropin Augenöl;
Auranofin, Auranofin, Auranofin Recordati Brand, Auranofin Robapharm Brand;
AuTM, (1,2-dicarboxyethylthio)gold, 1,2-dicarboxyethanethiolatogold(I), 1,2-dicarboxyethylsulfanylgold;
auxin, (indol-3-yl)acetate, 1H-indol-3-ylacetate, 2-(1H-indol-3-yl)acetate;
avasimibe, 2,6-bis(1-methylethyl)phenyl ((2,4,6-tris(1-methylethyl)phenyl)acetyl)sulfamate, avasimibe, CI 1011;
AVE 0118, AVE 0118, AVE-0118, AVE0118;
avicularin, avicularin;
Avid, Abamectin, ABAMECTIN (4:1 MIXTURE), Abamectin [ANSI];
Axert, Almogran, Almotriptan, Almotriptan (USAN);
Axsain, (6E)-N-(4-hydroxy-3-methoxybenzyl)-8-methylnon-6-enamide, (6E)-N-{{4-hydroxy-3-(methoxy)phenyl}methyl}-8-

methylnon-6-enamide, (E)-8-Methyl-N-vanillyl-6-nonenamide;
Aza-dC, Aza-dC;
Aza-deoxycytidine, Aza-deoxycytidine;
azacyclonol, azacyclonol;
Azadc, 1,3, 5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy--D-erythro-pentofuranosyl)-, 2'-Deoxy-5-azacytidine, 4-amino-1-(2-deoxy-beta-D-erythro-pentofuranosyl)-1,3,5-triazin-2(1H)-one;
azamulin, azamulin;
azaspirane, antiprimod, atiprimod, azaspirane;
azelaic acid, 1,7-dicarboxyheptane, 1,7-Heptanedicarboxylic acid, 1,9-nonanedioic acid;
azelastine, 4-((4-chlorophenyl)methyl)-2- (hexahydro-1-methyl-1H-azepin-4-yl)-1(2H)- phthalazinone HCl, 4-(p-chlorobenzyl)-2-(N-methylperhydroazepinyl-(4))-1-(2H)-phthalazinone, A 5610;
azelnidipine, 3-(1-diphenylmethylazetidin-3-yl)-5-isopropyl-2-amino-1,4-dihydro-6-methyl-4-(3-nitrophenyl)-3,5-pyridinedicarboxylate, azelnidipine, CS 905;
azido ruthenium, azido ruthenium;
Azine, Azabenzene, Azine, Piridina;
Azithromycin, Azadose, Azithromycin, Azithromycin Dihydrate;
Azobisisobutyramidinium dichloride, 2,2'-Azobis(2-amidinopropane) dihydrochloride, 2,2'-Azobis(2-amidinopropane)hydrochloride, 2,2'-Azobis(2-methylpropionamide) dihydrochloride;
Azole, (4H)-1,2,4-Triazol-3-amine, .DELTA.2-1,2,4-Triazoline, 5-imino-, 1,2,4-Triazol-3-amine;
Azoles, Azoles;
Azolidine, 1-Azacyclopentane, Azacyclopentane, Azolidine;
Azophen, .beta.-Antipyrine, 1,2-Dihydro-1,5-dimethyl-2-phenyl-3H-pyrazol-3-one, 1,5-dimethyl-2-phenyl-1,2-dihydro-3H-pyrazol-3-one;
Azor, 4H-(1,2,4)Triazolo(4,3-a)(1,4)benzodiazepine, 8-chloro-1-methyl-6-phenyl-, 4H-s-Triazolo(4,3-a)(1,4)benzodiazepine, 8-chloro-1-methyl-6-phenyl-, 4H-[1,2,4]Triazolo[4,3-a][1,4]benzodiazepine, 8-chloro-1-methyl-6-phenyl-;
BA (VAN), 1,1'-(Oxybis(methylene))bisbenzene, 1,1'-[oxybis(methylene)]dibenzene, 1,1-(Oxybis(methylene))bisbenzene;
Ba 0108E, Ba 0108E, Barium chloride, Barium chloride (BaCl₂);
bacitracin, bacitracin, bacitracins;
Baclofen, Alphapharm Brand of Baclofen, Apo Baclofen, Apo-

Baclofen;

bacterial lysate, bacterial immunostimulant, bacterial lysate, Broncho-Vaxom;

bafilomycin A1, bafilomycin A1;

Bagren, (5' α)-2-bromo-12'-hydroxy-2'-(1-methylethyl)-5'-(2-methylpropyl)-3',6',18-trioxoergotaman, (5' α)-2-bromo-12'-hydroxy-2'-(1-methylethyl)-5'-(2-methylpropyl) ergotaman-

3',6',18-trione, (5' α)-2-bromo-12'-hydroxy-5'-(2-methylpropyl)-2'-(propan-2-yl)-3',6',18-trioxoergotaman;

baicalein, 5,6,7-trihydroxy-2-phenyl-4-chromenone, 5,6,7-Trihydroxy-2-phenyl-4H-1-benzopyran-4-one, 5,6,7-trihydroxy-2-phenyl-4H-chromen-4-one;

Barbiturate, 1,2,3,4,5,6-Hexahydro-2,4,6-pyrimidinetrione, 1,3-diazinane-2,4,6-trione, 2,4,6(1H,3H,5H)-Pyrimidinetrione;

Barnidipine, (+)-(3'S,4S)-1-Benzyl-3-pyrrolidinyl methyl 1,4-dihydro-2,6-dimethyl-4-(m-nitrophenyl)-3,5-

pyridinedicarboxylate, 2,6-dimethyl-4-(3-nitrophenyl)-1,4-dihydropyridine-3,5-dicarboxylic acid O3-[(3S)-1-

(benzyl)pyrrolidin-3-yl] O5-methyl ester, 2,6-dimethyl-4-(3-nitrophenyl)-1,4-dihydropyridine-3,5-dicarboxylic acid O5-methyl O3-[(3S)-1-(phenylmethyl)-3-pyrrolidinyl] ester;

BAY 11-7085, 3-((4-(1,1-dimethylethyl)phenyl)sulfonyl)-2-propenenitrile, BAY 11-7083, BAY 11-7085;

BB-K8, (2S)-4-amino-N-[(1R,2S,3S,4R,5S)-5-amino-2-(3-amino-3-deoxy- α -D-glucopyranosyloxy)-4-(6-amino-6-deoxy- α -D-glucopyranosyloxy)-3-hydroxycyclohexyl]-2-hydroxybutanamide,

(2S)-4-amino-N-[(1R,2S,3S,4R,5S)-5-amino-2-[(2S,3R,4S,5S,6R)-4-amino-3,5-dihydroxy-6-(hydroxymethyl)oxan-2-yl]oxy-4-

[(2R,3R,4S,5S,6R)-6-(aminomethyl)-3,4,5-trihydroxy-oxan-2-yl]oxy-3-hydroxy-cyclohexyl]-2-hydroxy-butanamide, (2S)-4-amino-

N-[(1R,2S,3S,4R,5S)-5-amino-2-[(2S,3R,4S,5S,6R)-4-amino-3,5-dihydroxy-6-(hydroxymethyl)oxan-2-yl]oxy-4-[(2R,3R,4S,5S,6R)-6-(aminomethyl)-3,4,5-trihydroxyoxan-2-yl]oxy-3-

hydroxycyclohexyl]-2-hydroxybutanamide;

BCNU, 1,3-Bis(.beta.-chloroethyl)-1-nitrosourea, 1,3-bis(2-chloroethyl)-1-nitroso-urea, 1,3-Bis(2-chloroethyl)-1-nitrosourea;

Beflavin, ()-Riboflavin, (−)-Riboflavin, (-)-Riboflavin;

Belt, (1 α ,2 α ,3 α ,4 β ,7 β ,7 α)-

1,2,4,5,6,7,8,8-Octachloro-2,3,3a,4,7,7a-hexahydro-4,7-methano-

1H-indene, (1alpha,2beta,3alpha,4beta,7beta,7aalpha)-
1,2,4,5,6,7,8,8-Octachloro-2,3,3a,4,7,7a-hexahydro-4,7-methano-
1H-indene, .gamma.-Chlordan;
benazepril, Beecham brand of benazepril hydrochloride, bena-
zapril, benazepril;
bendamustine, bendamustin, bendamustine, bendamustine hydrochlo-
ride;
Benidipine, (+-)-(R*)-3-((R*)-1-Benzyl-3-piperidyl) methyl 1,4-
dihydro-2,6-dimethyl-4-(m-nitrophenyl)-3,5-
pyridinedicarboxylate, 2,6-dimethyl-4-(3-nitrophenyl)-1,4-
dihydropyridine-3,5-dicarboxylic acid O3-[(3R)-1-(benzyl)-3-
piperidyl] O5-methyl ester, 2,6-dimethyl-4-(3-nitrophenyl)-1,4-
dihydropyridine-3,5-dicarboxylic acid O5-methyl O3-[(3R)-1-
(phenylmethyl)-3-piperidinyl] ester;
benzamidine, benzamidine, benzenecarboximidamide, phenylamidine;
benzimidazolide, benzimidazol-1-ide, benzimidazolide, bim;
Benzodiazepines, Benzodiazepine, Benzodiazepine Compounds, BEN-
ZODIAZEPINE CPDS;
Benzodioxoles, 1,3-Dioxaindans, 1,3-Dioxindans, Benzodioxoles;
Benzphetamine, Benzphetamine, Benzphetamine, Didrex;
benzylamine N-oxide, benzylamine N-oxide;
benzylamine, (Aminomethyl)benzene, (Phenylmethyl)amine, 1-
phenylmethanamine;
benzyloxycarbonylleucyl-leucyl-leucine aldehyde, benzyloxycar-
bonylleucyl-leucyl-leucine aldehyde;
benzyloxycarbonylvalyl-alanyl-aspartyl fluoromethyl ketone, Ac-
DEVD-CMK, Ac-ZVAD-FMK, benzyloxycarbonylvalyl-alanyl-aspartyl
fluoromethyl ketone;
beractant, Abbott brand
of beractant, beractant, Ross brand of beractant;
berberine, 7,8,13,13a-tetradehydro-9,10-dimethoxy-2,3-
[methylenebis(oxy)]berbinium, 9,10-dimethoxy-2,3-
(methylenedioxy)-7,8,13,13a-tetradehydroberbinium, 9,10-
dimethoxy-5,6-dihydro[1,3]dioxolo[4,5-g]isoquino[3,2-
a]isoquinolin-7-ium;
bergamottin, 5-geranoxypsoralen, 8-geranyloxypsoralen, berga-
mottin;
bergaptol, 4-hydroxy-7H-furo[3,2-g]chromen-7-one, 5-
Hydroxyfuranocoumarin, bergaptol;
beta-glycerophosphoric acid, 2-glycerophosphoric acid, beta-

glycerol phosphate, beta-glycerophosphate;
beta-lapachone, beta-lapachone;
beta-Naphthoflavone, 5,6-Benzoflavone, beta Naphthoflavone, beta-Naphthoflavone;
beta-propiolactone, 1,3-propiolactone, 2-oxetanone, 3-hydroxypropionic acid beta-lactone;
Bethanechol, Bethanechol, Bethanechol Chloride, Bethanecol;
betulinic acid, betulic acid, betulinic acid;
bexarotene, 3-methyl-TTNEB, 4-(1-(3,5,5,8,8-pentamethyl-5,6,7,8-tetrahydro-2-naphthyl)ethenyl)benzoic acid, bexarotene;
Bezafibrate, Azufibrat, Azupharma Brand of Bezafibrate, Bayer Brand of Bezafibrate;
BG 9928, 3-(4-(2,6-dioxo-1,3-dipropyl-2,3,6,7-tetrahydro-1H-purin-8-yl)-bicyclo(2.2.2)oct-1-yl)propionic acid, BG 9928, BG-9928;
BGC945, BGC 945, BGC945;
biapigenin, bi-apigenin, biapigenin;
BIBX 1382BS, BIBX 1382BS, BIBX-1382BS, BIBX1382BS;
biphenyl-4-ol, 4-biphenylol, 4-diphenylol, 4-Hydroxybiphenyl;
BIRB 796, 1-(5-tert-butyl-2-p-tolyl-2H-pyrazol-3-yl)-3(4-(2-morpholin-4-yl-ethoxy)naphthalen-1-yl)urea, BIRB 796, BIRB796;
bisindolylmaleimide I, 2-(1-(3-dimethylaminopropyl)indol-3-yl)-3-(indol-3-yl)maleimide, 3-(1-(3-(dimethylamino)propyl)-1H-indol-3-yl)-4-(1H-indol-3-yl)-1H-pyrrole-2,5-dione, BIS-1 cpd;
bisindolylmaleimide III, 3-[1-(3-aminopropyl)-1H-indol-3-yl]-4-(1H-indol-3-yl)-1H-pyrrole-2,5-dione, bis-(III) indolylmaleimide, bisindolylmaleimide III;
Bisoprolol, Bisoprolol, Bisoprolol Fumarate, Bisoprolol Fumarate (1:1) Salt, (+-)-Isomer;
bisperoxovanadium, bisperoxovanadium, bpV vanadium compound;
Bisphenol A-Glycidyl Methacrylate, 2-Propenoic acid, 2-methyl-, (1-methylethylidene)bis(4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)) ester, homopolymer, Adaptic, Bis GMA;
bizelesin, bizelesin, U-78779;
BL1521, BL 1521, BL1521;
Bla-S, (2R,3R,6S)-3-[[(3S)-3-amino-5-(carbamimidoyl-methylamino)pentanoyl]amino]-6-(4-amino-2-oxo-pyrimidin-1-yl)-3,6-dihydro-2H-pyran-2-carboxylic acid, (2R,3R,6S)-3-[[(3S)-3-amino-5-(carbamimidoyl-methylamino)-1-oxopentyl]amino]-6-(4-amino-2-oxo-1-pyrimidinyl)-3,6-dihydro-2H-pyran-2-carboxylic acid,

(2R,3R,6S)-3-[[(3S)-3-amino-5-(carbamimidoyl-methylamino)pentanoyl]amino]-6-(4-amino-2-oxopyrimidin-1-yl)-3,6-dihydro-2H-pyran-2-carboxylic acid;

Blow, (-)-Cocaine, (1R,2R,3S,5S)-2-(methoxycarbonyl)tropan-3-yl benzoate, (1R,2R,3S,5S)-2-Methoxycarbonyltropan-3-yl benzoate;

BM 41.440, 1-Hexadecylmercapto-2-methoxymethyl-3-propyl phosphoric acid monocholine ester, 1-Hexadecylthio-2-methoxymethyl-rac-glycero-3-phosphocholine, 3,5-Dioxa-9-thia-4-phosphapentacosan-1-aminium, 4-hydroxy-7-(methoxymethyl)-N,N,N-trimethyl-, (2S-(1(R*(R*)),2alpha,3abeta,7abeta))-;

BML 241, BML 241, BML-241, BML241;

BMS 310705, BMS 310705;

BMS204352, (5-chloro-2-methoxyphenyl)-1,3-dihydro-3-fluoro-6-(trifluoromethyl)-2H-indol-2-one, BMS 204352, BMS-204352;

BMS453, BMS 453, BMS-453, BMS453;

Bo-Xan, (3R,3'R)-Beta,Beta-Carotene-3,3'-Diol, Lutein, (3R,3'R,6'R)-Lutein, (3R,3'R,6S)-4,5-Didehydro-5,6-Dihydro-Beta,Beta-Carotene-3,3'-Diol;

Boltin, (7beta,8xi,9beta,13alpha,14beta,17alpha)-17-ethynyl-17-hydroxy-7-methylestr-5(10)-en-3-one, (7R,8R,9S,13S,14S,17R)-17-ethynyl-17-hydroxy-7,13-dimethyl-1,2,4,6,7,8,9,11,12,14,15,16-dodecahydrocyclopenta[a]phenanthren-3-one, Boltin;

Bonopen, (2S,5R,6R)-6-((2R)-2-Methylenamino-2-phenylacetamido-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo(3.2.0)heptan-2-carbonsaeure, (alpha-(Methyleneamino)benzyl)penicillin, 3,3-Dimethyl-6-(2-(methyleneamino)-2-phenylacetamidol-7-oxo-4-thia-1-azabicyclo(3.2.0)heptane-2-carboxylic acid;

boron, Bor, boracium, bore;

Borrelia-burgdorferi, Borrelia-burgdorferi;

bortezomib, bortezomib, PS 341, PS-341;

bosentan, 4-t-butyl-N-(6-(2-hydroxyethoxy)-5-(2-methoxyphenoxy)-2,2'-bipyrimidin-4-yl)benzenesulfonamide, Actelion brand of bosentan monohydrate, bosentan;

bosutinib, 4-((2,4-dichloro-5-methoxyphenyl)amino)-6-methoxy-7-(3-(4-methyl-1-piperazinyl)propoxy)-3-quinolinecarbonitrile, 4-[(2,4-dichloro-5-methoxyphenyl)amino]-6-methoxy-7-[3-(4-methylpiperazin-1-yl)propoxy]quinoline-3-carbonitrile, bosutinib;

botrocetin, botrocetin;

BPDE, (+)-7beta,8alpha-Dihydroxy-9alpha,10alpha-oxy-7,8,9,10-

tetrahydrobenzo(a)pyrene, (+-)-(E)-7,8-Dihydroxy-9,10-epoxy-7,8,9,10-tetrahydrobenzo(a)pyrene, (+-)-anti-BPDE;
BR-II, BR-II;
Brake, 1-Methyl-3-phenyl-5-(3-(trifluoromethyl)phenyl)-4(1H)-pyridinone, 1-Methyl-3-phenyl-5-(3-(trifluoromethyl)phenyl)-4-pyridone, 1-Methyl-3-phenyl-5-(alpha,alpha,alpha-trifluoro-m-tolyl)-4-pyridone;
bredinin, bredinin;
Brefeldin A, Ascotoxin, Brefeldin A, Cyanein;
Bromazepam, 1A Brand of Bromazepam, Aliud Brand of Bromazepam, Anxyrex;
bromo-cis-stilbene, bromo-cis-stilbene;
brucine, brucine;
bryostatin 1, bryostatin 1;
Budesonide, Budesonide, Budesonide, (R)-Isomer, Budesonide, (S)-Isomer;
bufalin, bufalin, bufalin, (3alpha,5beta)-isomer;
bufuralol, bufuralol, bufuralol, (DL)-(+)-isomer, bufuralol, hydrochloride;
Bumetanide, AstraZeneca Brand of Bumetanide, Atlantis Brand of Bumetanide, Bumedyl;
BuOH, 1-butanol, 1-Butyl alcohol, 1-Hydroxybutane;
Bupivacaine, 1-Butyl-N-(2,6-dimethylphenyl)-2-piperidinecarboxamide, Abbott Brand of Bupivacaine Hydrochloride, Astra Brand of Bupivacaine Hydrochloride;
Buprenorphine, 6029 M, 6029-M, 6029M;
BUPROPION, (-)-2-(tert-Butylamino)-3'-chloropropiophenone, (-)-2-(tert-Butylamino)-3'-chloropropiophenon, (+-)-1-(3-chlorophenyl)-2-((1,1-dimethylethyl)amino)-1-propanone;
Buspirone, Anxut, Apo Buspirone, Apo-Buspirone;
Busulfan, Busulfan, Busulfan GlaxoSmithKline Brand, Busulfan Orphan Brand;
Buthionine Sulfoximine, Buthionine Sulfoximine;
Butyrate, 1-Butyric acid, 1-Propanecarboxylic acid, 2-butanoate;
butyrolactone I, alpha-oxo-beta-(4-hydroxyphenyl)-gamma-(4-hydroxy-m-3,3-dimethylallylbenzyl)-gamma-methoxycarbonyl-gamma-butyrolactone, butyrolactone I;
C 1027, C 1027, C-1027, C1027 chromophore;
C 76, C 76;
CACP, azanide; dichloroplatinum, CACP, cis Pt II;

Calcijex, (1R,5Z)-5-[(2E)-2-[(1R,7aR)-1-(5-hydroxy-1,5-dimethylhexyl)-7a-methyl-2,3,3a,5,6,7-hexahydro-1H-inden-4-ylidene]ethylidene]-4-methylene-cyclohexane-1,3-diol, (1R,5Z)-5-[(2E)-2-[(1R,7aR)-1-(5-hydroxy-1,5-dimethylhexyl)-7a-methyl-2,3,3a,5,6,7-hexahydro-1H-inden-4-ylidene]ethylidene]-4-methylenecyclohexane-1,3-diol, (1R,5Z)-5-[(2E)-2-[(1R,7aR)-1-(6-hydroxy-6-methyl-heptan-2-yl)-7a-methyl-2,3,3a,5,6,7-hexahydro-1H-inden-4-ylidene]ethylidene]-4-methylidene-cyclohexane-1,3-diol;

Calcimycin, A 23187, A-23187, A23187;

calphostin C, calphostin C;

Calyculin, Calyculin, Calyculin A, Calyculin A from Discodermia calyx;

Camptothecin, Camptothecin, Camptothecine;

Canef, Canef, Cranoc, Fluindostatin sodium;

cangrelor, AR C69931MX, AR-C69931MX, cangrelor;

Cannabinoids, Cannabinoids;

Cannabis, Bhang, Cannabis, Cannabis indica;

Cantharidin, Cantharides, Cantharidin, Cantharidine;

CAPE, (E)-3-(3,4-dihydroxyphenyl)acrylic acid 2-phenylethyl ester, (E)-3-(3,4-dihydroxyphenyl)prop-2-enoic acid 2-phenylethyl ester, 2-phenylethyl (E)-3-(3,4-dihydroxyphenyl)prop-2-enoate;

Capsaicin, 8 Methyl N Vanillyl 6 Nonenamide, 8-Methyl-N-

Vanillyl-6-Nonenamide, Alacan Brand of Capsaicin;

capsaicinoids, capsaicinoids;

capsazepine, capsazepine;

Carbachol, Alcon Brand 1 of Carbachol, Alcon Brand 2 of Carbachol, Allphar Brand of Carbachol;

Carbamazepine, Amizepine, Carbamazepine, Carbamazepine Acetate;

carbapenem, (5R)-1-azabicyclo[3.2.0]hept-2-en-7-one, 2,3-didehydro-1-carbapenam, carbapenem;

Carbapenems, Antibiotics, Carbapenem, Carbapenem Antibiotics, Carbapenems;

carbobenzoxyleucyl-leucyl-norvalinal, benzyloxycarbonyl-leucyl-leucyl-norvalinal, carbobenzoxyleucyl-leucyl-norvalinal, carbobenzoxyl-leucinyl-leucinyl-norvalinal-H;

Carbolines, Beta Carbolines, Beta-Carbolines, Carbolines;

Carboxyethyl-phenethylamino-ethylcarboxamidoadenosine, Carboxyethyl-phenethylamino-ethylcarboxamidoadenosine;

Cardiolipins, Cardiolipin, Cardiolipins, Diphosphatidylglycer-

ols;
carebastine, carebastine;
CARNOSOL, CARNOSOL;
carrageenans, Carrageenan, carrageenans, carrageenin;
carvacrol, carvacrol;
carvedilol, Atlana Pharma brand of carvedilol, BM 14190, BM-14190;
Casodex, Bicalutamide, Casodex, Casodex (TN);
caspofungin, Cancidas, caspofungin, caspofungin acetate;
casticin, 3',5-dihydroxy-3,4',6,7-tetramethoxyflavone, casticin, vitexicarpin;
catechins, catechin, catechins;
CB 3717, CB 3717;
Cbdca, (SP-4-2)-diammine[cyclobutane-1,1-dicarboxylato(2-)-kappa(2)O,O']platinum, 1,1-Cyclobutanedicarboxylate diammine platinum(II), ammonia; cyclobutane-1,1-dicarboxylic acid; platinum(+2) cation;
CCPA, (2R,3R,4S,5R)-2-[2-chloro-6-(cyclopentylamino)-9-purinyl]-5-(hydroxymethyl)tetrahydrofuran-3,4-diol, (2R,3R,4S,5R)-2-[2-chloro-6-(cyclopentylamino)purin-9-yl]-5-(hydroxymethyl)oxolane-3,4-diol, (2R,3R,4S,5R)-2-[2-chloro-6-(cyclopentylamino)purin-9-yl]-5-(hydroxymethyl)tetrahydrofuran-3,4-diol;
CD 437, 6-(3-(1-adamantyl)-4-hydroxyphenyl)-2-naphthalenecarboxylic acid, AHPN, CD 437;
CDP 840, CDP 840;
Cefoxitin, Cefoxitin, Cefoxitin Sodium, Mefoxin;
celecoxib,
4-(5-(4-methylphenyl)-3-(trifluoromethyl)-1H-pyrazol-1-yl)benzenesulfonamide, Celebrex, celecoxib;
cephalomannine, cephalomannine, taxol B;
cephalosporins, cephalosporins;
cepharanthine, cepharanthin, cepharanthine;
cerebrolysin, cerebrolysin, cerebrolysine, FPF 1070;
cerivastatin, 6-Heptenoic acid, 7-(4-(4-fluorophenyl)-5-(methoxymethyl)-2,6-bis(1-methylethyl)-3-pyridinyl)-3,5-dihydroxy-, monosodium salt, (S-(R*,S*-(E)))-, 7-(4-(4-fluorophenyl)-2,6-diisopropyl-5-(methoxymethyl)pyrid-3-yl)-3,5-dihydroxy-6-heptenoate sodium salt, Bay w 6228;
Cetomacrogol, alpha-Hexadecyl-omega-Hydroxypoly(oxy-1,2-Ethanediy), Brij 52, Brij 56;

cetorelix, ASTA Medica brand of cetorelix acetate, cetorelix, cetorelix acetate;

cetuximab, C225, cetuximab, Erbitux;

CGP 12177, 4-(3-tert-butylamino-2-hydroxypropoxy)benzimidazol-2-one, 4-(3-tert-butylamino-2-hydroxypropoxy)benzimidazol-2-one hydrochloride, (+-)-isomer, 4-(3-tert-butylamino-2-hydroxypropoxy)benzimidazol-2-one, (+-)-isomer;

CGS 15943A, (1,2,4)Triazolo(1,5-c)quinazolin-5-amine, 9-chloro-2-(2-furanyl)-, 9-Chloro-2-(2-furanyl)-(1,2,4)triazolo(1,5-c)quinazolin-5-amine, 9-Chloro-2-(2-furanyl)-[1,2,4]triazolo[1,5-c]quinazolin-5-amine;

CGS 21680, 2-(4-(2-carboxyethyl)phenethylamino)-5'-N-ethylcarboxamidoadenosine, Benzenepropanoic acid, 4-(2-((6-amino-9-(N-ethyl-beta-D-ribofuranuronamidosyl)-9H-purin-2-yl)amino)ethyl)-, CGS 21680;

CH-THF, 2-[[4-(3-amino-1-keto-5,6,6a,7-tetrahydro-4H-imidazo[3,4-f]pteridin-10-ium-8-yl)benzoyl]amino]glutaric acid, 2-[[4-(3-amino-1-oxo-5,6,6a,7-tetrahydro-4H-imidazo[3,4-f]pteridin-10-ium-8-yl)benzoyl]amino]pentanedioic acid, 2-[[4-(3-amino-1-oxo-5,6,6a,7-tetrahydro-4H-imidazo[3,4-f]pteridin-10-ium-8-yl)phenyl]carbonylamino]pentanedioic acid;

CH₂CHO, Acetaldehyd, Acetaldehyde, Acetaldehyde (natural);

Chalcone, 1,3-Diphenyl-2-Propen-1-One, Benzalacetophenone, Benzylideneacetophenone;

CHAPS, 3-((3-Cholamidopropyl)dimethylammonio)-1-propanesulfonate, 3-((3-Cholamidopropyl)dimethylammonium)-1-propanesulfonate, 3-[(3-Cholamidopropyl)dimethylammonio]-1-propanesulfonate;

Chinine, (-)-Quinine, (5-ethenyl-1-azabicyclo[2.2.2]octan-7-yl)-(6-methoxyquinolin-4-yl)methanol, (6-methoxy-4-quinolyl)-(5-vinyl-2-quinuclidinyl)methanol;

Chitosan, Chitosan, Poliglusam;

Chloramphenicol, Chloramphenicol, Chlornitromycin, Chlorocid;

chlorophenyl-ethane, chlorophenyl-ethane;

chlorophyllin, chlorophyllin, chlorophyllin a, chlorophyllin copper complex;

chlorophylllypt, Chlorophylllypt, chlorophylllypt;

chlorpromazine, 3-(2-chloro-10H-phenothiazin-10-yl)-N,N-dimethyl-1-propanamine, 3-(2-chloro-10H-phenothiazin-10-yl)-N,N-dimethylpropan-1-amine, 3-(2-chlorophenothiazin-10-yl)-N,N-

dimethyl-propan-1-amine;

Chlorpropham, Chlorpropham, CIPC, Isopropyl N-(3-Chlorophenol) carbamate;

Chlorzoxazone, Chlorzoxazone, McNeil Brand of Chlorzoxazone, Ortho Brand of Chlorzoxazone;

Cholestanol, 5 alpha Cholestan 3 alpha ol, 5 alpha Cholestan 3 beta ol, 5 alpha-Cholestan-3 alpha-ol;

CHOLINE, (2-Hydroxyethyl)trimethylammonium, (2-Hydroxyethyl)trimethylammonium chloride, (beta-hydroxyethyl)trimethylammonium;

Chonsurid, (2S,3S,4S,5R,6R)-6-[(2R,3R,4R,5R,6R)-3-acetamido-2,5-dihydroxy-6-sulfooxy-oxan-4-yl]oxy-3,4,5-trihydroxy-oxane-2-carboxylic acid, (2S,3S,4S,5R,6R)-6-[(2R,3R,4R,5R,6R)-3-acetamido-2,5-dihydroxy-6-sulfooxy-tetrahydropyran-4-yl]oxy-3,4,5-trihydroxy-tetrahydropyran-2-carboxylic acid,

(2S,3S,4S,5R,6R)-6-[(2R,3R,4R,5R,6R)-3-acetamido-2,5-dihydroxy-6-sulfooxyoxan-4-yl]oxy-3,4,5-trihydroxyoxane-2-carboxylic acid; chromophore, chromophore, chromophores;

Chrysin, 4H-1-Benzopyran-4-one, 5,7-dihydroxy-2-phenyl-, 4H-1-Benzopyran-4-one, 5,7-dihydroxy-2-phenyl- (9CI), 5,7-dihydroxy-2-phenyl-4-chromenone;

chymostatin, chymostatin;

CI1033, Canertinib, CI 1033, CI-1033;

cicaprost, 13,14-didehydro-16,20-dimethyl-3-oxa-18,18,19,19-tetradehydro-6-carbaprostaglandin I2, 5-(7-hydroxy-6-(3-hydroxy-4-methylnona-1,6-diynyl)-bicyclo(3.3.0)octan-3-yliden)-3-oxapentanoic acid, cicaprost;

cifostodine, cifostodine;

ciglitazone, 5-(4-(1-methylcyclohexylmethoxy)benzyl)thiazolidine-2,4-dione, ADD 3878, ADD-3878;

Cilazapril, Cilazapril, Cilazapril Hydrate, Cilazapril Monohydrobromide;

Cilomilast, Cilomilast;

cilostazol, 6-(4-(1-cyclohexyl-1H-tetrazol-5-yl)butoxy)-3,4-dihydro-2(1H)-quinolinone, cilostazol, OPC 13013;

Cimetidine, Altramet, Biomet, Biomet400;

cinacalcet, alpha-methyl-N-(3-(3-(trifluoromethyl)phenyl)propyl)-1-naphthalenemethanamine, (alphaR)-hydrochloride, AMG 073, AMG073;

cinitapride, Almirall brand of cinitapride tartrate, Blaston, Cidine;

cinnamic aldehyde, 3-phenylprop-2-enaldehyde, beta-phenylacrolein, cinnamaldehyde;

cionin, Asn-Tyr(SO₃)-Tyr(SO₃)-Gly-Trp-Met-Asp-Phe-NH₂, cionin;

Cipol N, (R-(R*,R*-(E)))-Cyclic(L-alanyl-D-alanyl-N-methyl-L-leucyl-N-methyl-L-leucyl-N-methyl-,

1,4,7,10,13,16,19,22,25,28,31-undecaazacyclotritriacontane-2,5,8,11,14,17,20,23,26,29,32-, 30-ethyl-33-[(Z,1S,2R)-1-hydroxy-2-methyl-hex-4-enyl]-1,4,7,10,12,15,19,25,28-nonamethyl-6,9,18,24-tetrakis(2-methylpropyl)-3,21-di(propan-2-yl)-1,4,7,10,13,16,19,22,25,28,31-undecazacyclotritriacontane-2,5,8,11,14,17,20,23,26,29,32-undecone;

Ciprofloxacin, Bay 09867, Bay-09867, Bay09867;

Ciprol, 2-(4-(2,2-Dichlorocyclopropyl)phenoxy)2-methylpropanoic acid, 2-(p-(2,2-Dichlorocyclopropyl)phenoxy)-2-methylpropionic acid, 2-[4-(2,2-dichlorocyclopropyl)phenoxy]-2-methyl-propanoic acid;

cis-9, trans-11-conjugated linoleic acid, c9-t11-CLA, cis-9, trans-11-conjugated linoleic acid;

Cisapride, Cisapride, Propulsid, R 51619;

Citalopram, Citalopram, Cytalopram, Escitalopram;

Citox, .alpha.,.alpha.-Bis(p-chlorophenyl)-.beta.,.beta.,.beta.-trichlorethane, 1,1'-(2,2,2-trichloroethane-1,1-diyl)bis(4-chlorobenzene), 1,1'-(2,2,2-Trichloroethylidene)bis(4-chlorobenzene);

CITRULLINE, (2S)-2-amino-5-(aminocarbonylamino)pentanoic acid, (2S)-2-amino-5-(carbamoylamino)pentanoic acid, (2S)-2-amino-5-ureido-pentanoic acid;

clebopride, clebopride, clebopride fumarate (1:1), clebopride maleate;

clevidipine, butyroxymethyl methyl 4-(2',3'-dichlorophenyl)-2,6-dimethyl-1,4-dihydropyridine-3,5-dicarboxylate, clevidipine;

clobazam, clobazam;

Clodronic Acid, Bonefos, Cl2MDP, Clodronate;

clofarabine, 2-chloro-2'-arabino-fluoro-2'-deoxyadenosine, 2-chloro-2'-fluoroarabino-2'-deoxyadenosine, 2-chloro-9-(2-deoxy-2-fluoro-beta-D-arbinofuranosyl)adenine;

Clofibric Acid, 2-(4-Chlorophenoxy)-2-methylpropionic Acid, Clofibric Acid, Clofibrinic Acid;

Clomipramine, Anafranil, Chlomipramine, Chlorimipramine;
Clonazepam, Antelepsin, Clonazepam, Rivotril;
Clonidine, Catapres, Catapresan, Catapressan;
clopidogrel, clopidogrel, clopidogrel bisulfate, clopidogrel,
(+)(S)-isomer;
clotiazepam, clotiazepam;
Clozapine, Clozapine, Clozaril, Leponex;
clozapine N-oxide, clozapine N-oxide;
CNI 1493, CNI 1493, CNI-1493, N,N'-bis(3,5-
diacetylphenyl)decanediamide tetrakis(amidinohydrazone) tetrahy-
drochloride;
Co 2-1970, 1-[(3S,5S,8R,9S,10S,13S,14S,17S)-3-hydroxy-10,13-
dimethyl-3-(trifluoromethyl)-1,2,4,5,6,7,8,9,11,12,14,15,16,17-
tetradecahydrocyclopenta[α]phenanthren-17-yl]ethanone, 3α-Hydroxy-3β-(trifluoromethyl)-5α-pregnan-20-one, 3α-Hydroxy-3β-trifluoromethyl-5α-pregnan-20-one;
Coagulin, antigens, cd142, blood coagulation factor iii, cd142
antigens;
Colchicine, Colchicine;
compactin, 6-demethylmevinolin, compactin, CS 500;
CONT, 1-(.beta.-Ethylol)-2-methyl-5-nitro-3-azapyrrole, 1-
(.beta.-Hydroxyethyl)-2-methyl-5-nitroimidazole, 1-(2-Hydroxy-1-
ethyl)-2-methyl-5-nitroimidazole;
Cotinine, Cotinine, Scotine;
Cotrim, 3-(p-Aminophenylsulfonamido)-5-methylisoxazole, 3-(para-
Aminophenylsulphonamido)-5-methylisoxazole, 3-Sulfanilamido-5-
methylisoxazole;
coumarin, 1,2-Benzopyrone, 2-Propenoic acid, 3-(2-
hydroxyphenyl)-, d-lactone, 2H-1-Benzopyran-2-one;
CRA 024781, CRA 024781, CRA-024781, CRA024781;
CRA 026440, CRA 026440, CRA-026440, CRA026440;
Crestor, calcium (E,3R,5S)-7-[4-(4-fluorophenyl)-2-(methyl-
methylsulfonyl-amino)-6-propan-2-yl-pyrimidin-5-yl]-3,5-
dihydroxy-hept-6-enoate, calcium (E,3R,5S)-7-[4-(4-
fluorophenyl)-2-(methyl-methylsulfonylamino)-6-propan-2-
ylpyrimidin-5-yl]-3,5-dihydroxyhept-6-enoate, calcium (E,3R,5S)-
7-[4-(4-fluorophenyl)-6-isopropyl-2-(mesyl-methyl-
amino)pyrimidin-5-yl]-3,5-dihydroxy-hept-6-enoate;
Crodacid, 1-Tridecanecarboxylic acid, C14 fatty acid, CH3-
[CH2]12-COOH;

Crypt-2,2,2, 13,16,21,24-Hexaoxa-1,10-diazabicyclo-(8,8,8)-hexacosane, 2,2,2-Cryptand, 4,7,13,16,21,24-Hexaoxa-1,10-diazabicyclo(8.8.8)hexacosane;
cryptdin 3, cryptdin 3, cryptdin-3;
cryptotanshinone, cryptotanshinone;
cryptoxanthin, beta-caroten-3-ol, beta-cryptoxanthin, cryptoxanthin;
CUBE, (-)-cis-Rotenone, (-)-Rotenone, (1)Benzopyrano(3,4-b)furo(2,3-h)(1)benzopyran-6(6aH)-one, 1,2,12,12a-tetrahydro-2-alpha-isopropenyl-8,9-dimethoxy-;
CVT 3146, (1-(9-(3,4-dihydroxy-5-(hydroxymethyl)oxolan-2-yl)-6-aminopurin-2-yl)pyrazol-4-yl)-N-methylcarboxamide, CVT 3146, CVT-3146;
cyanidin 3-rutinoside, cyanidin 3-rutinoside;
cyanidin-3-glucoside, cyanidin-3-glucoside;
cyanoginosin-LA, cyanoginosin-LA, cyanogynosin-LA, microcystin LA;
Cyclandelate, Cyclandelate, Cyclospasmol;
cyclohexyl carbamic acid 3'-carbamoylebiphenyl-3-yl ester, cyclohexyl carbamic acid 3'-carbamoylebiphenyl-3-yl ester, URB 597, URB-597;
cyclohexyl-methyl, cyclohexyl-methyl;
cyclopamine, cyclopamine;
Cyclopentenone, 1-cyclopent-2-enone, 2-Cyclopenten-1-one, 2-Cyclopenten-1-one (8CI) (9CI);
cyclopiazonic acid, cyclopiazonic acid;
Cyproheptadine, Antergan,
Cyproheptadine, Dihexazin;
Cyproterone Acetate, Androcur, Cyproterone Acetate, Cyproterone Acetate, (1 alpha,2 alpha)-Isomer;
cystathionine, 2-amino-4-[(2-amino-2-carboxyethyl)sulfanyl]butanoic acid, cystathionine, DL-Allocystathionine;
cysteamine, 2-amino-1-ethanethiol, 2-aminoethanethiol, beta-Aminoethanethiol;
cysteiny-leukotriene, Cys-LT, cysteiny-leukotriene;
Cytarabine, Ara-C, Arabinofuranosylcytosine, Arabinosylcytosine;
cytochalasin B, cytochalasin B;
Cytochalasin D, Cytochalasin D;
cytochalasin E, cytochalasin E;

D 22888, D 22888;
D 23129, D 20443, D 23129, D-20443;
DA 8159, 5-(2-propyloxy-5-(1-methyl-2-pyrrolidinylolethylamidodisulfonyl)phenyl)-1-methyl-3-propyl-1,6-dihydro-7H-pyrazolo (4,3-d) pyrimidine-7-one, DA 8159, DA-8159;
Dacarbazine, 5-(3,3-Dimethyl-1-triazeno)imidazole-4-carboxamide, Biocarbazine, Dacarbazine;
DADSO, 2-Propene-1-sulfinic acid, thio-, S-allyl ester, 2-Propene-1-sulfinothioic acid S-2-propenyl ester, 2-Propene-1-sulfinothioic acid, S-2-propenyl ester (9CI);
daidzein, daidzein, diadzein;
danaproid, danaparoid, danaproid, danaproid sodium;
Dapsone, 4,4'-Diaminophenyl Sulfone, Avlosulfone, DADPS;
Daral, 3-[(2E)-2-[1-(5,6-dimethylhept-3-en-2-yl)-7a-methyl-2,3,3a,5,6,7-hexahydro-1H-inden-4-ylidene]ethylidene]-4-methylidene-cyclohexan-1-ol, 3-[(2E)-2-[1-(5,6-dimethylhept-3-en-2-yl)-7a-methyl-2,3,3a,5,6,7-hexahydro-1H-inden-4-ylidene]ethylidene]-4-methylidenecyclohexan-1-ol, 3-[(2E)-2-[7a-methyl-1-(1,4,5-trimethylhex-2-enyl)-2,3,3a,5,6,7-hexahydro-1H-inden-4-ylidene]ethylidene]-4-methylene-1-cyclohexanol;
Darifenacin, 2-[(3S)-1-[2-(2,3-dihydro-1-benzofuran-5-yl)ethyl]pyrrolidin-3-yl]-2,2-di(phenyl)acetamide, 2-[(3S)-1-[2-(2,3-dihydro-1-benzofuran-5-yl)ethyl]pyrrolidin-3-yl]-2,2-di(phenyl)ethanamide, 2-[(3S)-1-[2-(2,3-dihydrobenzofuran-5-yl)ethyl]-3-pyrrolidinyl]-2,2-di(phenyl)acetamide;
darunavir, darunavir, darunavir ethanolate, Prezista;
dasatinib, (18F)-N-(2-chloro-6-methylphenyl)-2-(6-(4-(2-hydroxyethyl)piperazin-1-yl)-2-methylpyrimidin-4-ylamino)thiazole-5-carboxamide, BMS 354825, BMS-354825;
Daunorubicin, Cerubidine, Dauno Rubidomycine, Dauno-Rubidomycine;
Dayfen, 1-Methyl-4-piperidyl benzhydryl ether, 132-18-3 (HCL), 4-(Benzhydryloxy)-1-methylpiperidine;
DBPC, (2,5-Cyclohexadiene-1,4-diylidene)-dimalononitrile, 1-Hydroxy-4-methyl-2,6-di-tert-butylbenzene, 2,6-Bis(1,1-dimethylethyl)-4-methylphenol;
DDB, DDB;
DDE, 1,1-Dichloro-2,2-bis(4'-chlorophenyl)ethylene, 1-chloro-4-[2,2-dichloro-1-(4-chlorophenyl)ethenyl]benzene, 4,4'-DDE;
Debrisoquin, Debrisoquin, Debrisoquine, Tendor;

decursin, decursin, decursinol;
Deethylamiodarone, (2-butyl-1-benzofuran-3-yl)-[4-(2-ethylaminoethoxy)-3,5-diiodo-phenyl]methanone, (2-butyl-1-benzofuran-3-yl)-[4-(2-ethylaminoethoxy)-3,5-diiodophenyl]methanone, (2-Butyl-3-benzofuranyl) (4-(2-(ethylamino)ethoxy)-3,5-diiodophenyl)methanone;
deferiprone, 1,2-dimethyl-3-hydroxy-4-pyridinone, 1,2-dimethyl-3-hydroxypyrid-4-one, 1,2-dimethyl-3-hydroxypyridin-4-one;
Deferoxamine, Deferoxamine, Deferoxamine B, Deferoxamine Mesilate;
deguelin, deguelin;
dehydroaripiprazole, dehydroaripiprazole;
Dehydroepiandrosterone Sulfate, Dehydroepiandrosterone Sulfate, Dehydroisoandrosterone Sulfate, DHA Sulfate;
dehydroxymethylepoxyquinomicin, dehydroxymethylepoxyquinomicin, DHMEQ cpd;
Delavirdine, Agouron Brand of Delavirdine Mesylate, Delavirdine, Delavirdine Mesylate;
delta8-THC, (-)-.delta.-(sup8)-trans-Tetrahydrocannabinol, (-)-.DELTA.6-Tetrahydrocannabinol, (-)-.DELTA.8-Tetrahydrocannabinol;
Denagard, (4R,5S,6S,8R,9AR,10R)-5-HYDROXY-4,6,9,10-TETRAMETHYL-1-OXO-6-VINYLDCAHYDRO-3A,9-PROPANOCYCLOPENTA[8]ANNULEN-8-YL { [2-(DIETHYLAMINO)ETHYL] SULFANYL}ACETATE, Denagard, Denagard (TN);
denbinobin, 5-hydroxy-3,7-dimethoxy-1,4-phenanthraquinone, denbinobin;
denileukin diftitox, DAB(389)-IL-2, DAB(389)-interleukin 2, DAB(389) IL-2;
denopamine, (3,4-dimethoxyphenethylaminomethyl)-4-hydroxybenzyl alcohol, 1-(p-hydroxyphenyl)-2-((3,4-dimethoxyphenethyl)amino)ethanol, denopamine;
Depas, 4-(2-chlorophenyl)-2-ethyl-9-methyl-6H-thieno[3,2-f][1,2,4]triazolo[4,3-a][1,4]diazepine, 4-(o-Chlorophenyl)-2-ethyl-9-methyl-6H-thieno(3,2-f)-s-triazolo(4,3-a)(1,4)diazepine, 4H-s-Triazolo(3,4-c)thieno(2,3-e)(1,4)-diazepine, 6-(o-chlorophenyl)-8-ethyl-1-methyl-;
deramciclone, 2-phenyl-2-(dimethylaminoethoxy)-1,7,7-trimethylbicyclo(2.2.1)heptane hemifumarate, deramciclone, deramciclone, (1R,2S,4R)-isomer;

desethylchloroquine, deethylchloroquine, desethylchloroquine, desethylchloroquine dihydrochloride;

desflurane, Baxter Anaesthesia brand of desflurane, Baxter brand of desflurane, desflurane;

desisobutyrylciclesonide, desisobutyryl-ciclesonide, desisobutyrylciclesonide;

desmethylazelastine, desmethylazelastine;

Desmethyldeprenyl, (1-methyl-2-phenyl-ethyl)-propargyl-amine, 1-Phenyl-2-(N-2-propynyl)aminopropane, alpha-Methyl-N-2-propynylbenzeneethanamine;

Devazepide, Devazepide, L-364,718, MK 329;

Dexfenfluramine, Dexfenfluramine, Dexfenfluramine Hydrochloride, Redux;

dexloxiglumide, dexloxiglumide;

Dextropropoxyphene, D Propoxyphene, D-Propoxyphene, Darvon;

dFdC, 122111-03-9 (HYDROCHLORIDE), 2',2'-DiF-dC, 2',2'-DIFLUORODEOXYCYTIDINE;

DFMO, .alpha.-DFMO HCl, 2,5-diamino-2-(difluoromethyl)pentanoic acid, 2,5-diamino-2-(difluoromethyl)valeric acid;

DHEA, (+)-Dehydroisoandrosterone, (3-beta)-3-Hydroxyandrost-5-en-17-one, (3beta)-3-hydroxyandrost-5-en-17-one;

DHLA, ()-6,8-Dimercaptooctanoic acid, ()-Dihydrolipoic acid, 6,8-bis-sulfanyloctanoic acid;

di-(1-isoquinolinyl)-di-(pyridyl-2')butane, di-(1-isoquinolinyl)-di-(pyridyl-2')butane, S-147;

Diaben, 1-butyl-3-(4-methylphenyl)sulfonyl-urea, 1-butyl-3-(4-methylphenyl)sulfonylurea, 1-Butyl-3-(4-methylphenylsulfonyl)urea;

Diacomit, (E)-1-(1,3-benzodioxol-5-yl)-4,4-dimethyl-pent-1-en-3-ol, (E)-1-(1,3-benzodioxol-5-yl)-4,4-dimethylpent-1-en-3-ol, 1-(1,3-Benzodioxol-5-yl)-4,4-dimethyl-1-penten-3-ol;

diadenosine tetraphosphate, diadenosine tetraphosphate;

Dial, 1,4-Pentanediamine, N4-(6-chloro-2-methoxy-9-acridinyl)-N1,N1-diethyl-, 2-Methoxy-6-chloro-9-diethylaminopentylaminoacridine, 3-Chloro-7-methoxy-9-(1-methyl-4-diethylaminobutylamino)acridine;

Diamide, Diamide, Diazodicarboxylic Acid Bis(N,N-dimethyl)amide, Diazodicarboxylic Acid Bisdimethylamide;

DIAN, .beta.,.beta.'-Bis(p-hydroxyphenyl)propane, .beta.-Di-(p-hydroxyphenyl)propane, 2,2-(4,4'-Dihydroxydiphenyl)propane;

diarsenic trioxide, Arsenic trioxide, arsenic(III) oxide, As₂O₃;
Dibenzanthracene, 1,2,3,4-DIBENZANTHRACENE, 1,2:3,4-
Dibenzanthracene, 1,2:3,4-Dibenzoanthracene;
Dicid, Alfa-Tox, Antigal, Bassadinon;
Diclofenac, Dichlofenal, Diclofenac, DICLOFENAC NA;
Dicyclohexylcarbodiimide, DCCD, Dicyclohexylcarbodiimide;
diethyl maleate, diethyl maleate;
Diethyl-benzoquinone-imine, Diethyl-benzoquinone-imine;
Digicor, 4-[(3S,5R,8R,9S,10S,13R,14S,17S)-3-[(2R,4S,5S,6R)-5-
[(2S,4S,5S,6R)-5-[(2S,4S,5S,6R)-4,5-dihydroxy-6-methyl-oxan-2-
yl]oxy-4-hydroxy-6-methyl-oxan-2-yl]oxy-4-hydroxy-6-methyl-oxan-
2-yl]oxy-14-hydroxy-10,13-dimethyl-
1,2,3,4,5,6,7,8,9,11,12,15,16,17-tetradeca, 4-
[(3S,5R,8R,9S,10S,13R,14S,17S)-3-[(2R,4S,5S,6R)-5-
[(2S,4S,5S,6R)-5-[(2S,4S,5S,6R)-4,5-dihydroxy-6-methyl-
tetrahydropyran-2-yl]oxy-4-hydroxy-6-methyl-tetrahydropyran-2-
yl]oxy-4-hydroxy-6-methyl-tetrahydropyran-2-yl]oxy-14-hydroxy-
10,13-dimethyl-1,2,3,4,5, 4-[(3S,5R,8R,9S,10S,13R,14S,17S)-3-
[(2R,4S,5S,6R)-5-[(2S,4S,5S,6R)-5-[(2S,4S,5S,6R)-4,5-dihydroxy-
6-methyloxan-2-yl]oxy-4-hydroxy-6-methyloxan-2-yl]oxy-4-hydroxy-
6-methyloxan-2-yl]oxy-14-hydroxy-10,13-dimethyl-
1,2,3,4,5,6,7,8,9,11,12,15,16,17-tetradecahyd;
Digitin, .beta.-D-Galactopyranoside,
(2.alpha.,3.beta.,5.alpha.,15.beta.,25R)-2,15-
dihydroxyspirostan-3-yl O-.beta.-D-glucopyranosyl-(1.fwdarw.3)-
O-.beta.-D-galactopyranosyl-(1.fwdarw.2)-O-[(.beta.-D-
xylopyranosyl-(1.fwdarw.3)]-O-.beta.-D-glucopyranosyl-
(1.fwdarw.4, Digitin, Digitogenin, glycoside;
Digoxin, AWD.pharma Brand of Digoxin, Bertek Brand of Digoxin,
Digacin;
Dihydroqinghaosu, 3,12-Epoxy-12H-pyrano(4,3-j)-1,2-
benzodioxepin-10-ol, decahydro-3,6,9-trimethyl-,
(3R,5aS,6R,8aS,9R,10S,12R,12aR)-, 3,12-Epoxy-12H-pyrano(4,3-j)-
1,2-benzodioxepin-10-ol, decahydro-3,6,9-trimethyl-, (3R-
(3alpha,5abeta,6beta,8abeta,9alpha,10alpha,12beta,12aR*))-, Di-
hydroartemisinin;
Dihydroxycholecalciferols, Dihydroxycholecalciferols, Dihy-
droxyvitamins D;
diisopropyl fluorophosphate, bis(propan-2-yl) fluorophosphate,
Diisopropoxyphosphoryl fluoride, diisopropyl fluorophosphate;

dillapiol, dillapiol;
Diltiazem, Aldizem, Cardil, Cardizem;
Dimethadione, 5,5-Dimethyl-2,4-oxazolidinedione, 5,5-Dimethyloxazolidine-2,4-dione, Dimethadione;
dimethyl fumarate, dimethyl fumarate, dimethylfumarate, Fumaderm;
Dimethyl Sulfoxide, Dimethyl Sulfoxide, Dimethyl Sulphoxide, Dimethylsulfoxide;
dimethyl-hydrazide, dimethyl-hydrazide;
dimethylamino-purine, dimethylamino-purine;
dimuonium, $(\mu(+))e(-))_2$, dimuonium, Mu_2 ;
dinitrophenol, dinitrophenol;
Dinoprostone, Dinoprostone, PGE2, PGE2 alpha;
dioxirane, dioxirane;
Dipalmitoyl, 1,2-Di-O-palmitoyl-3-sn-glyceryl-O-phosphoric acid, 1,2-dihexadecanoyl-sn-glycero-3-phosphate, 1,2-Dipalmitoyl-3-sn-phosphatidic acid;
diphenylalanine, diphenylalanine;
Diphenylamine, Diphenylamine;
diphenyleneiodonium, diphenylene iodonium, diphenyleneiodium chloride, diphenyleneiodonium;
Dipyridamole, Antistenocardin, Apo-Dipyridamole, Apotex Brand of Dipyridamole;
Dipyrone, Algopyrin, Analgin, Biopyrin;
discodermolide, discodermolide;
Diterpenes, Cembrane Diterpenes, Cembranes, Diterpenes;
Dithionite, Dithionite, Hyposulfite, Sodium Dithionite;
diuretic, diuretic, diuretics;
Diuron, 3-(3,4-Dichlorophenyl)-1,1-dimethylurea, DCMU, Diuron;
divinyl benzene, divinyl benzene;
dl-Ipr, (+)-Isoprenaline, (+)-Isoproterenol, (+-)-Isoprenaline;
DMGG, 1,1-Dimethyl biguanide, 1,1-Dimethylbiguanide, 1115-70-4 (HCL);
DMPX, 1H-Purine-2,6-dione, 3,7-dihydro-3,7-dimethyl-1-(2-propynyl)-, 3,7-Dimethyl-1-(2-propynyl)xanthine, 3,7-dimethyl-1-prop-2-ynyl-purine-2,6-dione;
DMSO, $(\text{CH}_3)_2\text{SO}$, (DMSO), (methanesulfinyl)methane;
Dobutamine, Boehringer Ingelheim Brand of Dobutamine Hydrochloride, Dobucor, Dobuject;

Doca, 11-Dehydroxycorticosterone, 11-Deoxycorticosterone, 11-Desoxycorticosterone;

Doconexent, (4Z,7Z,10Z,13Z,16Z,19Z)-4,7,10,13,16,19-Docosahexaenoic acid, (4Z,7Z,10Z,13Z,16Z,19Z)-docosa-4,7,10,13,16,19-hexaenoic acid, (4Z,7Z,10Z,13Z,16Z,19Z)-Docosahexaenoic acid;

dodecyl-phosphocholine, dodecyl-phosphocholine;

dodecyloctaethyleneglycol monoether, dodecyloctaethyleneglycol monoether;

Domperidone, Aliud Brand of Domperidone Maleate, Apo Domperidone, Apo-Domperidone;

DOTA, 1,4,7,10-Dota, 1,4,7,10-tetraazacyclododecane-1,4,7,10-tetraacetic acid, 1,4,7,10-Tetraazacyclododecane-1,4,7,10-tetraacetic acid;

Doxazosin, 1 (4-Amino-6,7-dimethoxy-2-quinazolinyl)-4-((2,3-dihydro-1,4-benzodioxin-2-yl)carbonyl)piperazine, Alfamedin, Aliud Brand of Doxazosin Mesylate;

Doxorubicin, Adriablastin, Adriablastine, Adriamycin;

Doxycycline, alpha 6 Deoxyoxytetracycline, alpha-6-Deoxyoxytetracycline, BMY 28689;

DPC 681, DPC 681;

DPCPX, 1,3-Dipropyl-8-cyclopentylxanthine, 1,3-Dpcpx, 1H-Purine-2,6-dione, 8-cyclopentyl-3,7-dihydro-1,3-dipropyl-;

Droxia, 1-HYDROXYUREA, Biosupressin, Carbamohydroxamic acid;

DTMC, 1,1-bis(4-chlorophenyl)-2,2,2-trichloroethanol, 1,1-Bis(chlorophenyl)-2,2,2-trichloroethanol, 1,1-bis(p-chlorophenyl)-2,2,2-trichloroethanol;

dulcin, dulcin, p-ethoxyphenylurea, phenetolcarbamide;

Durapatite, Alveograf, Calcitite, Calcium Hydroxyapatite;

DX 9065a, DX 9065a;

Dxms, (11beta,16alpha)-9-Fluoro-11,17,21-trihydroxy-16-methylpregna-1,4-diene-3,20-dione, (11beta,16beta)-9-fluoro-11,17,21-trihydroxy-16-methylpregna-1,4-diene-3,20-dione, (3H)-Dexamethasone;

Dynatra, (3H)-Dopamine, .alpha.-(3,4-Dihydroxyphenyl)-.beta.-aminoethane, .Beta.-(3,4-Dihydroxyphenyl)ethylamine hydrochloride;

E 10, E 10, E-10, N-(2-aminoethyl)-N-(2-(octylamino)ethyl)glycine monohydrochloride, mixt. with N,N-bis(2-(octylamino)ethyl)glycine monohydrochloride;

E 3330, E 3330;

E-MIX 80, .gamma.-Tocopherol, 2,7,8-trimethyl-2-(4,8,12-trimethyltridecyl)-6-chroman-6-ol, 2,7,8-trimethyl-2-(4,8,12-trimethyltridecyl)chroman-6-ol;

E.O., 1,2-Epoxyethane, Alpha,beta-oxidoethane, alpha-Hydro-omega-hydroxypoly(oxy(methyl-1,2-ethanediyl)), (chloromethyl)oxirane polymer;

EACA, .epsilon. S, .epsilon.-Aminocaproic acid, .epsilon.-Aminohexanoic acid;

ebastine, 4-diphenylmethoxy-1-(3-(4-tert-butylbenzoyl)propyl)piperidine, Almirall brand of ebastine, Bactil;

ebrotidine, 4-bromo-N-(((2-(((di-aminomethylene)amino)-4-thiazolyl)methyl)thio)ethyl)amino)methylene)benzenesulfonamide, ebrotidine;

Echinomycin, Echinomycin, NSC 526417, NSC-526417;

Econ, (-)-alpha-Tocopherol, (+)-alpha-Tocopherol acetate, (+)-alpha-Tocopheryl acetate;

econazole, 1-(2,4-Dichloro-beta-(p-chlorobenzyl)oxy)phenethyl)imidazole, 1-{2-(4-chlorobenzyloxy)-2-(2,4-dichlorophenyl)ethyl}-1H-imidazole,
Clc1ccc(COC(Cn2ccnc2)c3ccc(Cl)cc3Cl)cc1;

ecteinascidin 743, ecteinascidin 743, ET 743, ET-743;

Edetic Acid, Calcium Disodium Edetate, Calcium Disodium Versenate, Calcium Tetacine;

Edex, (11alpha,13E,15S)-11,15-dihydroxy-9-oxoprost-13-en-1-oic acid, (11alpha,13E,15S)-11,15-Dihydroxy-9-oxoprost-13-enoic acid, (13E)-(15S)-11alpha,15-Dihydroxy-9-oxoprost-13-enoate;

efavirenz, 6-chloro-4-cyclopropylethynyl-4-trifluoromethyl-1,4-dihydro-2H-3,1-benzoxazin-2-one, Bristol-Myers Squibb brand of efavirenz, DMP 266;

EGCg, (−)-cis-2-(3,4,5-Trihydroxyphenyl)-3,4-dihydro-1(2H)-benzopyran-3,5,7-triol 3-gallate, (−)-cis-3,3′,4′,5,5′,7-Hexahydroxy-flavane-3-gallate, (−)-Epigallocatechin gallate;

EGTA, (Ethylenebis(oxyethylenenitrilo))tetraacetic acid, 1,2-Bis(2-aminoethoxyethane)-N,N,N',N'-tetraacetic acid, 1,2-Bis(2-dicarboxymethylaminoethoxy)ethane;

eletriptan, 3-(1-methyl-2-pyrrolidinylmethyl)-5-(2-(phenylsulfonyl)ethyl)-1H-indole hydrobromide, eletriptan, elet-

riptan hydrobromide;

Elicide, Elicide, Estivin, Ethylmercurithiosalicylate sodium;
Empecid, (2-Chlorophenyl)diphenyl-1-imidazolylmethane, (Chlorotriptyl)imidazole, 1-((2-Chlorophenyl)diphenylmethyl)-1H-imidazole;

Enalapril, Enalapril, Enalapril Maleate, MK 421;

Endocannabinoids, CANNABINOID RECEPT MODULATORS, Cannabinoid Receptor Modulators, Cannabinoids, Endogenous;

endomorphin 1, (Dmt1)endomorphin-1, endomorphin 1, endomorphin-1;

Enediynes, Enediyne Group, Enediynes;

enflurane, 2-chloro-1,1,2-trifluoroethyl difluoromethyl ether, 2-chloro-1-(difluoromethoxy)-1,1,2-trifluoroethane, Alyrane; enone, enone;

Enoximone, Enoximone, Fenoximone, MDL 17043;

entacapone, 2-cyano-N,N-diethyl-3-(3,4-dihydroxy-5-nitrophenyl)propenamide, Comtan, Comtess;

Entex, 4-Methylmercapto-3-methylphenyl dimethyl thiophosphate, Bay-Bassa, Baycid;

enzastaurin, enzastaurin, LY317615.HCl;

EOS, EOS;

EPC-K(1), ascorbic acid-2-(3,4-dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-2H-1-benzopyran-6-yl hydrogen phosphate), EPC-K, EPC-K(1);

EPGE, (-)-Etoposide, (5R,5aR,8aR,9S)-9-[[(2R,4aR,6R,7R,8R,8aS)-7,8-dihydroxy-2-methyl-4,4a,6,7,8,8a-hexahydropyrano[5,6-d][1,3]dioxin-6-yl]oxy]-5-(4-hydroxy-3,5-dimethoxy-phenyl)-5a,8,8a,9-tetrahydro-5H-isobenzofurano[6,5-f][1,3]benzodioxol-6-one, (5R,5aR,8aR,9S)-9-[[(2R,4aR,6R,7R,8R,8aS)-7,8-dihydroxy-2-methyl-4,4a,6,7,8,8a-hexahydropyrano[5,6-d][1,3]dioxin-6-yl]oxy]-5-(4-hydroxy-3,5-dimethoxyphenyl)-5a,8,8a,9-tetrahydro-5H-isobenzofurano[6,5-f][1,3]benzodioxol-6-one;

EPIB, .alpha.-(p-Chlorophenoxy)isobutyric acid, ethyl ester, .alpha.-p-Chlorophenoxyisobutyryl ethyl ester, 19 more names available;

epibatidine, epibatidine;

Epicar, (+)-pilocarpine, (3S,4R)-3-ethyl-4-[(1-methyl-1H-imidazol-5-yl)methyl]dihydrofuran-2(3H)-one, (3S,4R)-3-ethyl-4-[(3-methyl-4-imidazolyl)methyl]-2-tetrahydrofuranone;

Epoprostenol, Epoprostanol, Epoprostenol, Epoprostenol Sodium;

epoxybergamottin, epoxybergamottin;
epsilon-viniferin, epsilon-viniferin;
erastin, erastin;
ergosterol-5,8-peroxide, 3-hydroxy-5,7-epidioxyergosta-6,22-diene, 5,8-epidioxyergosta-6,22-dien-3-ol, ergosterol endoperoxide;
Eril, (5-ISOQUINOLINESULFONYL)HOMOPIPERAZINE, 1-(5-Isoquinolinesulfonyl)homopiperazine, 1-(5-Isoquinolinesulphonyl)homopiperazine;
erlotinib, CP 358,774, CP 358774, CP-358,774;
erucin, erucin;
Eryc, 6-(4-dimethylamino-3-hydroxy-6-methyl-oxan-2-yl)oxy-14-ethyl-7,12,13-trihydroxy-4-(5-hydroxy-4-methoxy-4,6-dimethyl-oxan-2-yl)oxy-3,5,7,9,11,13-hexamethyl-1-oxacyclotetradecane-2,10-dione, 6-(4-dimethylamino-3-hydroxy-6-methyl-tetrahydropyran-2-yl)oxy-14-ethyl-7,12,13-trihydroxy-4-(5-hydroxy-4-methoxy-4,6-dimethyl-tetrahydropyran-2-yl)oxy-3,5,7,9,11,13-hexamethyl-1-oxacyclotetradecane-2,10-dione, 6-(4-dimethylamino-3-hydroxy-6-methyl-tetrahydropyran-2-yl)oxy-14-ethyl-7,12,13-trihydroxy-4-(5-hydroxy-4-methoxy-4,6-dimethyl-tetrahydropyran-2-yl)oxy-3,5,7,9,11,13-hexamethyl-1-oxacyclotetradecane-2,10-quinone;
erythritol anhydride, erythritol anhydride;
esterbut-3, esterbut-3;
Estriol, 16 alpha Hydroxy Estradiol, 16 Epiestriol, 16 Hydroxyestradiol;
ET18-Ome, ()-ET-18-OCH₃, ()-ET-18-OMe, (2-methoxy-3-octadecoxy-propyl) 2-trimethylammonioethyl phosphate;
Etfc cpd, 2H-1-Benzopyran-2-one, 7-ethoxy-4-(trifluoromethyl)-, 7-ethoxy-4-(trifluoromethyl)-2-chromenone, 7-Ethoxy-4-(trifluoromethyl)-2H-1-benzopyran-2-one;
Ethacrynic Acid, Edecrin, Etacrynic Acid, Ethacrinic Acid;
Ethan, Aethan, Alkanes, C1-2, Alkanes, C2-3;
Ethinyl-oestradiol, Ethinyl-oestradiol;
Ethylmorphine, Dionine, Ethomorphine, Ethylmorphine;
Ethynodiol Diacetate, (3 beta, 17 alpha)-19-Norpregn-4-en-20-yne-3,17 diol Diacetate, Continuin, Ethyndiol Diacetate;
Eticol, Chinorta, Chinorto, diethyl (4-nitrophenyl) phosphate;
Etidronic Acid, (1-hydroxyethylene)diphosphonic acid, (1-hydroxyethylene)diphosphonic acid, Tetrapotassium Salt, 1,1-

hydroxyethylenediphosphonate;

Etodolac, AY 24236, AY-24,236, AY-24236;

Etoposide, alpha-D-Glucopyranosyl Isomer Etoposide, Baxter Brand of Etoposide, Baxter Oncology Brand of Etoposide;

etoricoxib, Arcoxia, etoricoxib, L-791456;

etravirine, etravirine, R165335, TMC 125;

Eufor, (+) or (-)-N-Methyl-3-phenyl-3-((alpha,alpha,alpha-trifluoro-p-tolyl)oxy)propylamine, (+) or (-)-N-Methyl-gamma-(4-(trifluoromethyl)phenoxy)benzenepropanamine, (+-)-N-Methyl-3-phenyl-3-((alpha,alpha,alpha-trifluoro-p-tolyl)oxy)propylamine;

Eugenol, 1,3,4-Eugenol, 1-Hydroxy-2-methoxy-4-allylbenzene, 1-Hydroxy-2-methoxy-4-prop-2-enylbenzene;

eupatilin, eupatilin;

everolimus, 40-O-(2-hydroxyethyl)-rapamycin, Certican, everolimus;

Evex, (+)-3,17beta-Estradiol, (13S,17S)-13-methyl-

7,8,9,11,12,13,14,15,16,17-decahydro-6H-

cyclopenta[a]phenanthrene-3,17-beta-diol, (17beta)-estra-1(10),2,4-triene-3,17-diol;

Evodin, (4aS,6aR,8aR,8bR,9aS,12R,12aS,14aR,14bR)-12-(3-furyl)-6,6,8a,12a-tetramethyldecahydro-3H-

oxireno[d]pyrano[4',3':3,3a][2]benzofuro[5,4-f]isochromene-3,8,10(6H,9aH)-trione, 7,16-Dioxo-7,16-dideoxylimondiol, Citrolimonin;

exenatide, AC 2993, AC 2993 LAR, Byetta;

Exosurf, Alevaire, Enuclene, Exosurf;

Expectorants,

Expectorants, Mucolytic Agents, Mucolytics;

Extina, (+-)-cis-1-Acetyl-4-(p-((2-(2,4-dichlorophenyl)-2-(imidazol-1-ylmethyl)-1,3-dioxolan-4-

yl)methoxy)phenyl)piperazine, (-)-Ketoconazole, (2S,4R)-ketoconazole;

Ezerin, (3aS,8aR)-1,3a,8-trimethyl-1,2,3,3a,8,8a-

hexahydropyrrolo[2,3-b]indol-5-yl methylcarbamate, (3aS-cis)-

1,2,3,3a,8,8a-Hexahydro-1,3a,8-trimethylpyrrolo(2,3-b)indol-5-ol methylcarbamate (ester), 1,2,3,3abeta,8abeta-Hexahydro-1,3a,8-

trimethylpyrrolo(2,3-b)-indol-5-yl methylcarbamate;

ezetimib, ezetimib;

Facet, 3,7-Dichloro-8-quinolinecarboxylic acid, 3,7-

Dichloroquinoline-8-carboxylic acid, 8-Quinolinecarboxylic acid,

3,7-dichloro-;

Facid, (2S)-2-[[4-[(2-amino-4-keto-1H-pteridin-6-yl)methylamino]benzoyl]amino]glutaric acid, (2S)-2-[[4-[(2-amino-4-oxo-1H-pteridin-6-yl)methylamino]benzoyl]amino]pentanedioic acid, (2S)-2-[[4-[(2-amino-4-oxo-1H-pteridin-6-yl)methylamino]phenyl]carbonylamino]pentanedioic acid;

facile, facile;

Factor IIa, Factor IIa;

FAMP, 2-F-ara-AMP, 2-Fluoro-9-(5-O-phosphono-beta-D-arabinofuranosyl)-9H-purin-6-amine, 2-Fluoro-ARA AMP;

Fanchinine, (+)-Tetrandrine, (+-)-Tetrandine, (+-)-Tetrandine; DL-Tetrandine;

Farnesyl-PP, (2E,6E)-3,7,11-trimethyldodeca-2,6,10-trien-1-yl trihydrogen diphosphate, (2E,6E)-Farnesyl diphosphate, (2E,6E)-Farnesyl pyrophosphate;

farnesylthiosalicylic acid, farnesylthiosalicylic acid, S-farnesylthiosalicylic acid, S-trans,trans-farnesylthiosalicylic acid;

febuxostat, 2-(3-cyano-4-isobutoxyphenyl)-4-methyl-5-thiazolecarboxylic acid, febuxostat, TEI 6720;

felbamate, 2-phenyl-1,3-propanediol dicarbamate, ADD-03055, Essex brand of felbamate;

Felodipine, 1A Brand of Felodipine, AbZ Brand of Felodipine, Agon;

Fenfluramine, Fenfluramine, Fenfluramine Hydrochloride, Fenfluramine Hydrochloride, (+-)-Isomer;

fenitrothion, fenitrothion, MEP, O,O-dimethyl O-(3-methyl-4-nitrophenyl) thiophosphate;

fenofibric acid, 2-(4-(4'-chlorophenoxy)phenoxy)propionic acid, fenofibric acid, fenofibric acid potassium salt;

Fenretinide, 13-cis-Isomer Fenretinide, 4 Hydroxyphenyl-retinamide, 4-HPR;

Fentanyl, Cephalon Brand of Fentanyl Buccal OraVescent, Fentanest, Fentanyl;

ferulic acid, 4-hydroxy-3-methoxycinnamic acid, 8,8'-diferulic acid, ferulic acid;

Filipin, Desoxylagosin, Filimarisin, Filipin;

fingolimod, 2-amino-2-(2-(4-octylphenyl)ethyl)-1,3-propanediol hydrochloride, fingolimod, fingolimod hydrochloride;

fipronil, 5-amino-1-[2,6-dichloro-4-(trifluoromethyl)phenyl]-4-[(trifluoromethyl)sulfinyl]-1H-pyrazole-3-carbonitrile, fipronil;

fisetin, 2-(3,4-Dihydroxyphenyl)-3,7-dihydroxy-4H-1-benzopyran-4-one, 2-(3,4-dihydroxyphenyl)-3,7-dihydroxy-4H-chromen-4-one, 3,3',4',7-Tetrahydroxyflavone;

Flanin F, 1H-Purin-6-amine, flavin dinucleotide, 1H-Purin-6-amine, flavine dinucleotide, Adenine-flavin dinucleotide;

Flavon, 2-Phenyl-.gamma.-benzopyrone, 2-Phenyl-4-benzopyron, 2-phenyl-4-chromenone;

flavonols, a flavonol, flavonols;

flavopiridol, (-)cis-5,7-dihydroxy-2-(2-chlorophenyl)-8-(4-(3-hydroxy-1-methyl)piperidinyl)-4H-1-benzopyran-4-one, flavopiridol, HMR 1275;

Flavyl, 1-Propanamine, 3-(10,11-dihydro-5H-dibenzo(a,d)cyclohepten-5-ylidene)-N,N-dimethyl-, 1-Propanamine, 3-(10,11-dihydro-5H-dibenzo[a,d]cyclohepten-5-ylidene)-N,N-dimethyl-, 10,11-Dihydro-5-(gamma-dimethylaminopropylidene)-5H-dibenzo(a,d)cycloheptene;

FLCZ, .alpha.-(2,4-Difluorophenyl)-.alpha.-(1H-1,2,4-triazol-1-ylmethyl)-1H-1,2,4-triazole-1-ethanol, 1H-1,2,4-Triazole-1-ethanol, .alpha.-(2,4-difluorophenyl)-.alpha.-(1H-1,2,4-triazol-1-ylmethyl)-, 1H-1,2,4-Triazole-1-ethanol, alpha-(2,4-difluorophenyl)-alpha-(1H-1,2,4-triazol-1-ylmethyl)-;

Flecainide, 3M Brand of Flecainide Acetate, Alphapharm Brand of Flecainide Acetate, Alparma Brand of Flecainide Acetate;

Floxacillin, Floxacillin, Flucloxacillin, Fluorochloroxacillin;

flufenamic acid, 2-[3-(trifluoromethyl)anilino]benzoic acid, 2-[[3-(TRIFLUOROMETHYL)PHENYL]AMINO] BENZOIC ACID, 3'-trifluoromethyldiphenylamine-2-carboxylic acid;

Flunitrazepam, 1A Brand of Flunitrazepam, betapharm Brand of Flunitrazepam, ct Arzneimittel Brand of Flunitrazepam;

fluorexon, fluorexon;

Fluorouracil, 5 Fluorouracil, 5 Fluorouracil biosyn, 5 FU Lederle;

fluvoxamine, (1E)-5-methoxy-1-[4-(trifluoromethyl)phenyl]pentan-1-one O-(2-aminoethyl)oxime, fluvoxamine;

FOLATE-ANALOG, FOLATE-ANALOG;

fondaparinux, Arixtra, fondaparinux, fondaparinux sodium;

Fonofos, Dyfonate, Dyphonate, Fonofos;

Format, 2-Pyridine carboxylic acid, 3,6-dichloro-, 2-Pyridinecarboxylic acid, 3,6-dichloro-, 3,6-Dichloro-2-pyridinecarboxylic acid;
Formyl-Tetrahydrofolate, Formyl-Tetrahydrofolate;
Forskolin, Coleonol, Forskolin;
fosamprenavir, (3-(((4-aminophenyl)sulfonyl)(2-methylpropyl)amino)-1-(phenylmethyl)-2-(phosphonooxy)propyl)carbamic acid C-(tetrahydro-3-furanyl) ester, fos-amprenavir, fosamprenavir;
Foscarnet, Foscarnet, Foscarnet Barium (2:3) Salt, Foscarnet Calcium (2:3) Salt;
FR 120480, FR 120480;
FR 235222, FR 235222, FR-235222, FR235222;
fraxin, fraxin;
FTY 720P, FTY 720P, FTY-720P, FTY720P;
fucoidan, fucan sulfate, fucan sulfate Hor-1, fucoidan;
fulvestrant, 7-(9-(4,4,5,5,5-pentafluoropentylsulfinyl)nonyl)estra-1,3,5(10)-triene-3,17-diol, AstraZeneca brand of fulvestrant, Faslodex;
fumagillin, (2E,4E,6E,8E)-10-(((3R,4S,5S,6R)-5-methoxy-4-[(2R,3R)-2-methyl-3-(3-methylbut-2-en-1-yl)oxiran-2-yl]-1-oxaspiro[2.5]oct-6-yl}oxy)-10-oxodeca-2,4,6,8-tetraenoic acid, 2,4,6,8-decatetraenedioic acid, 4-(1,2-epoxy-1,5-dimethyl-4-hexenyl)-5-methoxy-1-oxaspiro(2,5)oct-6-yl ester, Fugillin;
Fura-2, Fura 2, Fura-2;
furafylline, furafylline;
Furamon, (2-Furylmethyl)trimethylammonium iodide, 2-Furanmethanaminium, N,N,N-trimethyl-, iodide, 2-Furanmethanaminium, N,N,N-trimethyl-, iodide (9CI);
Furylfuramide, AF 2, AF-2, AF2;
Gabexate, Foy, Gabexate, Gabexate Mesilate;
gadolinium, 64Gd, gadolinio, gadolinium;
Gadolinium DTPA, Berlex Brand of Gadopentetate Dimeglumine, Gadolinium Diethylenetriaminepenta acetic Acid, Gadolinium Diethylenetriaminepenta-acetic Acid;
galactocerebroside, galactocerebroside;
galactomannan, galactomannan;
galangin, 3,5,7-trihydroxy-2-phenyl-4H-benzopyran-4-one, 3,5,7-trihydroxy-2-phenyl-4H-chromen-4-one, 3,5,7-Trihydroxyflavone;
galaturonate, (2R,3S,4S,5R)-3,4,5,6-tetrahydroxyoxane-2-

carboxylic acid, (2R,3S,4S,5S,6R)-3,4,5,6-tetrahydroxyoxane-2-carboxylic acid, (2S,3R,4S,5R,6R)-3,4,5,6-tetrahydroxyoxane-2-carboxylic acid;

gallic acid, 3,4,5-trihydroxybenzoic acid, gallic acid, Pyrogallol-5-carboxylic acid;

Gallogen, (1)Benzopyrano(5,4,3-cde)(1)benzopyran-5,10-dione, 2,3,7,8-tetrahydroxy-, 2,3,7,8-Tetrahydroxy(1)benzopyrano(5,4,3-cde)(1)benzopyran-5,10-dione, 2,3,7,8-Tetrahydroxy(1)benzopyrano(5,4,3-cde)-(1)benzopyran-5,10-dione;

gambierol, gambierol;

Gambogic acid, Gambogic acid;

gamma-butyric-acid, gamma-butyric-acid;

Ganciclovir, BIOLF-62, BW-759, Cytovene;

gastrin 17, gastrin 17;

gatifloxacin, 1-cyclopropyl-1,4-dihydro-6-fluoro-8-methoxy-7-(3-methyl-1-piperazinyl)-4-oxo-3-quinolinecarboxylic acid, AM 1155, AM-1155;

gefitinib, 4-(3'-chloro-4'-fluoroanilino)-7-methoxy-6-(3-morpholinopropoxy)quinazoline, COc1cc2ncnc(Nc3ccc(F)c(Cl)c3)c2cc1OCCCN4CCOCC4, gefitinib;

Geldanamycin, 2-Azabicyclo[16.3.1]docosa-4,6,10,18,21-pentaene-3,20,22-trione, 9,13-dihydroxy-8,14,19-trimethoxy-4,10,12,16-tetramethyl-, 9-carbamate (8CI), 2-azabicyclo[16.3.1]docosa-4,6,10,18,21-pentaene-3,20,22-trione, 9-[(aminocarbonyl)oxy]-13-hydroxy-8,14,19-trimethoxy-4,10,12,16-tetramethyl-, (4E,6Z,8S,9S,10E,12S,13R,14S,16R)-, 2-Azabicyclo[16.3.1]docosa-4,6,10,18,21-pentaene-3,20,22-trione, 9-[(aminocarbonyl)oxy]-13-hydroxy-8,14,19-trimethoxy-4,10,12,16-tetramethyl-, [8S-(4E,6Z,8R*,9R*,10E,12R*,13S*,14R*,16S*)]-;

Gemfibrozil, 1A Brand of Gemfibrozil, Alphapharm Brand of Gemfibrozil, Apo Gemfibrozil;

gemtuzumab, CMA 676, CMA-676, gemtuzumab;

Gentamicins, G Myticin, G-Myticin, Garamycin;

gepirone, gepirone;

geraniol, (2E)-3,7-dimethyl-2,6-octadien-1-ol, (2E)-3,7-dimethylocta-2,6-dien-1-ol, (E)-3,7-dimethyl-2,6-octadien-1-ol;

geranylcoumarin, geranylcoumarin;

Gestodene, 13-ethyl-17-hydroxy-18,19-dinor-17 alpha-pregna-4,15-dien-20-yn-3-one, 17-alpha-ethinyl-13-ethyl-17 beta-hydroxy-4,15-gonadien-3-one, Gestoden;

GF 120918, Elacridar, GF 120918, GF-120918;
GGTI 298, GGTI 298, GGTI-298;
GI 129471, GI 129471;
gingerol, (6)-gingerol, 6-gingerol, gingerol;
ginsenoside Rd, ginsenoside Rd, ginsenoside-Rd;
ginsenoside Rf, ginsenoside Rf;
ginsenoside Rg1, ginsenoside Rg1, ginsenoside-Rg(1), sanchinoside C(1);
ginsenoside Rh2, ginsenoside Rh2;
Ginsenosides, Ginsenosides, Panaxosides, Sanchinosides;
GLCa, (2S,3R,4S,5R)-3,4,5-trihydroxy-6-keto-pipecolinic acid, (2S,3R,4S,5R)-3,4,5-trihydroxy-6-oxo-2-piperidinecarboxylic acid, (2S,3R,4S,5R)-3,4,5-trihydroxy-6-oxo-piperidine-2-carboxylic acid;
Gliclazide, Alphapharm Brand of Gliclazide, Diabrezide, Diaglyk;
Glumin, (2S)-2,5-diamino-5-keto-valeric acid, (2S)-2,5-diamino-5-oxo-pentanoic acid, (2S)-2,5-diamino-5-oxopentanoic acid;
Glyoxal, Ethanedial, Ethanedione, Glyoxal;
Gnidimacrin, Gnidimacrin;
GnRH, cystorelin, dirigestran, factrel;
Go 6976, Go 6976, Go-6976, Go6976;
gossypol, gossypol;
GR 79236X, (2S,3S,4S,5R)-2-[6-[(2-hydroxycyclopentyl)amino]-9-purinyl]-5-(hydroxymethyl)tetrahydrofuran-3,4-diol, (2S,3S,4S,5R)-2-[6-[(2-hydroxycyclopentyl)amino]purin-9-yl]-5-(hydroxymethyl)oxolane-3,4-diol, (2S,3S,4S,5R)-2-[6-[(2-hydroxycyclopentyl)amino]purin-9-yl]-5-(hydroxymethyl)tetrahydrofuran-3,4-diol;
gramicidin
S, 1,10-anhydro(L-leucyl-D-phenylalanyl-L-prolyl-L-valyl-L-ornithyl-L-leucyl-D-phenylalanyl-L-prolyl-L-valyl-L-ornithine), Cyclo(L-valyl-L-ornithyl-L-leucyl-D-phenylalanyl-L-prolyl-L-valyl-L-ornithyl-L-leucyl-D-phenylalanyl-L-prolyl), Gramicidin C;
Granisetron, 1-Methyl-N-(endo-9-Methyl-9-Azabicyclo(3.3.1)non-3-yl)-1H-Indazole-3-Carboxamide, BRL 43694, BRL 43694A;
Gravistat, Gravistat;
Grofo, Bonidel, Brodan, Chloropyrifos solution;
Guggulsterone, (17E)-Pregna-4,17(20)-diene-3,16-dione, (17E)-pregna-4,17-diene-3,16-dione, (8R,9S,10R,13S,14S,17E)-17-

ethylidene-10,13-dimethyl-1,2,6,7,8,9,11,12,14,15-decahydrocyclopenta[a]phenanthrene-3,16-dione;
GW 4064, GW 4064, GW-4064;
GW 501516, GW 1516, GW 501516, GW-1516;
H 89, H 87, H 89, H-87;
Halan, (R)-2-Bromo-2-chloro-1,1,1-trifluoroethane, 1,1,1-Trifluoro-2-bromo-2-chloroethane, 1,1,1-Trifluoro-2-chloro-2-bromoethane;
halofuginone, 7-bromo-6-chlorofebrifugine, halofuginone, halofuginone;
harmine, harmine;
Harzol, (3beta)-stigmast-5-en-3-ol, (3S,8S,9S,10R,13R,14S,17R)-17-[(1R,4R)-4-ethyl-1,5-dimethyl-hexyl]-10,13-dimethyl-2,3,4,7,8,9,11,12,14,15,16,17-dodecahydro-1H-cyclopenta[a]phenanthren-3-ol, (3S,8S,9S,10R,13R,14S,17R)-17-[(1R,4R)-4-ethyl-1,5-dimethylhexyl]-10,13-dimethyl-2,3,4,7,8,9,11,12,14,15,16,17-dodecahydro-1H-cyclopenta[a]phenanthren-3-ol;
hassium, 108Hs, hahnium, hassio;
HDMTX, ()Amethopterin, (+)-Amethopterin, 2-[[4-[(2,4-diaminopteridin-6-yl)methyl-methyl-amino]benzoyl]amino]glutaric acid;
Hecogenin, Hecogenin;
Hectorol, (1R,3S,5Z)-5-[(2E)-2-[(1R,3aS,7aR)-1-[(E,2R,5R)-5,6-dimethylhept-3-en-2-yl]-7a-methyl-2,3,3a,5,6,7-hexahydro-1H-inden-4-ylidene]ethylidene]-4-methylidene-cyclohexane-1,3-diol, (1R,3S,5Z)-5-[(2E)-2-[(1R,3aS,7aR)-1-[(E,2R,5R)-5,6-dimethylhept-3-en-2-yl]-7a-methyl-2,3,3a,5,6,7-hexahydro-1H-inden-4-ylidene]ethylidene]-4-methylidenecyclohexane-1,3-diol, (1R,3S,5Z)-5-[(2E)-2-[(1R,3aS,7aR)-7a-methyl-1-[(E,1R,4R)-1,4,5-trimethylhex-2-enyl]-2,3,3a,5,6,7-hexahydro-1H-inden-4-ylidene]ethylidene]-4-methylene-cyclohexane-1,3-diol;
Heet, Heet;
helenalin, helenalin;
Hemicholinium 3, Hemicholinium, Hemicholinium 3;
herbimycin, geldanamycin, 17-demethoxy-15-methoxy-11-O-methyl-, (15R)-, herbimycin, herbimycin A;
hesperadin, hesperadin;
HESPERETIN, 3',5,7-Trihydroxy-4'-methoxyflavanone, 4H-1-Benzopyran-4-one, 2,3-dihydro-5,7-dihydroxy-2-(3-hydroxy-4-

methoxyphenyl)-, (S)-, 5,7,3'-Trihydroxy-4'-methoxyflavanone;
Hexadimethrine, 1,5-Dimethyl-1,5-Diazaundecamethylene Polymetho-
bromide, Hexadimethrine, Hexadimethrine Bromide;
hexarelin, hexarelin;
HglN, (+-)-Glutamine, (2R)-2,5-diamino-5-oxopentanoic acid,
.gamma.-Glutamine;
himbacine, himbacine, NSC-23969, NSC23969;
Hk, Hk;
Hocus, (-) (5.alpha.,6.alpha.)-7,8-Didehydro-4,5-epoxy-17-
methyilmorphinan-3,6-diol, (-)-Heroin hydrochloride, (-)-
Morphine;
HOE 33342, H33342, HOE 33342, HOE-33342;
honokiol, honokiol;
Horner, (+)-(5Z,7E)-26,26,26,27,27,27-Hexafluoro-9,10-
secocholesta-5,7,10(19)-triene-1alpha,3beta,25-triol,
(1R,3S,5Z)-5-[(2E)-2-[(1R,3aS,7aR)-7a-methyl-1-[(1R)-6,6,6-
trifluoro-5-hydroxy-1-methyl-5-(trifluoromethyl)hexyl]-
2,3,3a,5,6,7-hexahydro-1H-inden-4-ylidene]ethylidene]-4-
methylene-cyclohexane-1,3-diol, (1R,3S,5Z)-5-[(2E)-2-
[(1R,3aS,7aR)-7a-methyl-1-[(1R)-6,6,6-trifluoro-5-hydroxy-1-
methyl-5-(trifluoromethyl)hexyl]-2,3,3a,5,6,7-hexahydro-1H-
inden-4-ylidene]ethylidene]-4-methylenecyclohexane-1,3-diol;
HS 1200, HS 1200, HS-1200, HS1200;
HU 211, 1,1-dimethylheptyl-11-hydroxytetrahydrocannabinol, 1,1-
dimethylheptyl-7-hydroxy-delta(6)-tetrahydrocannabinol, 11-
hydroxy-delta(8)-tetrahydrocannabinol-dimethylheptyl;
HyateC, antihemophilic factor, blood coagulation factor viii,
coagulation factor viii;
Hydoxin, 2-methyl-3-hydroxy-4,5-bis(hydroxy-methyl) pyridine, 2-
Methyl-3-hydroxy-4,5-bis(hydroxymethyl)pyridine, 2-Methyl-3-
hydroxy-4,5-di(hydroxymethyl)pyridine;
hydride, hydride, hydrogen anion;
Hydromorphone, Dihydromorphinone, Dilaudid, Hydromorphon;
Hydroxychloroquine, Hydroxychlorochin, Hydroxychloroquine, Hy-
droxychloroquine Sulfate;
hydroxycotinine, 1-methyl-3-hydroxy-5-(3-pyridyl)-2-
pyrrolidinone, 3'-hydroxycotinine, hydroxycotinine;
hydroxylamine, dihydridohydroxidonitrogen, H2NHO, HYDROXYAMINE;
Hydroxytryptophol, Hydroxytryptophol;
Hyhorin, Conestoral, Conjugated Estrogens, Conjugated estrogens:

sodium estrone sulfate;
Hypaque, 3,5-diacetamido-2,4,6-triiodo-benzoic acid; sodium,
3,5-diacetamido-2,4,6-triiodobenzoic acid; sodium, Diatrizoate;
hyperforin, hyperforin, octahydrohyperforin, tetrahydrohyperfor-
in;
hypericin, hypericin, mono-(123I)iodohypericin;
Hypericum-perforatum, Hypericum-perforatum;
hypochlorous acid, Chlor(I)-saeure, chloranol, HClO;
iberin, iberin;
IBMX, 1-methyl-3-(2-methylpropyl)-3,7-dihydro-1H-purine-2,6-
dione, 1-methyl-3-(2-methylpropyl)-3,9-dihydro-1H-purine-2,6-
dione, 1-methyl-3-(2-methylpropyl)-7H-purine-2,6-dione;
ibopamine, Escandine, ibopamine, ibopamine hydrochloride;
ibudilast, 3-isobutyryl-2-isopropylpyrazolo(1,5-a)pyridine,
ibudilast, KC 404;
IC 831423, IC 831423;
icariin, icariin;
icaritin, icaritin;
icilin, AG-3-5 compound, icilin;
ICRF 193, ICRF 193;
IDS 23, IDS 23, IDS-23, Rheuma-Hek;
Ifosfamide, Asta Z 4942, Holoxan, Ifosfamide;
Ikarugamycin, Ikarugamycin;
ilimaquinone, ilimaquinone;
Iloprost, Ciloprost, CoTherix Brand of Iloprost, Iloprost;
Imadyl, (+-)-6-Chloro-alpha-methylcarbazole-2-acetic acid, (.+-
.)-6-Chloro-.alpha.-methylcarbazole-2-acetic acid, 2-(6-Chloro-
9H-carbazol-2-yl)propanoic acid;
imatinib, CGP 57148, CGP-57148, CGP57148B;
imidafenacin, imidafenacin, KRP 197, KRP-197;
imidazo-pyridine, imidazo-pyridine;
imidazolidin-2-one, 1,3-ethyleneurea, 2-imidazolidinone, 2-
imidazolidone;
imidazolidin-one, imidazolidin-one;
imidazolidine, ClCNCN1, imidazolidine;
Imidazoline, Imidazoline;
imidazolyl-disulfide, imidazolyl-disulfide;
Imipenem, Anhydrous Imipenem, Imipemide, Imipenem;
Imizin, 10,11-Dihydro-N,N-dimethyl-5H-dibenz[b,f]azepine-5-
propanamine hydrochloride, 3-(5,6-dihydrobenzo[b][1]benzazepin-

11-yl)-N,N-dimethyl-propan-1-amine hydrochloride, 3-(5,6-dihydrobenzo[b][1]benzazepin-11-yl)-N,N-dimethylpropan-1-amine hydrochloride;
Immulina, Immulina;
Immunoferon, Immunoferon, Immunoferon;
Impulsin, Anandamide (16:0), Hexadecanamide, N-(2-hydroxyethyl)-, Hydroxyethylpalmitamide;
Imrecoxib, Imrecoxib;
Imutex, 1,3-Diaza-2,4-cyclopentadiene, 1,3-Diaza-2,4-cyclopentadiene-, 1,3-Diazole;
Indinavir, Crixivan, Indinavir, Indinavir Sulfate;
indiulon, indiulon, NBI 34060;
indirubin, indigo red, indirubin;
indole-3-acetic acid, 1H-indol-3-ylacetic acid, 2-(indol-3-yl)ethanoic acid, 3-Indolylessigsaeure;
indole-3-methanol, 1H-indol-3-ylmethanol, 3-hydroxymethylindole, 3-indolylcarbinol;
indolin-2-one, 3Z-3-((1H-pyrrol-2-yl)-methylidene)-1-(1-piperidinylmethyl)-1,3-2H-indol-2-one, indolin-2-one, tetrahydroindolinone;
indolin-one, indolin-one;
infliximab, Centocor brand of infliximab, Essex brand of infliximab, infliximab;
inhibin B, inhibin B;
INomax, Amidogen, oxo-, INomax, Mononitrogen monoxide;
inositol-1,3,4,5-tetrakisphosphate, inositol-1,3,4,5-tetrakisphosphate;
inulin, (1,2-beta-D-fructosyl)_n, (2,1-beta-D-Fructosyl)_n, (2->1)-beta-D-fructofuranan;
Iodoacetamide, Iodoacetamide;
iodomethane, CH₃I, Iodmethan, iodomethane;
iodoresiniferatoxin, I-RTX cpd, iodo-resiniferatoxin, iodoresiniferatoxin;
Ionomycin, Ionomycin, SQ 23377, SQ-23377;
ionophore, ionophore, ionophores;
Iopanoic Acid, Cholevid, Iodopanoic Acid, Iopagnost;
Iophendylate, Ethiodan, Iodophendylate, Iofendylate;
IPADE, 1H-Purin-6-amine, N-(3-methyl-2-butenyl)-, 1H-Purin-6-amine, N-(3-methyl-2-butenyl)- (9CI), 3-methylbut-2-enyl-(7H-purin-6-yl)amine;

IPOMEANOL, 1-(3-Furanyl)-4-hydroxy-1-pentanone, 1-(3-Furyl)-4-hydroxy-1-pentanone, 1-(3-Furyl)-4-hydroxy-4-pentanone;
Iressa, (3-chloro-4-fluoro-phenyl)-[7-methoxy-6-(3-morpholinopropoxy)quinazolin-4-yl]amine, 4-(3'-Chloro-4'-fluoroanilino)-7-methoxy-6-(3-morpholinopropoxy)quinazoline, 4-Quinazolinamine, N-(3-chloro-4-fluorophenyl)-7-methoxy-6-(3-(4-morpholinyl)propoxy)-;
irinotecan, 7-ethyl-10-hydroxycamptothecin, ALIRI cpd, Camp-tosar;
irisolidone, irisolidone;
Isatin, 1H-Indole-2,3-dione, 2,3-Diketoinindoline, 2,3-Dioxo-2,3-dihydroindole;
isaxonine, isaxonine, isopropylamino-2-pyrimidine phosphate, N-isopropyl-amino-2-pyrimidine orthophosphate;
isoamylol, 1-HYDROXY-3-METHYLBUTANE, 3-methyl-1-butanol, 3-methylbutan-1-ol;
isobutyl-methyl-Xanthine, isobutyl-methyl-Xanthine;
Isodonol, (1S,4AR,5S,6S,14S)-1,5,6,14-tetrahydroxy-4,4-dimethyl-8-methylenedecahydro-1H-6,11b-(epoxymethano)-6a,9-methanocyclohepta[a]naphthalen-7(8H)-one, Isodonol, Oridonin;
isoflavone, 3-phenyl-4H-1-benzopyran-4-one, 3-phenyl-4H-chromen-4-one, 3-Phenylchromone;
isoflurane, 1-chloro-2,2,2-trifluoroethyl difluoromethyl ether, 2-chloro-2-difluoromethoxy-1,1,1-trifluoroethane, Aerrane;
Isol, ()-2-Methyl-2,4-pentanediol, (+-)-2-Methyl-2,4-pentanediol, (4r)-2-Methylpentane-2,4-Diol;
Isoliquiritigenin, (2E)-1-(2,4-Dihydroxyphenyl)-3-(4-hydroxyphenyl)-2-propen-1-one, (2E)-1-(2,4-dihydroxyphenyl)-3-(4-hydroxyphenyl)prop-2-en-1-one, (E)-1-(2,4-Dihydroxyphenyl)-3-(4-hydroxyphenyl)-2-propen-1-one;
isometronidazole, isometronidazole;
isoprenoids, isoprenoid, isoprenoids;
Isopropyl Thiogalactoside, IPTG, Isopropyl 1 Thio beta D galactopyranoside, Isopropyl 1-Thio-beta-D-galactopyranoside;
Isoprostanes, Isoprostane,
Isoprostanes;
Isorhamnetin, Isorhamnetin;
isosilybin A, isosilybin A, isosilybin B;
Isosorbide Dinitrate, Cardonit 40, Dilatrate, Iso Bid;
isothiocyanates, isothiocyanates;

Isotretinoin, 13 cis Retinoic Acid, 13-cis-Retinoic Acid, Accutane;

Isradipine, Dynacirc, Isradipine, Isradipine, (+-)-Isomer;

istradefylline, 8-(2-(3,4-dimethoxyphenyl)ethenyl)-1,3-diethyl-3,7-dihydro-7-methyl-1H-purine-2,6-dione, istradefylline, KW 6002;

Itraconazole, Itraconazole, R 51211, R-51211;

ivabradine, 7,8-dimethoxy-3-(3-(((4,5-dimethoxybenzocyclobutan-1-yl)methyl)methylamino)propyl)-1,3,4,5-tetrahydro-2H-benzazepin-2-one, ivabradine, S 16257;

Ivermectin, Eqvalan, Ivermectin, Ivermectin Merck Brand;

ixabepilone, BMS 247550, BMS-247550, BMS247550;

jadomycin B, (1S,3aS)-1-[(2S)-butan-2-yl]-7-hydroxy-1,3a,5-trimethyl-2,8,13-trioxo-1,2,8,13-tetrahydro-3aH-benzo[b][1,3]oxazolo[3,2-f]phenanthridin-12-yl 2,6-dideoxy-alpha-L-ribo-hexopyranoside, jadomycin B;

Jexin, (+) Tubocurarine, (+)-Tubocurarine, 13H-4,6:21,24-Dietheno-8,12-metheno-1H-pyrido(3',2':14,15)(1,11)dioxacycloeicosino(2,3,4-ij)isoquinolinium, 2,3,13a,14,15,16,25,25a-octahydro-9,19-dihydroxy-18,29-dimethoxy-1,14,14-trimethyl-, (13aR,25aS)-; JHW 015, 1-propyl-2-methyl-3-(1-naphthoyl)indole, JHW 015, JHW-015;

JTE 013, JTE 013, JTE-013, JTE013;

K 252, 3'-(S)-epi-K-252a, K 252, K 252a;

K-PAM, 2-Propenamide, 2-Propenamide, homopolymer, 2-Propeneamide;

K-SR, Acronitol, Addi-K, Apo-K;

kaempferol, 3,4',5,7-Tetrahydroxyflavone, 3,5,7-trihydroxy-2-(4-hydroxyphenyl)-4H-chromen-4-one, 4H-1-Benzopyran-4-one, 3,5,7-trihydroxy-2-(4-hydroxyphenyl)-5,7,4'-Trihydroxyflavonol;

kaempferol-3-O-(2,3,4-tri-O-acetyl-alpha-l-rhamnopyranoside), kaempferol-3-O-(2,3,4-tri-O-acetyl-alpha-l-rhamnopyranoside), KTARP cpd;

KAFA, 1-Acetamido-4-ethoxybenzene, 1-Acetyl-p-phenetidin, 4′-Ethoxyacetanilide;

Kaken, (1S-(1alpha(S*),3alpha,5beta))-4-(2-(3,5-Dimethyl-2-oxocyclohexyl))-2-hydroxyethyl-2,6-piperidinedione, .beta.-[2-(3,5-Dimethyl-2-oxocyclohexyl)-2-hydroxyethyl]glutarimide, 2,6-Piperidinedione, 4-(2-(3,5-dimethyl-2-oxocyclohexyl)-2-

hydroxyethyl)-, (1S-(1alpha(S*),3alpha,5beta))-;

Kamalin, (E)-1-(6-((3-Acetyl-2,4,6-trihydroxy-5-methylphenyl)methyl)-5,7-dihydroxy-2,2-dimethyl-2H-1-benzopyran-8-yl)-3-phenyl-2-propen-1-one, (E)-1-[6-(3-acetyl-2,4,6-trihydroxy-5-methyl-benzyl)-5,7-dihydroxy-2,2-dimethyl-chromen-8-yl]-3-phenyl-prop-2-en-1-one, (E)-1-[6-[(3-acetyl-2,4,6-trihydroxy-5-methyl-phenyl)methyl]-5,7-dihydroxy-2,2-dimethyl-chromen-8-yl]-3-phenyl-prop-2-en-1-one;

Kaolin, Kaolin, Kaolinite;

Kathon 886, Kathon 886, Kathon 886 biocide, Kathon biocide;

KB 141, KB 141, KB-141, KB141 cpd;

Kemi, (+)-Propranolol, (1)-1-(Isopropylamino)-3-(naphthyloxy)propan-2-ol, (2S)-1-naphthalen-1-yloxy-3-(propan-2-ylamino)propan-2-ol;

kenpaullone, 1-azakenpaullone, 9-bromo-7,12-dihydroindolo(3,2-d)(1)benzazepin-6(5H)-one, kenpaullone;

Ketamine, 2-(2-Chlorophenyl)-2-(methylamino)cyclohexanone, Calipsol, Calypsol;

Keto-desogestrel, Keto-desogestrel;

Keto-pgflalpha, Keto-pgflalpha;

ketoglutarate, .alpha.-Ketoglutaric acid, .alpha.-Oxoglutaric acid, 2-ketoglutarate;

Kipca, 1,4-naphthalenedione, 2-methyl-, 1,4-Naphthalenedione, 2-methyl-, radical ion(1-), 1,4-Naphthoquinone, 2-methyl-;

KMD 3213, 1-(3-hydroxypropyl)-5-(2-(2-(2-(2,2,2-trifluoroethoxy)phenoxy)ethylamino)propyl)indoline-7-carboxamide, KMD 3213, KMD-3213;

KMTB, 2-keto-4-(methylthio)butyric acid, 2-Keto-4-methylthiobutanoic acid, 2-keto-4-methylthiobutyrate;

Kojic acid, 2-(Hydroxymethyl)-5-hydroxy-4H-pyran-4-one, 2-Hydroxymethyl-5-hydroxy-gamma-pyrone, 4H-Pyran-4-one, 5-hydroxy-2-(hydroxymethyl)-;

KR-31543, (2S,3R,4S)-6-amino-4-(N-(4-chlorophenyl)-N-(2-methyl-2H-tetrazol-5-ylmethyl)amino)-3,4-dihydro-2-dimethoxymethyl-3-hydroxy-2-methyl-2H-1-benzopyran, KR-31543;

KRM 1648, KRM 1648;

L 365260, L 365260;

L 740,093, 1-[(3R)-5-(3-azabicyclo[3.2.2]nonan-3-yl)-1-methyl-2-oxo-3H-1,4-benzodiazepin-3-yl]-3-(3-methylphenyl)urea, 1-[(3R)-5-(3-azabicyclo[3.2.2]nonan-3-yl)-2-keto-1-methyl-3H-1,4-

benzodiazepin-3-yl]-3-(3-methylphenyl)urea, L 740,093;
L-454,560, L-454,560;
L-696,474, 1H-Cycloundec[d]isoindol-1-one, 15-(acetyloxy)-
2,3,3a,4,5,6,6a,9,10,11,12,15-dodecahydro-6-hydroxy-4,10,12-
trimethyl-5-methylene-3-(phenylmethyl)-
, (3R*,3aS*,4R*,6R*,6aS*,7E,10R*,12R*,13E,15S*,15aS*), Cyto-
chalsin, L-696,474;
L-T3, (2S)-2-amino-3-[4-(4-hydroxy-3-iodo-phenoxy)-3,5-diiodo-
phenyl]propanoic acid, (2S)-2-amino-3-[4-(4-hydroxy-3-iodo-
phenoxy)-3,5-diiodo-phenyl]propionic acid, (2S)-2-amino-3-[4-(4-
hydroxy-3-iodophenoxy)-3,5-diiodophenyl]propanoic acid;
LAAM, (-)-6-(Dimethylamino)-4,4-diphenyl-3-heptanol acetate (es-
ter), (-)-alpha-Acetylmethadol, (1S,4S)-4-(dimethylamino)-1-
ethyl-2,2-diphenylpentyl acetate;
lacidipine, Boehringer Ingelheim Brand of Lacidipine, Caldine,
GlaxoSmithKline Brand of Lacidipine;
lactacystin, lactacystin;
lactisole, lactisole;
lamotrigine, 3,5-diamino-6-(2,3-dichlorophenyl)-as-triazine, BW-
430C, Crisomet;
Lanol, (-)-Cholesterol, (3beta)-cholest-5-en-3-ol, (3H)-
Cholesterol;
lansoprazole, 2-(((3-methyl-4-(2,2,2-trifluoroethoxy)-2-
pyridyl)methyl)sulfinyl)-1H-benzimidazole, Abbot Brand of Lanso-
prazole, AG 1749;
lapatinib, GW 572016, lapatinib, N-(3-chloro-4-((3-
fluorophenyl)methoxy)phenyl)-6-(5-((2-
(methylsulfonyl)ethyl)amino)methyl)-2-furanyl)-4-
quinazolinamine;
laquinimod, laquinimod;
latrunculin A, latrunculin A;
latrunculin B, LAT-B, latrunculin B;
lavendustin A, lavendustin A;
LBH589, LBH 589, LBH589, NVP-LBH589;
leflunomide, Arava, Aventis Behring Brand of Leflunomide,
Aventis Brand of Leflunomide;
lenalidomide, 2,6-Piperidinedione, 3-(4-amino-1,3-dihydro-1-oxo-
2H- isoindol-2-yl)-, 3-(4-Amino-1-oxoisindolin-2-yl)piperidine-
2,6-dione, CC 5013;
Lendorm, 2-Bromo-4-(2-chlorophenyl)-9-methyl-6H-thieno(3,2-

f) (1,2,4)triazolo(4,3-a)(1,4)diazepine, 2-bromo-4-(2-chlorophenyl)-9-methyl-6H-thieno[3,2-f][1,2,4]triazolo[4,3-a][1,4]diazepine, 2-Bromo-4-(o-chlorophenyl)-9-methyl-6H-thieno(3,2-f)-s-triazolo(4,3-a)(1,4)diazepine;
Lentinan, Lentinan;
leptomycin B, leptomycin B;
Leucovorin, 5 Formyltetrahydrofolate, 5 Formyltetrahydropteroylglutamate, 5-Formyltetrahydrofolate;
Leukotriene C4, Leukotriene C, Leukotriene C 1, Leukotriene C 4;
Leukotriene D4, Leukotriene D, Leukotriene D 4, Leukotriene D-4;
leukotrienes, leucotriene, leucotrienes, Leukotrien;
Leupeptin, (2S)-N-[(2S)-2-acetamido-4-methyl-1-oxopentyl]-2-[(1-formyl-4-guanidinobutyl)amino]-4-methylpentanamide, (2S)-N-[(2S)-2-acetamido-4-methyl-pentanoyl]-2-[(1-formyl-4-guanidino-butyl)amino]-4-methyl-pentanamide, (2S)-N-[(2S)-2-acetamido-4-methyl-pentanoyl]-2-[(1-formyl-4-guanidino-butyl)amino]-4-methyl-valeramide;
Levamisole, Decaris, Dekaris, L-Tetramisole;
Levitra, 2-(2-Ethoxy-5-(4-ethylpiperazin-1-yl-1-sulfonyl)phenyl)-5-methyl-7-propyl-3H-imidazo(5,1-f)(1,2,4)triazin-4-one, 2-[2-ethoxy-5-(4-ethylpiperazin-1-yl)sulfonyl-phenyl]-5-methyl-7-propyl-1H-imidazo[5,1-f][1,2,4]triazin-4-one, 2-[2-ethoxy-5-(4-ethylpiperazin-1-yl)sulfonylphenyl]-5-methyl-7-propyl-1H-imidazo[5,1-f][1,2,4]triazin-4-one;
levobupivacaine, Abbott Brand of Levobupivacaine Hydrochloride, Chirocaine, levobupivacaine;
Levonorgestrel, Alcala Brand of Levonorgestrel, Aventis Pharma Brand of Levonorgestrel, Berlex Brand of Levonorgestrel;
levugen, (2R,3S,4S,5R)-2,5-bis(hydroxymethyl)oxolane-2,3,4-triol, 2,5-bis(hydroxymethyl)oxolane-2,3,4-triol, 2,5-bis(hydroxymethyl)tetrahydrofuran-2,3,4-triol;
liarozole, liarozole;
Lidocaine, 2 2EtN 2MePhAcN, 2-(Diethylamino)-N-(2,6-Dimethylphenyl)Acetamide, 2-2EtN-2MePhAcN;
lilopristone, 98,73, lilopristone, ZK 98.734;
Lipoate, (+)-alpha-Lipoic acid, (R)-()-1,2-Dithiolane-3-pentanoic acid, (R)-(+)-Lipoate;
Lipofectamine, LF 2000, LF-2000, LF2000;
lipoteichoic acid, lipoteichoic acid;

Lipoxins, Lipoxin, Lipoxins;

lissamine rhodamine B, lissamine rhodamine B;

lithocholic acid, (3alpha,5beta)-3-hydroxycholan-24-oic acid, 3alpha-hydroxy-5beta-cholan-24-oic acid, 3alpha-hydroxy-5beta-cholanic acid;

LMWH, 6-[5-acetamido-4,6-dihydroxy-2-(sulfooxymethyl)oxan-3-yl]oxy-3-[5-(6-carboxy-4,5-dihydroxy-3-sulfooxy-oxan-2-yl)oxy-6-(hydroxymethyl)-3-(sulfoamino)-4-sulfooxy-oxan-2-yl]oxy-4-hydroxy-5-sulfooxy-oxane-2-carboxylic acid, 6-[5-acetamido-4,6-dihydroxy-2-(sulfooxymethyl)oxan-3-yl]oxy-3-[5-(6-carboxy-4,5-dihydroxy-3-sulfooxyoxan-2-yl)oxy-6-(hydroxymethyl)-3-(sulfoamino)-4-sulfooxyoxan-2-yl]oxy-4-hydroxy-5-sulfooxyoxane-2-carboxylic acid, 6-[5-acetamido-4,6-dihydroxy-2-(sulfooxymethyl)tetrahydropyran-3-yl]oxy-3-[5-(6-carboxy-4,5-dihydroxy-3-sulfooxy-tetrahydropyran-2-yl)oxy-6-(hydroxymethyl)-3-(sulfoamino)-4-sulfooxy-tetrahydropyran-2-yl]oxy-4-hydroxy-5-sulfooxy-tetrahydropyran-2-carboxyli;

LNAC, (2R)-2-acetamido-3-mercapto-propionic acid, (2R)-2-acetamido-3-mercaptopropanoic acid, (2R)-2-Acetamido-3-sulfanylpropanoic acid;

lonafarnib, 4-(2-(4-(8-chloro-3,10-dibromo-6,11-dihydro-5H-benzo-(5,6)-cyclohepta(1,2-b)-pyridin-11(R)-yl)-1-piperidinyl)-2-oxo-ethyl)-1-piperidinecarboxamide, lonafarnib, SCH 66336;

Loperamide, Imodium, Loperamide, Loperamide Hydrochloride;

lopinavir, A-157378.0, ABT 378, ABT-378;

Loratadine, 4-(8-Chloro-5,6-dihydro-11H-benzo(5,6)cyclohepta(1,2-b)pyridin-11-ylidene)-1-piperidinecarboxylic Acid Ethyl Ester, Alavert, Claritin;

Lorazepam, AHP Brand of Lorazepam, Apo Lorazepam, Apo-Lorazepam;

Lorex, DEA No. 2783, Imidazo(1,2-a)pyridine-3-acetamide, N,N,6-trimethyl-2-(4-methylphenyl)-, Lorex;

lorglumide, lorglumide;

Losartan, 2-Butyl-4-chloro-1-((2'-(1H-etrazol-5-yl)(1,1'-biphenyl)-4-yl)methyl)-1H-imidazole-5-methanol, Cozaar, DuP 753;

Lovan, ()-N-Methyl-gamma-[4-(trifluoromethyl)phenoxy]benzenepropanamine hydrochloride, (+)-N-Methyl-gamma-(4-(trifluoromethyl)phenoxy)benzenepropanamine hydrochloride, (+)-N-Methyl-3-phenyl-3-(4-(trifluoromethyl)phenoxy)propylamine hydrochloride;

loxiglumide, loxiglumide;
LUF 5831, LUF 5831, LUF5831;
lupeol, lup-20(29)-en-3-ol, lup-20(29)-en-3beta-ol, lup-20(29)-ene-3alpha-ol;
luteolin, 2-(3,4-dihydroxyphenyl)-5,7-dihydroxy-4-benzopyrone, 2-(3,4-dihydroxyphenyl)-5,7-dihydroxy-4H-1-benzopyran-4-one, 2-(3,4-dihydroxyphenyl)-5,7-dihydroxy-4H-chromen-4-one;
LY 117018, 6-hydroxy-2-(4-hydroxyphenyl)benzo(b)thien-3-yl 4-(2-(1-pyrrolidinyl)ethoxy) phenyl ketone, Lilly 117018, LY 117018;
LY 293111, 2-(2-propyl-3-(3-(2-ethyl-4-(4-fluorophenyl)-5-hydroxyphenoxy)propoxy)phenoxy)benzoic acid, LY 293111, LY-293111;
LY231514, LY231514;
LYCOPENE, (6Z,8E,10E,12E,14E,16E,18Z,20E,22Z,24E,26Z)-2,6,10,14,19,23,27,31-octamethyldotriaconta-2,6,8,10,12,14,16,18,20,22,24,26,30-tridecaene, .psi.,.psi.-Carotene, 2,6,8,10,12,14,16,18,20,22,24,26,30-Dotriacontatridecaene, 2,6,10,14,19,23,27,31-octamethyl-, (all-E)-;
lysophosphatidic acid, 1-O-oleyllysophosphatidic acid, 1-oleoyllysophosphatidic acid, LPA (lysophosphatidic acid);
Lysophosphatidylcholines, Lysolecithins, Lysophosphatidylcholine, Lysophosphatidylcholines;
Lysophosphatidylglycerol, Lysophosphatidylglycerol;
lysyl-arginyl-alanyl-lysyl-alanyl-lysyl-threonyl-threonyl-lysyl-lysyl-arginine, lysyl-arginyl-alanyl-lysyl-alanyl-lysyl-threonyl-threonyl-lysyl-lysyl-arginine;
M&B22948, 1,4-Dihydro-5-(2-propoxyphenyl)-1,2,3-triazolo(4,5-d)pyrimidin-7-one, 1,4-Dihydro-5-(2-propoxyphenyl)-7H-1,2,3-triazolo(4,5-d)pyrimidin-7-one, 1,4-Dihydro-5-(2-propoxyphenyl)-7H-1,2,3-triazolo[4,5-d]pyrimidine-7-one;
Malix, 1,2,3,4,7,7-Hexachlorobicyclo(2.2.1)hepten-5,6-bioxymethylenesulfite, 1,4,5,6,7,7-Hexachloro-5-norbornene-2,3-dimethanol cyclic sulfite, 1,4,5,6,7,7-Hexachloro-8,9,10-trinorborn-5-en-2,3-ylenedimethyl sulphite;
manidipine, 2-(4-diphenylmethyl-1-piperazinyl)ethyl methyl-1,4-dihydro-2,6-dimethyl-4-(3-nitrophenyl)-3,5-pyridinedicarboxylate, CV 4093, CV-4093;
manumycin, manumycin, manumycin A, UCFI-C;
maraviroc, 4,4-difluoro-N-((1S)-3-(exo-3-(3-isopropyl-5-methyl-

4H-1,2,4-triazol-4-yl)-8-azabicyclo(3.2.1)oct-8-yl)-1-phenylpropyl)cyclohexanecarboxamide, maraviroc, Pfizer Brand of maraviroc;

Matrine, (+)-Matrine, .alpha.-Matrine, Matrene, (+)-;

MCYST-LR, (5R,8S,11R,12S,15S,18S,19S,22R)-15-(3-guanidinopropyl)-8-isobutyl-18-[(1E,3E,5S,6S)-6-methoxy-3,5-dimethyl-7-phenyl-hepta-1,3-dienyl]-1,5,12,19-tetramethyl-2-methylene-3,6,9,13,16,20,25-hepta-1,4,7,10,14,17,21-heptazacyclopentacosane-11,22-dicarboxylic, (5R,8S,11R,12S,15S,18S,19S,22R)-15-(3-guanidinopropyl)-8-isobutyl-18-[(1E,3E,5S,6S)-6-methoxy-3,5-dimethyl-7-phenylhepta-1,3-dienyl]-1,5,12,19-tetramethyl-2-methylene-3,6,9,13,16,20,25-hepta-1,4,7,10,14,17,21-heptazacyclopentacosane-11,22-dicarboxylic, (5R,8S,11R,12S,15S,18S,19S,22R)-15-(3-guanidinopropyl)-8-isobutyl-3,6,9,13,16,20,25-heptaketo-18-[(1E,3E,5S,6S)-6-methoxy-3,5-dimethyl-7-phenyl-hepta-1,3-dienyl]-1,5,12,19-tetramethyl-2-methylene-1,4,7,10,14,17,21-heptazacyclopentacosane-11,22-dicarboxylic;

Me-nle-asp-phe-NH₂, Me-nle-asp-phe-NH₂;

mead ethanolamide, 5,8,11-eicosatrienoyl ethanolamide (Z,Z,Z)-, mead ethanolamide;

MeAsO(OH)₂, Arsonic acid, methyl-, DSMA (JMAF), MeAsO(OH)₂;

Mebumal, 2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-ethyl-5-(1-methylbutyl)-, 5-ethyl-2-hydroxy-5-(1-methylbutyl)pyrimidine-4,6(1H,5H)-dione, 5-Ethyl-5-(1-methylbutyl)-2,4,6(1H,3H,5H)-pyrimidinetrione;

Mechlorethamine, Bis(2-chloroethyl)methylamine, Caryolysine, Chlorethazine;

Medroxyprogesterone 17-Acetate, (6 alpha)-17-(Acetoxy)-6-methylpregn-4-ene-3,20-dione, 6 alpha Methyl 17alpha hydroxyprogesterone Acetate, 6-alpha-Methyl-17alpha-hydroxyprogesterone Acetate;

Mefenamic Acid, Antigen Brand of Mefenamic Acid, Apo Mefenamic, Apo-Mefenamic;

Megalomicin, (3R,4S,5S,6R,7R,9R,11R,12R,13S,14R)-4-[(2R,4R,5S,6S)-4,5-dihydroxy-4,6-dimethyl-oxan-2-yl]oxy-6-[(2S,3R,4S,6R)-4-dimethylamino-3-hydroxy-6-methyl-oxan-2-yl]oxy-7-[(2S,4R,6S)-4-dimethylamino-5-hydroxy-6-methyl-oxan-2-yl]oxy-14-ethyl-12,13-dihydroxy-3,5,7,9, (3R,4S,5S,6R,7R,9R,11R,12R,13S,14R)-4-[(2R,4R,5S,6S)-4,5-

dihydroxy-4,6-dimethyl-tetrahydropyran-2-yl]oxy-6-
[(2S,3R,4S,6R)-4-dimethylamino-3-hydroxy-6-methyl-
tetrahydropyran-2-yl]oxy-7-[(2S,4R,6S)-4-dimethylamino-5-
hydroxy-6-methyl-tetrahydropyran-2-yl]oxy,
(3R,4S,5S,6R,7R,9R,11R,12R,13S,14R)-4-[(2R,4R,5S,6S)-4,5-
dihydroxy-4,6-dimethyl-tetrahydropyran-2-yl]oxy-6-
[(2S,3R,4S,6R)-4-dimethylamino-3-hydroxy-6-methyl-
tetrahydropyran-2-yl]oxy-7-[(2S,4R,6S)-4-dimethylamino-5-
hydroxy-6-methyl-tetrahydropyran-2-yl]oxy;
Melarsoprol, Arsobal, Mel B, Melarsenoxid BAL;
Melatol, 5-Methoxy-N-acetyltryptamine, Acetamide, N-(2-(5-
methoxy-1H-indol-3-yl)ethyl)-(9CI), Acetamide, N-(2-(5-
methoxyindol-3-yl)ethyl)-;
meletin, 117-39-5 (NEUTRAL), 2-(3,4-Dihydroxy-phenyl)-3,5,7-
trihydroxy-chromen-4-one, 2-(3,4-dihydroxyphenyl)-3,5,7-
trihydroxy-4-chromenone;
melitten, D008555, melitten, melittin;
meloxicam, Abbott brand of meloxicam, Almirall brand of meloxi-
cam, Boehringer Ingelheim brand of meloxicam;
Melpalan, 4-(Bis(2-chloroethyl)amino)phenylalanine, Alkeran, L-
PAM;
Memantine, 1,3-Dimethyl-5-aminoadamantane, 1-Amino-3,5-
dimethyladamantane, Axura;
menadiol, 2-methyl-1,4-naphthohydroquinone, 2-methyl-1,4-
naphthoquinol, dihydrovitamin K3;
Menhaden oil, Menhaden oil;
menthofuran, menthofuran;
Meperidine, Demerol, Dolantin, Dolargan;
Mephenytoin, 5 Ethyl 3 Methyl 5 Phenylhydantoin, 5-Ethyl-3-
Methyl-5-Phenylhydantoin, Mefenetoin;
mesalamine, 3-carboxy-4-hydroxyaniline, 5-amino-2-hydroxybenzoic
acid, 5-Aminosalicylic acid;
Mesaton, (-)-m-Hydroxy-alpha-(methylaminomethyl)benzyl alcohol,
(R)-2-Hydroxy-2-(3-hydroxyphenyl)-N-methylethylamine, 3-[(1R)-1-
hydroxy-2-(methylamino)ethyl]phenol;
Meth, (+)-methylamphetamine, (+)-(s)-deoxyephedrine, (+)-(s)-n-
alpha-dimethylphenethylamine;
methanandamide, methanandamide;
methanethiosulfonate ethylammonium, 2-
aminoethylmethanethiosulfonate, AEMTS cpd, methanethiosulfonate

ethylamine;

Methimazole, 1 Methyl 2 mercaptoimidazole, 1-Methyl-2-mercaptoimidazole, Eli Lilly Brand of Methimazole;

methionyl-leucyl-phenylalanine, methionyl-leucyl-phenylalanine;

Methorphan, (-)-3-Methoxy-N-methylmorphinan, 3-methoxy-17-methylmorphinan, 3-METHOXY-N-METHYLMORPHINAN, (-)-;

Methoxsalen, 8 Methoxypsoralen, 8 MOP, 8-Methoxypsoralen;

Methoxy-psoralen, Methoxy-psoralen;

methoxyamine, methoxyamine;

methoxychlor, 1,1'-(2,2,2-trichloroethane-1,1-diyl)bis(4-methoxybenzene), 1,1,1-trichloro-2,2-bis(p-anisyl)ethane, 1,1,1-trichloro-2,2-bis(p-methoxyphenyl)ethane;

methoxymorphinan, methoxymorphinan;

methyl chloroformate, methyl chloroformate;

Methyl glycine, (Methoxycarbonyl)methylamine, 2-aminoacetic acid methyl ester, Glycine methyl ester;

Methyl paraben, Methyl paraben;

methyl salicylate, 3M brand of methyl salicylate, esparma brand of methyl salicylate, Hevert brand of methyl salicylate;

methyl tryptophan, 2-Amino-3-(1H-indol-3-yl)-propionic acid methyl ester, 2-amino-3-(1H-indol-3-yl)propanoic acid methyl ester, 2-amino-3-(1H-indol-3-yl)propionic acid methyl ester;

methyl-dopa, methyl-dopa;

methyl-phosphorothioate, methyl-phosphorothioate;

methyl-Pyridinium, methyl-Pyridinium;

methylamine, aminomethane, methylamine, methylamine bisulfite;

Methylamylnitrosamine, 1-Pentanamine, N-methyl-N-nitroso-, Methyl-N-amylnitrosamine, Methyl-N-pentylnitrosamine;

Methylene-tetrahydrofolate, Methylene-tetrahydrofolate;

methylenetetrahydrofolates, methylenetetrahydrofolate, methylenetetrahydrofolates;

methylglyoxal, 1,2-propanedione, 2-Ketopropionaldehyde, 2-oxopropanal;

methylnaltrexone, 17-(cyclopropylmethyl)-4,5-epoxy-3,14-dihydroxymorphinan-6-one, methyl-naltrexone hydrobromide, methylnaltrexone;

methyloxidanyl, CH₃-O(.), methoxy, methoxy radical;

methylparaben, 4-hydroxybenzoic acid methyl ester, methyl p-hydroxybenzoate, methylparaben;

methylphosphate, methyl phosphate disodium salt, hexahydrate,

methylphosphate, methylphosphate diammonium salt;
Methylprednisolone, 6 Methylprednisolone, 6-Methylprednisolone, Medrol;
methylxanthines, methylxanthines;
Metoclopramide, 4 Amino-5-chloro-N-(2-(diethylamino)ethyl)-2-methoxybenzamide, Cerucal, Maxolon;
Metopiron, 1,2-Di-3-pyridyl-2-methyl-1-propanone, 1-Propanone, 1,2-di-3-pyridyl-2-methyl-, 1-Propanone, 2-methyl-1,2-di-3-pyridinyl-;
Metribolone, 17 BETA HYDROXY 17 ALPHA METHYLESTRA 4 9 11 TRIEN 3 ONE, 17 beta-Hydroxy-17 alpha-methylestra-4,9,11-trien-3-one, Methyltrienolone;
mevalonic acid, 3,5-dihydroxy-3-methylpentanoic acid, mevalonic acid;
micafungin, FK 463, FK-463, FK463;
miconazole, 1-(2,4-Dichloro-beta-((2,4-dichlorobenzyl)oxy)phenethyl)imidazole, 1-[2-(2,4-dichlorobenzyl)oxy]-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole, Clc1ccc(COC(Cn2ccnc2)c3ccc(Cl)cc3Cl)c(Cl)c1;
Mictonorm, (1-methyl-4-piperidyl) 2,2-diphenyl-2-propoxy-acetate hydrochloride, (1-methylpiperidin-4-yl) 2,2-diphenyl-2-propoxy-ethanoate hydrochloride, (1-methylpiperidin-4-yl) 2,2-diphenyl-2-propoxyacetate hydrochloride;
Midazolam, Dormicum, Midazolam, Midazolam Hydrochloride;
Mifepristone, Contragest Brand of Mifepristone, Danco Brand of Mifepristone, Exelgyn Brand of Mifepristone;
MIII, 6-Methyl-5,7-dimethylthiopyrrolo[1,2-a]1,4-diazine, 7-methyl-6,8-bis(methylsulfanyl)pyrrolo[1,2-a]pyrazine, 7-Methyl-6,8-bis(methylthio)pyrrolo(1,2-a)pyrazine;
Milrinone,
Corotrop, Corotrope, Milrinone;
Mimosine, Leucaenine, Leucaenol, Leucenine;
mirtazapine, (N-methyl-11C)mirtazapine, 6-azamianserin, Celltech brand of mirtazapine;
Mit-C, 7-Amino-9.alpha.-methoxymitosane, Ametycin, Ametycine;
mithramycin, (1S)-5-deoxy-1-C-[(2S,3S)-7-{[2,6-dideoxy-3-O-(2,6-dideoxy-beta-D-arabino-hexopyranosyl)-beta-D-arabino-hexopyranosyl]oxy}-3-{[2,6-dideoxy-3-C-methyl-beta-D-ribo-hexopyranosyl-(1->3)-2,6-dideoxy-beta-D-arabino-hexopyranosyl-(1->3)-2,6-dideoxy-beta-D-arabi, aureolic acid, Mithracin;

MitoTracker-Red, MitoTracker-Red;
 Mitoxantrone, AHP Brand of Mitoxantrone Hydrochloride, Amgen
 Brand of Mitoxantrone Hydrochloride, ASTA Medica Brand of Mitoxantrone Hydrochloride;
 mizolastine, Allphar brand of mizolastine, Galderma brand of mizolastine, Mistalin;
 MLN8054, 4-((9-chloro-7-(2,6-difluorophenyl)-5H-pyrimidin-5-yl)amino)benzoic acid, MLN8054;
 mofarotene, 4-((2-(p-((E)-2-(5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-2-naphthyl)propenyl)phenoxy)ethyl)morpholine, arotinoid Ro 40-8757, mofarotene;
 Monensin, Coban, Monensin, Monensin A Sodium Complex;
 mono-N-demethyladinazolam, mono-N-demethyladinazolam;
 mono(2-ethylhexyl) phthalate, (2-ethylhexyl) hydrogen phthalate, 1,2-benzenedicarboxylic acid, mono(2-ethylhexyl) ester, 2-(2-ethylhexyloxycarbonyl)benzoic acid;
 monoethylglycinexylidide, ethylglycylxylidide, L 86, L-86;
 monomethylarsonic acid, disodium methanearsonate, methanearsonic acid, methylarsonate;
 monoterpenes, monoterpene, monoterpenes;
 monuron, 1,1-Dimethyl-3-(p-chlorophenyl)urea, 3-(4-chlorophenyl)-1,1-dimethylurea, 3-(p-Chlorophenyl)-1,1-dimethylurea;
 MORIN, 2',3,4',5,7-Pentahydroxyflavone, 2',4',3,5,7-Pentahydroxyflavone, 2',4',5,7-Tetrahydroxyflavan-3-ol;
 morpholine, ClCOCN1, morpholine, Tetrahydro-1,4-oxazine;
 morusin, morusin;
 motexafin gadolinium, (PB-7-11-233'2'4)-bis(acetato-kappaO)(9,10-diethyl-20,21-bis(2-(2-(2-methoxyethoxy)ethoxy)ethoxy)-4,15-dimethyl-8,11-imino-3,6:16,13-dinitrilo-1,18-benzodiazacycloeicosine-5,14-dipropanolato-kappaN(1),kappaN(18),kappaN(23),kappaN(24),kappaN(25))gadolinium, bis(acetato-kappaO){3,3'-[4,5-diethyl-16,17-bis{2-[2-(2-methoxyethoxy)ethoxy]ethoxy}-10,23-dimethyl-13,20,25,26,27-pentaazapentacyclo[20.2.1.1(3,6).1(8,11).0(14,19)]heptacos-1,3,5,7,9,11(26),12,14,16,18,20,22(25),23-tridecaene-9,24-diyl-kappa(5)N(13),N(2),gadolinium texaphyrin;
 Motuporin, Motuporin;
 moxifloxacin, 1-cyclopropyl--7-(2,8-diazabicyclo(4.3.0)non-8-

yl)-6-fluoro-8-methoxy-1,4-dihydro-4-oxo-3-quinolinecarboxylic acid, Actira, Avalox;
MPEG, 1,2-Dihydroxyethane, 1,2-Ethanediol, 146AR;
Muraglitazar, Muraglitazar;
mutalipocin II, ML-II, mutalipocin II;
mycophenolic acid, mycophenolic acid;
Mycose, .alpha.,.alpha.-Trehalose, .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl, .alpha.-D-Trehalose;
Myocol, (2R,3R,4S,5R)-2-(6-amino-9-purinyl)-5-(hydroxymethyl)tetrahydrofuran-3,4-diol, (2R,3R,4S,5R)-2-(6-aminopurin-9-yl)-5-(hydroxymethyl)oxolane-3,4-diol, (2R,3R,4S,5R)-2-(6-aminopurin-9-yl)-5-(hydroxymethyl)tetrahydrofuran-3,4-diol;
myricetin, 3,3',4',5,5',7-Hexahydroxyflavone, 3,5,7,3',4',5'-Hexahydroxyflavone, 3,5,7-trihydroxy-2-(3,4,5-trihydroxyphenyl)-4H-chromen-4-one;
myxothiazol, myxothiazol;
N-(2-cyclohexyloxy-4-nitrophenyl)methanesulfonamide, N-(2-cyclohexyloxy-4-nitrophenyl)methanesulfonamide, NS 398, NS-398;
N-(2-hydroxypropyl)methacrylamide, N-(2-hydroxypropyl)methacrylamide;
N-(3-(4-chlorophenyl)-2-(3-cyanophenyl)-1-methylpropyl)-2-methyl-2-((5-(trifluoromethyl)pyridin-2-yl)oxy)propanamide, MK 0364, MK-0364, MK0364;
N-(3-methoxyphenyl)-4-chlorocinnamanilide, N-(3-methoxyphenyl)-4-chlorocinnamanilide, SB 366791, SB366791;
N-(3-oxododecanoyl)homoserine lactone, 3-oxo-C12-HSL, 3-oxo-C8-HSL, 3O-C12-HSL;
N-(4-(6-(4-(1-(4-fluorophenyl)ethyl)piperazin-1-yl)pyrimidin-4-yloxy)benzo(d)thiazol-2-yl)acetamide, AMG 628, AMG-628, AMG628;
N-(4-(6-(4-trifluoromethylphenyl)pyrimidin-4-yloxy)benzothiazol-2-yl)acetamide, AMG 517, AMG-517, AMG517;
N-(4-cyano-benzo(b)thiophene-2-carbonyl)guanidine, KR-33028, N-(4-cyano-benzo(b)thiophene-2-carbonyl)guanidine;
N-(5-(((5-(1,1-dimethylethyl)-2-oxazolyl)methyl)thio)-2-thiazolyl)-4-piperidinecarboxamide, BMS 387032, BMS-387032, BMS387032;
N-acetylcysteine lysinate, L-NAC, N-acetylcysteine L-lysinate, N-acetylcysteine lysinate;
n-acetylmuramyl-l-alanyl-d-isoglutamine, 4-[2-[2-(3-acetylamino-

2,5-dihydroxy-6-methylol-tetrahydropyran-4-yl)oxypropanoylamino]propanoylamino]-5-amino-5-oxo-pentanoic acid, 4-[2-[2-[3-acetylamino-2,5-dihydroxy-6-(hydroxymethyl)oxan-4-yl]oxypropanoylamino]propanoylamino]-5-amino-5-oxo-pentanoic acid, 4-[2-[2-[3-acetylamino-2,5-dihydroxy-6-(hydroxymethyl)tetrahydropyran-4-yl]oxy-1-oxo-propyl]amino-1-oxo-propyl]amino-5-amino-5-oxo-pentanoic acid;

N-acetylneuraminic acid, 5-Acetamido-3,5-dideoxy-D-glycero-D-galacto-2-nonulosonic acid, 5-acetamido-3,5-dideoxy-D-glycero-D-galacto-non-2-ulopyranosonic acid, N-acetylneuraminic acid;

N-desmethyloclobazam, demethyloclobazam, N-desmethyloclobazam, nor-clobazam;

N-ethylmaleimide, 1-ethyl-1H-pyrrole-2,5-dione, Ethylmaleimide, N-ethylmaleimide;

N-methyl-N-(trimethylsilyl)trifluoroacetamide, N-methyl-N-(trimethylsilyl)trifluoroacetamide;

N-methylsulfonyl-6-(2-propargyloxyphenyl)hexanamide, MS-PPOH, N-methylsulfonyl-6-(2-propargyloxyphenyl)hexanamide;

N-oleoyldopamine, N-oleoyldopamine;

N-phenyl-1-naphthylamine, 1-anilinonaphthalene, 1-N-phenylnaphthylamine, N-phenyl-1-naphthylamine;

N,N,N',N'-tetramethylethylenediamine, CN(C)CCN(C)C, N,N,N',N'-tetramethyl-1,2-ethanediamine, N,N,N',N'-tetramethylethane-1,2-diamine;

N(6)-cyclohexyl-2-O-methyladenosine, N(6)-cyclohexyl-2-O-methyladenosine, SDZ WAG-994, SDZ-WAG-994;

N(6)-cyclopentyladenosine, N(6)-cyclopentyladenosine;

N3-IQ, (3-methylpyrido[3,2-e]benzimidazol-2-yl)amine, 2-Amino-3-methyl-3H-imidazo(4,5-f)quinoline, 2-Amino-3-methylimidazo(4,5-f)-quinoline;

Nadroparin, CY 216, CY-216, CY216;

naftifine, N-cinnamyl-N-methyl-1-naphthalenemethylamine hydrochloride, naftifin, naftifine;

nal-NH₂, nal-NH₂;

NALS, Akyposal SDS, Anticerumen, Aquarex ME;

nanchangmycin, nanchangmycin;

Naproxen, Aleve, Anaprox, Methoxypropiocin;

naratriptan, N-methyl-2-(3-(1-methylpiperiden-4-yl)indole-5-yl)ethanesulfonamide, N-methyl-2-[3-(1-methyl-4-piperidyl)-1H-indol-5-yl]-ethanesulfonamide, N-methyl-2-[3-(1-methylpiperidin-

4-yl)-1H-indol-5-yl]ethanesulfonamide;
narbonolide, narbonolide;
NARIGENIN, ()-Naringenin; 4?,5,7-Trihydroxyflavanone; H-1-benzopyran-4-one, ()-2,3-Dihydro-5,7-dihydroxy-2-(4-hydroxyphenyl)-4H-1-benzopyran-4-one, ()-Naringenin;
Narkotil, Aerothene MM, Dichlormethan, Dichlorocarbene;
Nasol, (+-)-Ephedrine, (-)-.alpha.-(1-Methylaminoethyl)benzyl alcohol, (-)-Ephedrine;
natalizumab, Antegren, natalizumab, Tysabri;
nateglinide, A 4166, A-4166, AY 4166;
Naxy, (3R,4S,5S,6R,7R,9R,11R,12R,13S,14R)-6-[(2S,3R,4S,6R)-4-dimethylamino-3-hydroxy-6-methyl-oxan-2-yl]oxy-14-ethyl-12,13-dihydroxy-4-[(2R,4R,5S,6S)-5-hydroxy-4-methoxy-4,6-dimethyl-oxan-2-yl]oxy-7-methoxy-3,5,7,9,11,13-hexamethyl-1-oxacyclotetradecane-2,10-di,
(3R,4S,5S,6R,7R,9R,11R,12R,13S,14R)-6-[(2S,3R,4S,6R)-4-dimethylamino-3-hydroxy-6-methyl-tetrahydropyran-2-yl]oxy-14-ethyl-12,13-dihydroxy-4-[(2R,4R,5S,6S)-5-hydroxy-4-methoxy-4,6-dimethyl-tetrahydropyran-2-yl]oxy-7-methoxy-3,5,7,9,11,13-hexamethyl-1-oxacy, (3R,4S,5S,6R,7R,9R,11R,12R,13S,14R)-6-[(2S,3R,4S,6R)-4-dimethylamino-3-hydroxy-6-methyl-tetrahydropyran-2-yl]oxy-14-ethyl-12,13-dihydroxy-4-[(2R,4R,5S,6S)-5-hydroxy-4-methoxy-4,6-dimethyl-tetrahydropyran-2-yl]oxy-7-methoxy-3,5,7,9,11,13-hexamethyl-1-oxacy;
nebivolol, alpha,alpha'-(iminobis(methylene))bis(6-fluoro-3,4-dihydro)-2H-1-benzopyran-2-methanol, Berlin-Chemie brand of nebivolol hydrochloride, Lobivon;
Nefazodone, 1-(3-(4-(m-Chlorophenyl)-1-piperazinyl)propyl)-3-ethyl-4-(2-phenoxyethyl)-delta2-1,2,4-triazolin-5-one, 2-[3-[4-(3-Chlorophenyl)-1-piperazinyl]propyl]-5-ethyl-2,4-dihydro-4-(2-phenoxyethyl)-3H-1,2,4-triazol-3-one, 2-[3-[4-(3-chlorophenyl)-1-piperazinyl]propyl]-5-ethyl-4-[2-(phenoxy)ethyl]-1,2,4-triazol-3-one;
nefiracetam, DM 9384, DM-9384, N-(2,6-dimethylphenyl)-2-(2-oxo-1-pyrrolidinyl)acetamide;
Nelfinavir, AG 1343, AG-1343, AG1343;
Neomycin, Fradiomycin Sulfate, Neomycin, Neomycin Palmitate;
Neopterin, 2-Amino-6-(1,2,3-trihydroxypropyl)-4(3H)-pteridinone, Monapterin, Neopterin;
Neostigmine, Neostigmine, Neostigmine Bromide, Neostigmine Me-

thylsulfate;

Neut, Acidosan, Baking soda, Bisodium carbonate;

Nevirapine, BI RG 587, BI-RG-587, BIRG587;

NFBA, .alpha.,.alpha.,.alpha.-Trifluoro-2-methyl-4'-nitro-m-propionotoluidide, 2-Methyl-N-(4-nitro-3-[trifluoromethyl]phenyl)propanamide, 2-methyl-N-[4-nitro-3-(trifluoromethyl)phenyl]propanamide;

Nialk, 1,1,2-trichloroethene, 1,1,2-trichloroethylene, 1,1-dichloro-2-chloroethylene;

Nicardipine, Almirall Brand of Nicardipine Hydrochloride, Antagonil, Cardene;

Niflumic Acid, Donalgin, Flunir, Niflactol;

nimesulide, 4'-nitro-2'-phenoxymethanesulfonanilide, N-(4-nitro-2-phenoxyphenyl)methanesulfonamide, nimesulide;

niobium, 41Nb, columbio, columbium;

nitecapone, 3-(3,4-dihydroxy-5-nitrobenzylidene)-2,4-

pentanedione, nitecapone, OR 462;

nitroanilide, nitroanilide;

nitroaspirin, 2-acetoxybenzoate-2-(1-nitroxymethyl)phenyl ester, NCX 4016, NCX-4016;

Nitrofurans, Nitrofurans;

NITROPYRENE, 1-Nitropyrene, 1-Nitropyrene [Nitroarenes], 1-Nitropyrene [Polycyclic aromatic compounds];

nitrosamines, N-Nitroso amines, nitrosamines;

Nitrosoanabasine, (+-)-1-Nitrosoanabasine, (+-)-3-(1-Nitroso-2-piperidinyl)pyridine,

(+)-N-Nitrosoanabasine;

Nitrosocysteine, 2-amino-3-(nitrosothio)propanoic acid, 2-amino-3-(nitrosothio)propionic acid, 2-amino-3-nitrososulfanylpropanoic acid;

nitrosulindac, NCX 1102, NCX-1102, NCX1102;

Nizatidine, Axid, LY 139037, LY-139037;

NK 104, bis((3R,5S,6E)-7-(2-cyclopropyl-4-(4-fluorophenyl)-3-quinolyl)-3,5-dihydroxy-6-heptenoate), monocalcium salt, itavastatin, nisvastatin;

NK314, NK314;

NMDA, (NMDA), 2-methylaminobutanedioic acid, 2-methylaminosuccinic acid;

NN 703, NN 703, NN-703, NN703 cpd;

Noan, 1-Methyl-5-phenyl-7-chloro-1,3-dihydro-2H-1,4-

benzodiazepin-2-one, 2H-1,4-Benzodiazepin-2-one, 7-chloro-1,3-dihydro-1-methyl-5-phenyl-, 7-Chloro-1,3-Dihydro-1-Methyl-5-Phenyl-2H-1,4-Benzodiazepin-2-One;

Nobiletin, 2-(3,4-dimethoxyphenyl)-5,6,7,8-tetramethoxy-4-chromenone, 2-(3,4-Dimethoxyphenyl)-5,6,7,8-tetramethoxy-4H-1-benzopyran-4-one, 2-(3,4-dimethoxyphenyl)-5,6,7,8-tetramethoxy-chromen-4-one;

NOC 18, NOC 18, NOC-18;

Nocodazole, Nocodazole, NSC 238159, NSC-238159;

nodularin, nodularin;

Nodularin v, Nodularin v;

nolatrexed, 3,4-dihydro-2-amino-6-methyl-4-oxo-5-(4-pyridylthio)quinazoline dihydrochloride, AG 337, AG-337;

Nonoxynol, Advantage S, Advantage-S, Delfen Cream;

noralfentanil, 4-MPPP, N-(4-(methoxymethyl)-4-piperidinyl)-N-phenylpropanamide, noralfentanil;

norbuprenorphine, norbuprenorphine;

Norclozapine, 3-chloro-6-(1-piperazinyl)-5H-benzo[c][1,5]benzodiazepine, 3-chloro-6-piperazin-1-yl-5H-benzo[c][1,5]benzodiazepine, 5H-Dibenzo(b,e)(1,4)diazepine, 8-chloro-11-(1-piperazinyl)-;

Nordihydroguaiaretic Acid, 4,4'-(2,3 Dimethyl-1,4-butanediyl)bis(1,2-benzenediol), Actinex, Dihydronorguaiaretic Acid;

Norethindrone, Conceplan, Ethinylnortestosterone, Micronor;

noreximide, K 2154, K-2154, norborn-5-ene-2,3-cis-exo-dicarboximide;

norfluoxetine, norfluoxetine;

Norgestrel, DL Norgestrel, DL-Norgestrel, Neogest;

norharman, norharman;

norketobemidone, norketobemidone;

norlaudanosoline, (R,S)-Norlaudanosoline, 1-(3,4-dihydroxybenzyl)-1,2,3,4-tetrahydroisoquinoline-6,7-diol, norlaudanosoline;

normeperidine, normeperidine, normeperidine carbonate (2:1), normeperidine hydrochloride;

Nortilidine, (1R,2S)-2-methylamino-1-phenyl-1-cyclohex-3-enecarboxylic acid ethyl ester, (1R,2S)-2-methylamino-1-phenyl-cyclohex-3-ene-1-carboxylic acid ethyl ester, 3-Cyclohexene-1-carboxylic acid, 2-(methylamino)-1-phenyl-, ethyl ester, trans-

(+)-;

norverapamil, D 591, N-demethylverapamil, norverapamil;

novobiocin, novobiocin;

NS-187, INNO-406, NS-187;

NSC 23766, NSC 23766, NSC-23766, NSC23766;

NSC 366140, 9-methoxy-N,N-dimethyl-5-nitropyrasolo(3,4,5-k)acridine-2(6H)-propanamine, NSC 366140, NSC 366140, methanesulfonate salt;

NSC 663284, NSC 663284, NSC-663284, NSC663284;

NSC-134754, 3-ethyl-9,10-dimethoxy-2-(1,2,3,4-tetrahydroisoquinolin-1-ylmethyl)-1,6,7,11b-tetrahydro-4H-pyrido(2,1-a)isoquinoline, NSC-134754;

NU2058, NU2058, O(6)-cyclohexylmethylguanine;

number-one, number-one;

nutlin 3, nutlin 3, nutlin-3, nutlin-3A;

NVP-AEW541, NVP-AEW541;

Nylon, 6-Aminohexanoic acid homopolymer, A 1030N0, Akulon;

O-(chloroacetylcarbamoyle)fumagillol, 5-methoxy-4-(2-methyl-3-(3-methyl-2-butenyl)oxiranyl)-1-oxaspiro(2,5)oct-6-yl(chloroacetyl) carbamate, AGM 1470, AGM-1470;

O-desethylreboxetine, O-desethylreboxetine;

O-Due, .beta.-Aminoethylsulfonic acid, 1-Aminoethane-2-sulfonic acid, 2-Aminoethanesulfonic acid;

o-quinone, 1,2-Benzoquinone, 2-benzoquinone, 3,5-cyclohexadiene-1,2-dione;

obovatol, 4',5-diallyl-2,3-dihydroxybiphenyl ether, obovatol;

OCDD, 1,2,3,4,6,7,8,9-Octachlorodibenzo(1,4)dioxin,

1,2,3,4,6,7,8,9-Octachlorodibenzo(b,e)(1,4)dioxin,

1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin;

octanediol, octanediol;

Octoxynol, Octoxinol, Octoxinols, Octoxynol;

Octreotide, Compound 201 995, Compound 201-995, Compound 201995;

Okadaic Acid, Ocadaic Acid, Okadaic Acid;

olanzapine, 2-methyl-4-(4-methyl-1-piperazinyl)-10H-thieno(2,3-b)(1,5)benzodiazepine, Eli Lilly brand of olanzapine, Lilly brand of olanzapine;

olefins, olefin, olefins;

oleoylethanolamide, oleoylethanolamide;

olmelin, 4'-Methoxy-5,7-dihydroxy isoflavone, 4'-

Methylgenistein, 4H-1-Benzopyran-4-one, 5,7-dihydroxy-3-(4-

methoxyphenyl)-;

olmesartan, 4-(hydroxy-1-methylethyl)-2-propyl-1-((2'-(1H-tetrazol-5-yl)-1,1'-biphenyl-4-yl)methyl)-1H-imidazole-5-carboxylic acid, CS-088, olmesartan;

olomoucine, olomoucine;

olomoucine II, olomoucine II;

Oltipraz, 3H-1,2-DITHIOLE-3-THIONE, 4-METHYL-5-PYRAZINYL-, 4-methyl-5-(2-pyrazinyl)-3-dithiolethione, 4-Methyl-5-(pyrazinyl)-3H-1,2-dithiole-3-thione;

omalizumab, Novartis Brand of Omalizumab, omalizumab, Xolair;

omega-agatoxin, omega-agatoxin;

omega-Conotoxin GVIA, Conus geographus Toxin, Conus geographus Toxin GVIA, omega CgTX;

omega-N-Methylarginine, D-NMMA, L Monomethylarginine, L NG Monomethyl Arginine;

Omeprazole, Esomeprazole, H 168 68, H 168-68;

omeprazole sulfone, omeprazole sulfone;

onapristone, onapristone;

ONCB, 1-chloro-2-nitro-benzene, 1-Chloro-2-nitrobenzene, 1-Nitro-2-chlorobenzene;

Ondansetron, GR 38032F, GR-38032F, GR38032F;

ONO4819, AE1 734, AE1-734, methyl 7-((1R,2R,3R)-3-hydroxy-2-((E)-(3S)-3-hydroxy-4-(m-methoxymethylphenyl)-1-butenyl)-5-oxocyclopentyl)-5-thiaheptanoate;

Optef, (11beta)-11,17,21-Trihydroxy-pregn-4-ene-3,20-dione, (11beta)-11,17,21-trihydroxypregn-4-ene-3,20-dione, (8S,9S,10R,11S,13S,14S,17R)-11,17-dihydroxy-17-(2-hydroxy-1-oxoethyl)-10,13-dimethyl-2,6,7,8,9,11,12,14,15,16-decahydro-1H-cyclopenta[a]phenanthren-3-one;

OR 1246, OR 1246;

oroxylin A, oroxylin A;

Orphenadrine, Disipal, Lysantin, Mefenamine;

Osten, (Ipriflavone), 3-phenyl-7-propan-2-yloxy-chromen-4-one, 3-phenyl-7-propan-2-yloxychromen-4-one;

osteum, osteum;

OSU 03012, 2-amino-N-(4-(5-(2-phenanthrenyl)-3-(trifluoromethyl)-1H-pyrazol-1-yl)phenyl)acetamide, OSU 03012, OSU-03012;

Ouabain, Acocantherin, Acolongifloroside K, G Strophanthin;

OVEX, (17beta)-17-hydroxyestra-1(10),2,4-trien-3-yl benzoate,

.beta.-Estradiol 3-benzoate, .beta.-Estradiol benzoate;
Ovex, (17-alpha)-19-Norpregna-1,3,5(10)-trien-20-yne-3,17-diol,
(17beta)-17-ethynylestra-1(10),2,4-triene-3,17-diol,
(8R,9S,13S,14S,17R)-17-ethynyl-13-methyl-7,8,9,11,12,14,15,16-
octahydro-6H-cyclopenta[a]phenanthrene-3,17-diol;
oxaliplatin, 1,2-diaminocyclohexane platinum oxalate, 1,2-
diamminocyclohexane(trans-1)oxalatoplatinum(II), 1-OHP;
Oxarol, (1R,3S,5Z)-5-[(2E)-2-[(1S,3aS,7aS)-1-[(1S)-1-(3-hydroxy-
3-methyl-butoxy)ethyl]-7a-methyl-2,3,3a,5,6,7-hexahydro-1H-
inden-4-ylidene]ethylidene]-4-methylene-cyclohexane-1,3-diol,
(1R,3S,5Z)-5-[(2E)-2-[(1S,3aS,7aS)-1-[(1S)-1-(3-hydroxy-3-
methyl-butoxy)ethyl]-7a-methyl-2,3,3a,5,6,7-hexahydro-1H-inden-
4-ylidene]ethylidene]-4-methylidene-cyclohexane-1,3-diol,
(1R,3S,5Z)-5-[(2E)-2-[(1S,3aS,7aS)-1-[(1S)-1-(3-hydroxy-3-
methylbutoxy)ethyl]-7a-methyl-2,3,3a,5,6,7-hexahydro-1H-inden-4-
ylidene]ethylidene]-4-methylenecyclohexane-1,3-diol;
oxaspirodion, oxaspirodion;
oxatomide, oxatomide;
Oxazepam, Adumbran, Oxazepam, Serax;
oxcarbazepine, Desitin brand of oxcarbazepine, GP 47680, Novar-
tis brand of oxcarbazepine;
Oxotremorine, Oxotremorine, Oxytremorine;
oxotremorine M, N,N,N-trimethyl-4-(2-oxopyrrolidin-1-yl)but-2-
yn-1-aminium, oxotremorine M;
Oxymorphone, Bristol-Myers Squibb Brand of Oxymorphone Hydro-
chloride, Endo Brand of Oxymorphone Hydrochloride, Methylnalox-
one;
Oxyntomodulin, Glicentin (33-69), Oxyntomodulin, Proglucagon
(33-69);
Oxytrol, 2-cyclohexyl-2-hydroxy-2-phenyl-acetic acid 4-
diethylaminobut-2-ynyl ester, 2-cyclohexyl-2-hydroxy-2-
phenylacetic acid 4-diethylaminobut-2-ynyl ester, 4-
(diethylamino)but-2-yn-1-yl cyclohexyl(hydroxy)phenylacetate;
p-ABA, 4-Aminobenzamidine, 4-Aminobenzenecarboximidamide, Ben-
zamidine, p-amino-;
p-XSC, 1,4-bis(selenocyanatomethyl)benzene, 1,4-
Phenylenebis(methylene)selenocyanate, p-XSC;
p-Xylol, 1,4-dimethylbenzene, 1,4-Dimethylbenzol, 1,4-xylene;
Paclitaxel, 7 epi Taxol, 7-epi-Taxol, Anzatax;
paeonol, 2-hydroxy-4-methoxyacetophenone, paeonol;

palladium, 46Pd, paladio, palladium;
palmitoleate, (9Z)-hexadec-9-enoate, palmitoleate;
PALMITOYL, 16-Hexadecanal, hexadecanal, N-hexadecanal;
Palmitoylcarnitine, Hexadecanoylcarnitine, Palmitoylcarnitine, Palmitylcarnitine;
pamidronate, (3-amino-1-hydroxypropylidene)-1,1-biphosphonate, (3-amino-1-hydroxypropylidene)-1,1-bisphosphonate, 1-hydroxy-3-aminopropane-1,1-diphosphonic acid;
panaxadiol, panaxadiol, panaxadiol, (3beta,12beta)-isomer;
panepoxydone, panepoxydone;
pantoprazole, BY 1023, BY-1023, pantoprazole;
Papaverine, Cerespan, Papaverine, Papaverine Hydrochloride;
Papite, 2-Propen-1-one, 2-propenal, 2-Propenal, homopolymer;
PAPP, 1-(2-(4-Aminophenyl)ethyl)-4-(3-(trifluoromethylphenyl)piperazine, 4-(2-(4-(3-(Trifluoromethyl)phenyl)-1-piperazinyl)ethyl)aniline hydrochloride, 4-[2-[4-[3-(trifluoromethyl)phenyl]-1-piperazinyl]ethyl]aniline;
parecoxib, Dynastat, N-(((5-methyl-3-phenylisoxazol-4-yl)-phenyl)sulfonyl)propanamide, N-(((5-methyl-3-phenylisoxazol-4-yl)-phenyl)sulfonyl)propanamine, sodium salt;
Paroxetine, Aropax, BRL 29060, BRL-29060;
Parsal, 5-Amino-N-butyl-2-(2-propynyloxy)benzamide, 5-amino-N-butyl-2-prop-2-ynoxy-benzamide, 5-amino-N-butyl-2-prop-2-ynoxybenzamide;
Parthenolide, Parthenolide;
PC 314, PC 314, PC-314, PC314 cpd;
PCA 4230, PCA 4230;
PCSO, 2-amino-3-prop-2-enylsulfinyl-propanoic acid, 2-amino-3-prop-2-enylsulfinylpropanoic acid, 3-allylsulfinyl-2-amino-propanoic acid;
PD
134308, PD 134308;
PD 144795, PD 144795;
PD 180988, CI-1034, CI1034, PD 180988;
PD 98059, 2-(2'-amino-3'-methoxyphenyl)oxanaphthalen-4-one, 2-(2-amino-3-methoxyphenyl)-4H-1-benzopyran-4-one, PD 098059;
pectin, pectin;
Pemetrexed, (2R)-2-[[4-[2-(2-amino-4-keto-1,7-dihydropyrrolo[4,5-e]pyrimidin-5-yl)ethyl]benzoyl]amino]glutaric

acid, (2R)-2-[[4-[2-(2-amino-4-oxo-1,7-dihydropyrrolo[4,5-e]pyrimidin-5-yl)ethyl]benzoyl]amino]pentanedioic acid, (2R)-2-[[4-[2-(2-amino-4-oxo-1,7-dihydropyrrolo[4,5-e]pyrimidin-5-yl)ethyl]phenyl]carbonylamino]pentanedioic acid;

Penicillins, Antibiotics, Penicillin, Penicillin, Penicillin Antibiotics;

Penite, Arsenite, sodium, Atlas A, Chem Pels C;

Pentagastrin, Acignost, Gastrin Pentapeptide, Pentagastrin;

Pentoxifylline, Agapurin, BL 191, BL-191;

Peplomycin, NK 631, NK-631, NK631;

peppermint oil, peppermint oil, WS 1340, WS-1340;

Pepstatin A, Pepstatin A;

Perazine, Perazine, Perazine Dihydrochloride, Perazine Maleate;

Pergolide, Athena Brand of Pergolide Mesylate, Celance, Draxis Brand of Pergolide Mesylate;

Perillol, (−)-Perillyl alcohol, (-)-Perillyl alcohol, (-)-Perillylalcohol;

Perilymph, Perilymph, Perilymphs;

periodate, IO₄(-), periodate, tetraoxidoiodate(1-);

perospirone, 2-(4-(4-(1,2-benzisothiazol-3-yl)-1-piperazinyl)butyl)hexahydro-1H-isoindole-1,3-(2H)-dione, perospirone, SM 9018;

perovskite, calcium titanium oxide, CaTiO₃, perovskite;

PFPA, 2,2,3,3,3-pentafluoropropanoic acid (2,2,3,3,3-pentafluoro-1-oxopropyl) ester, 2,2,3,3,3-pentafluoropropanoyl 2,2,3,3,3-pentafluoropropanoate, 2,2,3,3,3-pentafluoropropionic acid 2,2,3,3,3-pentafluoropropanoyl ester;

Phebestin, Phebestin;

phen, .beta.-Phenanthroline, 1,10-Fenanthroline, 1,10-o-Phenanthroline;

phenolate, Phenol ion, Phenol, ion(1-) (VAN), phenolate;

Phenols, Carbol, Phenols;

phenoxodiol, 7-hydroxy-3-hydroxyphenyl-1H-benzopyran, phenoxodiol;

Phenprocoumon, Falithrom, Hexal Brand of Phenprocoumon, Li-quamar;

Phentermine, Adipex P, Adipex-P, AdipexP;

phenyl-propionamide, phenyl-propionamide;

phenyl-Pyridinium, phenyl-Pyridinium;

Phenytoin, 5,5-Diphenylhydantoin, Antisacer, Difenin;

pheophorbide a, (2(2)R,17S,18S)-7-ethyl-2(1),2(2),17,18-tetrahydro-2(2)-(methoxycarbonyl)-3,8,13,17-tetramethyl-2(1)-oxo-12-ethenylcyclopenta[at]porphyrin-18-propanoic acid, (3S,4S,21R)-9-ethenyl-14-ethyl-21-(methoxycarbonyl)-4,8,13,18-tetramethyl-20-oxo-3-phorbinepropanoic acid, 3-[(3S,4S,21R)-14-ethyl-21-(methoxycarbonyl)-4,8,13,18-tetramethyl-20-oxo-9-vinylphorbin-3-yl]propanoic acid;

phloretin, 3-(4-hydroxyphenyl)-1-(2,4,6-trihydroxyphenyl)-1-propanone, 3-(4-hydroxyphenyl)-1-(2,4,6-trihydroxyphenyl)propan-1-one, phloretin;

PHOB, 2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-ethyl-5-phenyl-, 5-ethyl-5-phenyl-1,3-diazinane-2,4,6-trione, 5-Ethyl-5-phenyl-2,4,6(1H,3H,5H)-pyrimidinetrione;

phorate, O,O-Diethyl S-(ethylthio)methyl phosphorodithioate, O,O-Diethyl S-ethylmercaptomethyl dithiophosphate, O,O-diethyl S-[(ethylsulfanyl)methyl] dithiophosphate;

phorbol, phorbol;

phorbol 12-phenylacetate 13-acetate 20-homovanillate, phorbol 12-phenylacetate 13-acetate 20-homovanillate;

phosphatidylethanolamines, (3-Phosphatidyl)-ethanolamine, 1,2-diacyl-sn-glycero-3-phosphoethanolamine, 1-Acyl-2-acyl-sn-glycero-3-phosphoethanolamine;

Phosphatidylinositol 4,5-Diphosphate, Phosphatidylinositol 4,5-Biphosphate, Phosphatidylinositol 4,5-Diphosphate, Phosphatidylinositol-4,5-Bisphosphate;

phosphatidylinositol phosphate, PtdIns(4,5)P2, phosphatidylinositol phosphate, PtdIns(4,5)P2, PtdIns(4,5)P2;

phytanic acid, 3,7,11,15-tetramethyl-hexadecanoic acid, Phytanate, phytanic acid;

Picibanil, NSC B116209, NSC-B116209, NSCB116209;

picric acid, 2,4,6-trinitrophenol, picrate, picric acid;

pifithrin, 1-(4-methylphenyl)-2-(4,5,6,7-tetrahydro-2-imino-3(2H)-benzothiazolyl)ethanone hydrobromide, 2-(2-imino-4,5,6,7-tetrahydrobenzothiazol-3-yl)-1-p-tolyloethanone, PFT alpha;

Pilot, 2-(4-((6-Chloro-2-quinoxalinyloxy)phenoxy)propanoic acid ethyl ester, 2-[4-(6-chloroquinoxalin-2-yl)oxyphenoxy]propionic acid ethyl ester, 2-[4-[(6-chloro-2-quinoxalinyloxy)phenoxy]propanoic acid ethyl ester;

pimecrolimus, 33-epi-chloro-33-desoxyascomycin, ASM 981, Elidel;

pioglitazone, 5-(4-(2-(5-ethyl-2-pyridyl)ethoxy)benzyl)-2,4-

thiazolidinedione, Actos, AD 4833;
pipecoloxylidide, pipecoloxylidide;
piperidine, Azacyclohexane, C1CCNCC1, Hexahydropyridine;
piperine, ((1-5-(1,3)-benzodioxol-5-yl)-1-oxo-2,4-pentadienyl)piperidine, 1-piperoylpiperidine, piperine;
Pira, 1-((p-(2-(5-Chloro-o-anisamido)ethyl)phenyl)sulfonyl)-3-cyclohexylurea, 1-(p-(2-(5-Chloro-2-methoxybenzamido)ethyl)benzenesulfonyl)-3-cyclohexylurea, 5-Chloro-N-(2-(4-(((cyclohexylamino)carbonyl)amino)sulfonyl)phenyl)ethyl)-2-methoxybenzamide;
pirinixic acid, (4-chloro-6-(2,3-xylidino)-2-pyrimidinylthio)acetic acid, 4-chloro-6-(2,3-dimethylphenyl)amino-2-pyrimidinylthioacetic acid, 4-chloro-6-(2,3-xylidiny)-2-pyrimidinylthioacetic acid;
Piroxicam, CP 16171, CP-16171, CP16171;
PKC412, PKC 412, PKC-412, PKC412;
plumbagin, 2-methyl-5-hydroxy-1,4-naphthoquinone, 5-hydroxy-2-methyl-1,4-naphthalenedione, 5-hydroxy-2-methyl-1,4-naphthoquinone;
Pluronic p 85, Pluronic p 85;
PMDT, 1,1,4,7,7-pentamethyldiethylenetriamine, 1,2-Ethanediamine, N-(2-(dimethylamino)ethyl)-N,N',N'-trimethyl-, 1,2-Ethanediamine, N-[2-(dimethylamino)ethyl]-N,N',N'-trimethyl-;
PMPA, (((1R)-2-(6-Amino-9H-purin-9-yl)-1-methylethoxy)methyl)phosphonic acid, (R)-9-(2-Phosphonomethoxypropyl)adenine, (R)-9-(2-Phosphonylmethoxypropyl)adenine;
PMSF, .alpha.-Toluenesulfonyl fluoride, alpha-TOLUENESULFONYL FLUORIDE, alpha-Toluenesulphonyl fluoride;
PNPP, (4-nitrophenoxy)phosphonic acid, (4-nitrophenyl) dihydrogen phosphate, 4-Nitrophenyl dihydrogen phosphate;
Podophyllotoxin, Ardern Brand of Podophyllotoxin, Canderm Brand of Podophyllotoxin, Condylin;
polidocanol, aethoxysclerol, aethoxysklerol, aetoxisclerol;
poly-gamma-glutamate, poly-gamma-glutamate;
ponicidin, ponocidin;
poractant alfa, Allphar brand of poractant alfa, Chiesi brand of poractant alfa, Curosurf;

posaconazole, Noxafil, posaconazole, SCH 56592;
potassium tellurate(IV), potassium tellurate(IV);
PQQ Cofactor, 2,7,9-Tricarboxy-1H-Pyrrolo-(2,3-f)Quinoline-4,5-Dione, 2,7,9-Tricarboxypyrroloquinoline Quinone, 4,5-Dihydro-4,5-Dioxo-1-H-Pyrrolo(2,3-f)Quinoline-2,7,9-Tricarboxylic Acid;
pranlukast, 8-(4 (4-phenylbutoxy)benzoyl)amino-2-(tetrazol-5'-yl)-4-oxo-4H-1-benzopyran, ONO 1078, ONO-1078;
Pravastatin, Apo Pravastatin, Apo-Pravastatin, Apotex Brand of Pravastatin Sodium;
Prazosin, Furazosin, Justac, Minipress;
PRDL, (11beta)-11,17,21-Trihydroxypregna-1,4-diene-3,20-dione, (8S,9S,10R,11S,13S,14S,17R)-11,17-dihydroxy-17-(2-hydroxy-1-oxoethyl)-10,13-dimethyl-7,8,9,11,12,14,15,16-octahydro-6H-cyclopenta[a]phenanthren-3-one, (8S,9S,10R,11S,13S,14S,17R)-11,17-dihydroxy-17-(2-hydroxyacetyl)-10,13-dimethyl-7,8,9,11,12,14,15,16-octahydro-6H-cyclopenta[a]phenanthren-3-one;
Precursor mrna, Precursor mrna;
Prednisone, acis Brand of Prednisone, Apo-Prednisone, Apotex Brand of Prednisone;
pregnane, pregnane;
Pregnanes, Pregnanes;
Pregnanolone, 3 alpha Hydroxy 5 alpha pregnan 20 one, 3 alpha Hydroxy 5 beta pregnan 20 one, 3 alpha, 5 beta-Tetrahydroprogesterone;
pregnenolone 16alpha-carbonitrile, 3beta-hydroxy-20-oxo-5-pregnene-16alpha-carbonitrile, 3beta-hydroxy-20-oxopregn-5-ene-16alpha-carbonitrile, PCN;
Pregnyl, biogonadil, choriogonadotropin, choriogonin;
preussin, (+)-preussin, L 657398, L-657,398;
Primidone, Apo-Primidone, Apotex Brand of Primidone, Astra Brand of Primidone;
Proadifen, Diethylaminoethyldiphenylpropyl Acetate, Proadifen, Proadifen Hydrochloride;
Proanthocyanidins, Anthocyanidin Polymers, Condensed Tannin, Condensed Tannins;
Probenecid, Benecid, Benemid, Benuryl;
Probucol, Almirall Brand of Probucol, Aventis Brand of Probucol, Biphenabid;
Procasil, 2,3-Dihydro-6-propyl-2-thioxo-4(1H)-pyrimidinone, 2-

Mercapto-4-hydroxy-6-n-propylpyrimidine, 2-Mercapto-6-propyl-4-pyrimidone;
Procetofen, Abbott Brand of Procetofen, AbZ Brand of Procetofen, Aliud Brand of Procetofen;
procyanidin B2, procyanidin B2;
Prodix, (8R,9S,10R,13S,14S,17R)-17-acetyl-17-hydroxy-10,13-dimethyl-2,6,7,8,9,11,12,14,15,16-decahydro-1H-cyclopenta[a]phenanthren-3-one, (8R,9S,10R,13S,14S,17R)-17-ethanoyl-17-hydroxy-10,13-dimethyl-2,6,7,8,9,11,12,14,15,16-decahydro-1H-cyclopenta[a]phenanthren-3-one, 17-alpha-Hydroxyprogesterone;
prolactin, polymeric, BBPRL, big big prolactin, big prolactin;
Propafenone, Abbott Brand of Propafenone Hydrochloride, Aliud Brand of Propafenone Hydrochloride, Alpharma Brand of Propafenone Hydrochloride;
Propanesulfonate, 1-Propanesulfonic acid, Ammonium propanesulfonate, propane-1-sulfonic acid;
Propofol, 2,6-Bis(1-methylethyl)phenol, 2,6-Diisopropylphenol, Abbott Brand of Propofol;
propyl pyrazole triol, PPT cpd, propyl pyrazole triol, propylpyrazole triol;
propyne, 1-propyne, allylene, CC#C;
prostratin, prostratin;
protopanaxadiol, 20(S)-protopanaxadiol, protopanaxadiol, protopanaxadiol, (3beta,12beta)-isomer;
protopanaxatriol, protopanaxatriol, protopanaxatriol, (3beta,6alpha,12beta,20R)-isomer;
PS 15, N-(3(2,4,5-trichlorophenoxy)propyloxy)-N'-(1-methylethyl)imidocarbonimidicdiamide hydrochloride, PS 15, PS-15;
Pseudohypericin, Hypericum Extract, Phenanthro(1,10,9,8-opgra)perylene-7,14-dione, 1,3,4,6,8,13-hexahydroxy-10-(hydroxymethyl)-11-methyl-, stereoisomer, Pseudohypericin;
Pseudomonas-exotoxin, Pseudomonas-exotoxin;
Psoralens,
Furanocoumarins, Furocoumarins, Psoralens;
psychosine-3'-sulfate ester, psychosine-3'-sulfate ester;
PTBP, 1-Hydroxy-4-tert-butylbenzene, 2-tert-Butylphenol, 4-(1,1-Dimethylethyl)phenol;
pteridine, 1,3,5,8-tetraazanaphthalene, azinepurine,

clcnc2ncncc2n1;

Pterostilbene, 3',5'-Dimethoxy-4-stilbenol, 3,5-Dimethoxy-4-
hydroxystilbene, 3,5-Dimethoxy-4'-hydroxy-trans-stilbene;

PURAC, (+)-Lactic acid, (+-)-2-Hydroxypropanoic acid, (2R)-2-hydroxypropanoic acid;

Puromycin, CL 13900, CL-13900, CL13900;

putrescine, 1,4-Butanediamine, 1,4-butylenediamine, 1,4-DIAMINOBTANE;

Pyocyanine, Pyocyanin, Pyocyanine;

Pyra, 1,2-Ethanediamine, N-((4-methoxyphenyl)methyl)-N',N'-dimethyl-N-2-pyridinyl-, 1,2-Ethanediamine, N-((4-methoxyphenyl)methyl)-N',N'-dimethyl-N-2-pyridinyl- (9CI), 1,2-Ethanediamine, N-[(4-methoxyphenyl)methyl]-N',N'-dimethyl-N-2-pyridinyl-;

pyranones, oxopyrans, pyranone, pyranones;

pyrazole, Pyrazol, pyrazole;

Pyrethrins, Pyrethrins, Pyrethroids;

pyridazine, 1,2-diazine, clccnnc1, o-diazine;

Pyrimethamine, Aventis Brand of Pyrimethamine, Chloridin, Daraprim;

pyrimidin-2-one beta-ribofuranoside, NSC 309132, pyrimidin-2-one beta-D-ribofuranoside, pyrimidin-2-one beta-ribofuranoside;

Pyro, 1,2,3-Benzenetriol, 1,2,3-TRIHYDROXY-BENZENE, 1,2,3-Trihydroxybenzen;

pyrogallol sulfonphthalein, pyrogallol sulfonphthalein;

pyrrole-2-carboxylic acid, 1H-pyrrole-2-carboxylic acid, 2-pyrrolicarboxylic acid, PCA;

pyrrolidine dithiocarbamic acid, pyrrolidine dithiocarbamic acid, Pyrrolidinedithiocarbamate;

pyrroloazepinone, pyrroloazepinone;

Qingkailing, Qingkailing;

quercitrin, quercetin 3-O-rhamnoside, quercetin-3-L-rhamnoside, quercetrin;

quetiapine, 2-(2-(4-dibenzo(b,f)(1,4)thiazepine-11-yl-1-piperazinyl)ethoxy)ethanol, AstraZeneca Brand of Quetiapine Fumarate, Ethanol, 2-(2-(4-dibenzo(b,f)(1,4)thiazepin-11-yl-1-piperazinyl)ethoxy)-, (E)-2-butenedioate (2:1) (salt);

Quicifal, 1-Ascorbyl palmitate, 6-Hexadecanoyl-L-ascorbic acid, 6-Monopalmitoyl-L-ascorbate;

quinazoline, 1,3-benzodiazine, 1,3-diazanaphthalene, 5,6-benzopyrimidine;
Quinolinium, Quinolinium;
Quinpirole, Quinpirole, Quinpirole Hydrochloride, Quinpirole Monohydrochloride;
quinuclidin-3'-yl-1-phenyl-1,2,3,4-tetrahydroisoquinoline-2-carboxylate monosuccinate, quinuclidin-3'-yl 1-phenyl-1,2,3,4-tetrahydroisoquinoline-2-carboxylate monohydrochloride, quinuclidin-3'-yl-1-phenyl-1,2,3,4-tetrahydroisoquinoline-2-carboxylate monosuccinate, solifenacin;
quinupristin-dalfopristin, quinupristin-dalfopristin, RP 59500, RP-59500;
R-138727, R-138727;
R-99224, (2Z)-(1-(2-cyclopropyl-1-(2-fluorophenyl)-2-oxoethyl)-4-mercapto-3-piperidinylidene), R-99224;
Raloxifene, ELi Lilly Brand of Raloxifene, Evista, Keoxifene;
raltitrexed, Arkomédika brand of raltitrexed, AstraZeneca brand of raltitrexed, D 1694;
Ramipril, Acovil, Almirall Brand of Ramipril, Altace;
ramiprilat, ramiprilat;
RAMP, RAMP;
Ranitidine, AH 19065, AH-19065, AH19065;
RAPA, (-)-Rapamycin, (3-(4-hydroxy-3-methoxycyclohexyl)-1-methylethyl)-10,21-dimethoxy-,
(3S,6R,7E,9R,10R,12R,14S,15E,17E,19E,21S,23S,26R,27R,34aS)-;
rasagiline, 2,3-dihydro-N-2-propynyl-1H-inden-1-amine-(1R)-hydrochloride, AGN 1135, AGN-1135;
rebamipide, 2-(4-chlorobenzoylamino)-3-(2(1H)-quinolinon-4-yl)propionic acid, OPC 12759, OPC-12759;
reboxetine, 2-((2-ethoxyphenoxy)benzyl)morpholine methanesulfonate, reboxetine, reboxetine mesylate;
remifentanil, 3-(4-methoxycarbonyl-4-((1-oxopropyl)phenylamino)-1-piperidine)propanoic acid methyl ester, Abbott brand of remifentanil, GI 87084B;
renzapride, 4-amino-5-chloro-2-methoxy-N-(1-azabicyclo-(3.3.1)-non-4-yl)benzamide, BRL 24924, BRL-24924;
repaglinide, 2-ethoxy-4-(2-((3-methyl-1-(2-(1-piperidinyl)phenyl)butyl)amino)-2-oxoethyl)benzoic acid, 2-ethoxy-N-(alpha-(2-methyl-1-propyl)-2-piperidinobenzyl)-4-carbamoylmethylbenzoic acid, AG-EE 388;

Resiniferotoxin, Resiniferotoxin;
resiquimod, 1-[4-amino-2-(ethoxymethyl)-1H-imidazo[4,5-c]quinolin-1-yl]-2-methylpropan-2-ol,
CCOCc1nc2c(N)nc3cccc3c2n1CC(C)(C)O, R 848;
Retardex, acide benzoïque, Ammonium benzoate, Aromatic hydroxy acid;
Riacon, (2-Mercaptoethyl)amine, .beta.-Mercaptoethylamine, 1-Amino-2-mercaptoethylamine;
Ribavirin, Dermatech Brand of Ribavirin, Essex Brand of Ribavirin, Grossman Brand of Ribavirin;
Riboflavin, Flavin mononucleotide, Pentitol, 1-deoxy-1-(3,4-dihydro-7,8-dimethyl-2,4-dioxobenzo[g]pteridin-10(2H)-yl)-, 5-(dihydrogen phosphate), Riboflavin;
Rifabutin, Alfacid, Ansamycin, Ansatipin;
rifamycins, rifamycins;
Rifocin, Rifamycin, Rifamycin SV, Rifocin;
rimonabant, Acomplia, N-(piperidin-1-yl)-5-(4-chlorophenyl)-1-(2,4-dichlorophenyl)-4-methyl-1H-pyrazole-3-carboxamide hydrochloride, rimonabant;
risedronic acid, 2-(3-pyridinyl)-1-hydroxyethylidenebisphosphonate, 2-(3-pyridinyl)-1-hydroxyethylidenebisphosphonate, Actonel;
risperidone, 3-{2-[4-(6-fluoro-1,2-benzisoxazol-3-yl)piperidin-1-yl]ethyl}-2-methyl-6,7,8,9-tetrahydro-4H-pyrido[1,2-a]pyrimidin-4-one, Risperdal, risperidona;
Ristocetin, Ristocetin, Ristomycin;
Ritonavir, ABT 538, ABT-538, ABT538;
rituximab, CD20 antibody, rituximab, Genentech brand of rituximab, Hoffmann-La Roche brand of rituximab;
Ro 13-8996, (Z)-(2,4-dichlorobenzyl)oxy-[1-(2,4-dichlorophenyl)-2-imidazol-1-yl-ethylidene]amine, 1-(2,4-dichlorophenyl)-N-[(2,4-dichlorophenyl)methoxy]-2-(1-imidazolyl)ethanimine, 1-(2,4-dichlorophenyl)-N-[(2,4-dichlorophenyl)methoxy]-2-imidazol-1-yl-ethanimine;
Ro 23-7553, (1R,3S,5Z)-5-[(2E)-2-[(3aS,7aS)-1-[(1R)-5-hydroxy-1,5-dimethyl-hex-3-ynyl]-7a-methyl-3a,5,6,7-tetrahydro-3H-inden-4-ylidene]ethylidene]-4-methylene-cyclohexane-1,3-diol, (1R,3S,5Z)-5-[(2E)-2-[(3aS,7aS)-1-[(1R)-5-hydroxy-1,5-dimethylhex-3-ynyl]-7a-methyl-3a,5,6,7-tetrahydro-3H-inden-4-ylidene]ethylidene]-4-methylenecyclohexane-1,3-diol, (1R,3S,5Z)-

5-[(2E)-2-[(3aS,7aS)-1-[(2R)-6-hydroxy-6-methyl-hept-4-yn-2-yl]-7a-methyl-3a,5,6,7-tetrahydro-3H-inden-4-ylidene]ethylidene]-4-methylidene-cyclohexane-1,3-diol;

Ro 23-7637, Ro 23-7637;

Ro 24-7429, 7-chloro-N-methyl-5-(1H-pyrrol-2-yl)-3H-1,4-benzodiazepin-2-amine, Ro 24-7429, Ro-24-7429;

Ro 31-6233, 1H-Pyrrole-2,5-dione, 3,4-di-1H-indol-3-yl-, 2,3-bis(1H-Indol-3-yl)maleimide, 3,4-bis(1H-indol-3-yl)-3-pyrroline-2,5-quinone;

Ro 31-7549, Ro 31-7549;

Ro 31-8220, Ro 31-8220;

RO4383596, (+/-)-1-(anti-3-hydroxy-cyclopentyl)-3-(4-methoxy-phenyl)-7-phenylamino-3,4-dihydro-1H-pyrimido(4,5-d)pyrimidin-2-one, RO4383596;

Robitet, (2Z)-2-(amino-hydroxy-methylene)-4-dimethylamino-6,10,11,12a-tetrahydroxy-6-methyl-4,4a,5,5a-tetrahydrotetracene-1,3,12-trione, (2Z)-2-(amino-hydroxy-methylidene)-4-dimethylamino-6,10,11,12a-tetrahydroxy-6-methyl-4,4a,5,5a-tetrahydrotetracene-1,3,12-trione, (2Z)-2-(amino-hydroxymethylene)-4-dimethylamino-6,10,11,12a-tetrahydroxy-6-methyl-4,4a,5,5a-tetrahydrotetracene-1,3,12-trione;

rofecoxib, Cahill May Roberts brand of rofecoxib, Merck brand of rofecoxib, Merck Frosst brand of rofecoxib;

roflumilast, 3-cyclopropylmethoxy-4-difluoromethoxy-N-(3,5-dichloropyrid-4-yl)benzamide, roflumilast;

rokitamycin, 3'''-O-propionylleucomycin A5, pro-leucomycin A5, rokitamycin;

Rolipram, Rolipram, ZK 62711, ZK-62711;

romidepsin, FK228, FR 901228, FR-901228;

rooperol, rooperol;

ropivacaine, 1-propyl-2',6'-pipecoloxylidide, AL 381, AL-381;

roscovitine, 2-(1-ethyl-2-hydroxyethylamino)-6-benzylamino-9-isopropylpurine, CYC 202, CYC-202;

rosiglitazone, 5-((4-(2-methyl-2-(pyridinylamino)ethoxy)phenyl)methyl)-2,4-thiazolidinedione-2-butenedioate, Avandia, BRL 49653;

rosmarinic acid, (2S)-3-(3,4-dihydroxyphenyl)-2-[(2E)-3-(3,4-dihydroxyphenyl)prop-2-enoyloxy]propanoic acid, Rosmarinate, rosmarinic acid;

rosuvastatin, (3R,5S,6E)-7-(4-(4-fluorophenyl)-6-(1-

methylethyl)-2-(ethyl(methylsulfonyl)amino)-5-pyrimidinyl)-3,5-dihydroxy-6-heptenoic acid, (3R,5S,6E)-7-{4-(4-fluorophenyl)-2-[methyl(methylsulfonyl)amino]-6-(propan-2-yl)pyrimidin-5-yl}-3,5-dihydroxyhept-6-enoic acid, (3R,5S,6E)-7-{4-(4-fluorophenyl)-6-isopropyl-2-[methyl(methylsulfonyl)amino]pyrimidin-5-yl}-3,5-dihydroxyhept-6-enoic acid;

Roxithromycin, 1A Brand of Roxithromycin, Alpharma Brand of Roxithromycin, Aventis Brand of Roxithromycin;

Rozevin, (2ALPHA,2'BETA,3BETA,4ALPHA,5BETA)-VINCALEUKOBLASTINE, (3aR-

(3aalpha,4beta,5beta,5abeta,9(3R*,5S*,7R*,9S*),10bR*,13aalpha))-methyl 4-(acetyloxy)-3a-ethyl-9-(5-ethyl-1,4,5,6,7,8,9,10-octahydro-5-hydroxy-9-(methoxycarbonyl)-2H-3,7-methanoazacycloundecino(5,4-b)indol-9-yl)-3a,4,5,5a,6,11,12,13a-octahydro-5-hydro, 1H-Indolizino(8,1-cd)carbazole-5-carboxylic acid, 4-(acetyloxy)-3a-ethyl-9-(5-ethyl-1,4,5,6,7,8,9,10-octahydro-5-hydroxy-9-(methoxycarbonyl)-2H-3,7-methanoazacycloundecino(5,4-b)indol-9-yl)-3a,4,5,5a,6,11,12,13a-octahydro-5-hydroxy-8-methoxy-6-methyl-, me;

RPR 121056, 7-ethyl-10-(4-N-(5-aminopentanoic acid)-1-piperidino)carbonyloxycamptothecin, APC cpd, RPR 121056;

RU 58668, 11beta-(4-(5-((4,4,5,5,5-pentafluoropentyl)sulfonyl)pentyl)oxy)phenyl)-estra-1,3,5(10)-triene,3,17beta-diol, Estra-1,3,5(10)-triene-3,17-diol, 11-(4-((5-((4,4,5,5,5-pentafluoropentyl)sulfonyl)pentyl)oxy)phenyl)-, (11beta,17beta)-, RU 58 668;

ruboxistaurin, 13-((dimethylamino)methyl)-10,11,14,15-tetrahydro-4,9:16,21-dimetheno-1H,13H-dibenzo(e,k)pyrrolo(3,4-h)(1,4,13)oxadiazacyclohexadecene-1,3(2H)-dione, Arxxant, Lilly brand of ruboxistaurin mesilate hydrate;

rugosin E, rugosin E;

rutecarpine, rutaecarpine, rutecarpine;

Rutin, 2-(3,4-dihydroxyphenyl)-5,7-dihydroxy-3-[(2S,3R,4S,5S,6R)-3,4,5-trihydroxy-6-[[(2R,3R,4R,5R,6S)-3,4,5-trihydroxy-6-methyl-oxan-2-yl]oxymethyl]oxan-2-yl]oxy-chromen-4-one,

2-(3,4-dihydroxyphenyl)-5,7-dihydroxy-3-[(2S,3R,4S,5S,6R)-3,4,5-trihydroxy-6-[[(2R,3R,4R,5R,6S)-3,4,5-trihydroxy-6-methyl-tetrahydropyran-2-yl]oxymethyl]tetrahydropyran-2-yl]oxy-chromen-

4-one, 2-(3,4-dihydroxyphenyl)-5,7-dihydroxy-3-
[(2S,3R,4S,5S,6R)-3,4,5-trihydroxy-6-[(2R,3R,4R,5R,6S)-3,4,5-
trihydroxy-6-methyl-tetrahydropyran-2-
yl]oxymethyl]tetrahydropyran-2-yl]oxy-chromone;
S-(beta-p-methoxypropiophenone)thiamine, MB 2, MB-2, S-(beta-p-
methoxypropiophenone)thiamine;
S-Nitroso-N-Acetylpenicillamine, N-Acetyl-S-
Nitrosopenicillamine, N2-Acetyl-S-Nitroso-D,L-
Penicillinaminamide, S-Nitroso-N-Acetylpenicillamine;
S-Nitrosothiols, S-Nitrosothiol, S-Nitrosothiols;
S-phenyl-N-acetylcysteine, 2-acetamido-3-phenylthiopropionic ac-
id, phenylmercapturic acid, S-phenyl-N-acetylcysteine;
sabarubicin, 4-demethoxy-7-O-(2,6-dideoxy-4-O-(2,3,6-trideoxy-3-
amino-alpha-L-lyxo-hexopyranosyl)-alpha-L-lyxo-hexopyranosyl)-
adriamycinone, MEN 10755, MEN-10755;
sabcomeline, (R)-3-quinuclidineglyoxylonitrile-(Z)-(O)-
methyloxime, alpha-(methyylimino)-1-azabicyclo(2.2.2)octane-3-
acetonitrile, sabcomeline;
Safingol, (2S,3R)-2-amino-1,3-octadecanediol, (2S,3R)-2-
aminooctadecane-1,3-diol, (R-(R*,S*)))-2-aminooctadecane-1,3-
diol;
Safrole, 4-Allyl-1,2-methylenedioxybenzene, Safrol, Safrole;
SAGA, (1R,3S)-2,2-dimethyl-3-(1,2,2,2-tetrabromoethyl)-1-
cyclopropanecarboxylic acid [(S)-cyano-[3-
(phenoxy)phenyl]methyl] ester, (1R,3S)-2,2-dimethyl-3-(1,2,2,2-
tetrabromoethyl)cyclopropane-1-carboxylic acid [(S)-cyano-[3-
(phenoxy)phenyl]methyl] ester, (S)-alpha-Cyano-3-phenoxybenzyl
(1R)-cis-2,2-dimethyl-3-((RS)-1,2,2,2-tetrabromoethyl)-
cyclopropanecarboxylate;
SAHA, 8-(hydroxyamino)-8-keto-N-phenyl-caprylamide, 8-
(hydroxyamino)-8-oxo-N-phenyl-octanamide, 8-(hydroxyamino)-8-
oxo-N-phenyloctanamide;
saikosaponin, saikosaponin, saikosaponin B, saikosaponin B1;
Salicin, .beta.-D-Glucopyranoside, 2-(hydroxymethyl)phenyl, 2-
(hydroxymethyl)-6-[2-(hydroxymethyl)phenoxy]oxane-3,4,5-triol,
2-(hydroxymethyl)-6-[2-(hydroxymethyl)phenoxy]tetrahydropyran-
3,4,5-triol;
salvin, carnosic acid, salvin;
samarium, 62Sm, samario, samarium;
SAME, (2S)-2-amino-4-[(2S,3S,4R,5R)-5-(6-amino-9-purinyl)-3,4-

dihydroxy-2-tetrahydrofuranyl]methyl-methylsulfonio]butanoate, (2S)-2-amino-4-[[(2S,3S,4R,5R)-5-(6-aminopurin-9-yl)-3,4-dihydroxy-oxolan-2-yl]methyl-methyl-sulfonio]butanoate, (2S)-2-amino-4-[[(2S,3S,4R,5R)-5-(6-aminopurin-9-yl)-3,4-dihydroxy-tetrahydrofuran-2-yl]methyl-methyl-sulfonio]butanoate; sanguinarine, 13-methyl-2H,10H-[1,3]dioxolo[4,5-i][1,3]dioxolo[4',5':4,5]benzo[1,2-c]phenanthridinium, 13-methyl[1,3]benzodioxolo[5,6-c]-1,3-dioxolo[4,5-i]phenanthridinium, sanguinarine; sapogenins, sapogenin, sapogenins; Saquinavir, Invirase, Ro 31 8959, Ro 31-8959; Sarasar, () 4-(2-(4-(8-Chloro-3,10-dibromo-6,11-dihydro-5H-benzo(5,6)cyclohepta(1,2-b)pyridin-11-yl)-1-piperidinyl)-2-oxoethyl)-1-piperidinecarboxamide, (+)-4[2-[4-(8-Chloro-3,10-dibromo-6,11-dihydro-5H-benzo[5,6] cyclohepta[1,2-b]-pyridin-11(R)-yl)-1-piperidinyl]-2-oxo-ethyl]-1-piperidinecarboxamide, 1-Piperidinecarboxamide, 4-(2-(4-((11R)-3,10-dibromo-8-chloro-6,11-dihydro-5H-benzo(5,6)cyclohepta(1,2-b)pyridin-11-yl)-1-piperidinyl)-2-oxoethyl)-; Sarna, (-)-Menthol, (+)-Isomenthol, (+)-Menthol; sauchinone, sauchinone; saxatilin, saxatilin; SB 218078, SB 218078, SB-218078; SB 225002, N-(2-hydroxy-4-nitrophenyl)-N'-(2-bromophenyl)urea, SB 225002, SB-225002; SB 415286, 3-(3-chloro-4-hydroxyphenylamino)-4-(4-nitrophenyl)-1H-pyrrole-2,5-dione, SB 415286, SB-415286; SB-705498, SB-705498; scandium, 21Sc, escandio, scandium; SCH 66712, SCH 66712, SCH66712; schizandrer A, gomisin C, gomisin-G, PC 315; scoparone, 6,7-dimethoxycoumarin, 6,7-dimethylesculetin, scoparone; Scopoletin, .beta.-Methylesculetin, 2H-1-Benzopyran-2-one, 7-hydroxy-6-methoxy-, 2H-1-Benzopyran-2-one, 7-hydroxy-6-methoxy-(9CI); Score, 1-((2-(2-Chloro-4-(4-chlorophenoxy)phenyl)-4-methyl-1,3-dioxolan-2-yl)methyl)-1H-1,2,4-triazole, 1-((2-[2-Chloro-4-(4-chlorophenoxy)phenyl]-4-methyl-1,3-dioxolan-2-yl)methyl)-1H-1,2,4-triazole, 1-({2-[2-chloro-4-(4-chlorophenoxy)phenyl]-4-

methyl-1,3-dioxolan-2-yl)methyl)-1H-1,2,4-triazole;
SDX 308, CEP 18082, CEP-18082, CEP18082;
Selegiline, Bristol Myers Squibb Brand of Selegiline, Bristol-Myers Squibb Brand of Selegiline, Deprenalin;
seocalcitol, 1(S),3(R)-dihydroxy-20(R)-(5'-ethyl-5'-hydroxyhepta-1'(E),3'(E)-dien-1'-yl)-9,10-secopregna-5(Z),7(E),10(19)-triene, EB 1089, EB-1089;
Sep-Pak, Sep-Pak;
Serad, (1S,4S)-4-(3,4-Dichlorophenyl)-1,2,3,4-tetrahydro-N-methyl-1-naphthylamine hydrochloride, (1S,4S)-4-(3,4-Dichlorophenyl)-1,2,3,4-tetrahydro-N-methyl-1-naphthalenamine hydrochloride, (1S,4S)-4-(3,4-dichlorophenyl)-N-methyl-1,2,3,4-tetrahydronaphthalen-1-amine hydrochloride;
sertindole, 1-(2-{4-[5-chloro-1-(4-fluorophenyl)-1H-indol-3-yl]piperidin-1-yl}ethyl)imidazolidin-2-one, 1-[2-[4-[5-chloro-1-(4-fluorophenyl)-indol-3-yl]-1-piperidyl]ethyl]imidazolidin-2-one, Serdolect;
sevoflurane, BAX 3084, fluoromethyl hexafluoroisopropyl ether, fluoromethyl-2,2,2-trifluoro-1-(trifluoromethyl)ethyl ether;
SEW2871, SEW-2871, SEW2871;
shikonin, shikonin, shikonin, (+)-isomer;
siderophore, ironophore, siderochrome, siderochromes;
Sildenafil, 1-((3-(4,7-Dihydro-1-methyl-7-oxo-3-propyl-1H-pyrazolo(4,3-d)pyrimidin-5-yl)-4-ethoxyphenyl)sulfonyl)-4-methylpiperazine, 5-[2-ethoxy-5-(4-methylpiperazin-1-yl)sulfonyl-phenyl]-1-methyl-3-propyl-4H-pyrazolo[5,4-e]pyrimidin-7-one, 5-[2-ethoxy-5-(4-methylpiperazin-1-yl)sulfonylphenyl]-1-methyl-3-propyl-4H-pyrazolo[5,4-e]pyrimidin-7-one;
silvestrol, silvestrol;
silybin, 2,3-dehydrosilybin, Alepa-forte, Ardeyhepan;
Sincalide, Bracco Brand of Sincalide, CCK-8, CCK-OP;
Sizofiran, Schizophyllan, Sizofilan, Sizofiran;
SK-7041, SK-7041;
SK&F 106528, recombinant soluble CD4, SK&F 106528, SK&F-106528;
SM 7368, SM 7368, SM-7368, SM7368;
Sodium pentosan poly sulfate, Sodium pentosan poly sulfate;
Sodium Salicylate, Sodium Salicylate;
sorafenib, 4-(4-(3-(4-chloro-3-trifluoromethylphenyl)ureido)phenoxy)pyridine-2-carboxylic acid

methyamide-4-methylbenzenesulfonate, BAY 43-9006, Nexavar;
sorbiniol, CP 45634, CP-45634, D-6-fluoro-spiro(chroman-4,4'-imidazolidine)-2',5'-dione;
Sorbo, 1,2,3,4,5,6-Hexanehexol, 3,3'-Oxydi(1,2-propanediol), alpha,alpha'-Diglycerol;
Sorbose, (2R,3S,4R,5R)-2-(hydroxymethyl)oxane-2,3,4,5-tetrol, (2R,3S,4R,5R)-2-(hydroxymethyl)tetrahydropyran-2,3,4,5-tetrol, (2R,3S,4R,5R)-2-methylol tetrahydropyran-2,3,4,5-tetrol;
spiroglumide, 4-(3-chlorobenzamido)-5-(8-azaspiro(4.5)decan-8-yl)-5-oxopentanoic acid, CR 2194, CR-2194;
Spironolactone, Aldactone, Aldactone A, Alphapharm Brand of Spironolactone;
squamocin, squamocin;
SR 144528, N-(1,3,3-trimethylbicyclo(2.2.1)heptan-2-yl)-5-(4-chloro-3-methylphenyl)-1-(4-methylbenzyl)pyrazole-3-carboxamide, SR 144528, SR-144528;
SR 27897, SR 27897;
SR 48692, 2-((1-(7-chloro-4-quinolinyl)-5-(2,6-dimethoxyphenyl)pyrazol-3-yl)carbonylamino)tricyclo(3.3.1.1.(3.7))decan-2-carboxylic acid, SR 48692, SR-48692;
SR 80327A, SR 80327A, SR-80327A;
SR 90107A-ORG 31540, SR 90107A-ORG 31540, SR90107A-ORG31540;
ST 638, alpha-cyano-3-ethoxy-4-hydroxy-5-phenylmethylcinnamamide, ST 638, ST-638;
stallimycin, stallimycin;
Stanozolol, Androstanazol, Methylstanazol, Sanofi Winthrop Brand of Stanozolol;
staurosporine, (5S,6R,7R,9R)-6-methoxy-5-methyl-7-methylamino-6,7,8,9,15,16-hexahydro-5H,14H-5,9-epoxy-4b,9a,15-triazadibenzo[b,h]cyclonona[1,2,3,4-jkl]cyclopenta[e]-as-indacen-14-one, Staurosporin, staurosporine;
Stearin, 1,2,3-Propanetriol trioctadecanoate, 1,2,3-trioctadecanoyl-sn-glycerol, 1,2,3-Trioctadecanoylglycerol;
Stereoisomerism, Stereoisomer, Stereoisomerism, Stereoisomers;
Steviol, Kaur-16-en-18-oic acid, 13-hydroxy-, (4.alpha.)-, Steviol;
Stevioside, 1-O-[(5beta,8alpha,9beta,10alpha,13alpha)-13-[(2-O-beta-D-glucopyranosyl-beta-D-glucopyranosyl)oxy]-18-oxokaur-16-en-18-yl]-beta-D-glucopyranose, 13-[(2-O-.beta.-D-

Glucopyranosyl-.alpha.-D-glucopyranosyl)oxy]kaur-16-en-18-oic acid .beta.-D-glucopyranosyl ester, Diterpene glycoside;
STIL, (E)-3,4-Bis(4-hydroxyphenyl)-3-hexene, (E)-4,4'-(1,2-Diethyl-1,2-ethenediyl)bisphenol, (E)-4,4'-(hex-3-ene-3,4-diyl)diphenol;
stilbene-disulphonate, stilbene-disulphonate;
Stilbenes, Stilbenes;
Stim, 1,3,7-trimethyl-2,6-dioxo-1,2,3,6-tetrahydropurine, 1,3,7-Trimethyl-2,6-dioxopurine, 1,3,7-trimethyl-3,7-dihydro-1H-purine-2,6-dione;
Streptomycin, CEPA Brand of Streptomycin Sulfate, Clariana Brand of Streptomycin Sulfate, Estreptomicina CEPA;
Styrene, Styrene, Styrene Monomer, Styrol;
styrene-methylmethacrylate copolymer, styrene-methylmethacrylate copolymer;
SU 5416, 3-(2,4-dimethylpyrrol-5-yl)methylidene-indolin-2-one, Semaxinib, SU 5416;
SU 6668, (Z)-3-(2,4-dimethyl-5-(2-oxo-1,2-dihydro-indol-3-ylidenemethyl)-1H-pyrrol-3-yl)-propionic acid, (Z)-3-(2,4-dimethyl-5-(2-oxo-1,2-dihydro-indol-3-ylidenemethyl)-1H-pyrrol-3-yl)propionic acid, SU 6668;
SU 9516, 3-(1-(3H-Imidazol-4-yl)-meth-(Z)-ylidene)-5-methoxy-1,3-dihydro-indol-2-one, SU 9516, SU9516;
suberate, octanedioate, suberate;
suberosin, suberosin;
succinic semialdehyde, 3-formylpropanoic acid, 3-formylpropionic acid, 4-oxobutanoic acid;
Sufentanil, Abbot Brand of Sufentanil Citrate, Baxter Brand of Sufentanil Citrate, curasan Brand of Sufentanil Citrate;
Suldox, 4-amino-N-(5,6-dimethoxy-4-pyrimidinyl)benzenesulfonamide; 5-(4-chlorophenyl)-6-ethylpyrimidine-2,4-diamine, 4-amino-N-(5,6-dimethoxypyrimidin-4-yl)benzenesulfonamide; 5-(4-chlorophenyl)-6-ethyl-pyrimidine-2,4-diamine,
4-amino-N-(5,6-dimethoxypyrimidin-4-yl)benzenesulfonamide; 5-(4-chlorophenyl)-6-ethylpyrimidine-2,4-diamine;
sulfadoxine-pyrimethamine, Fansidar, Suldox, sulfadoxine-pyrimethamine;
Sulfamethazine, Sulfadimezine, Sulfadimidine, Sulfamethazine;
sulfamethoxazole hydroxylamine, sulfamethoxazole hydroxylamine;

Sulfaphenazole, Phenylsulfapyrazole, Sulfaphenazole, Sulfaphenylpyrazol;
Sulfasalazine, Alphapharm Brand of Sulfasalazine, Ashbourne Brand of Sulfasalazine, Asulfidine;
sulfate cellufine, sulfate cellufine;
sulfate-sulfate, sulfate-sulfate;
sulfidonitrogen(.), (NS)(.), mononitrogen monosulfide, nitrogen monosulfide;
Sulfinpyrazone, Anturan, Anturane, Apo Sulfinpyrazone;
sulfo-N-succinimidyl oleate, SSO cpd, sulfo-N-succinimidyl oleate, sulfo-N-succinimidyl oleate;
sulfo-succinimidyl-oleate, sulfo-succinimidyl-oleate;
sulfogalactosylglycerolipid, sgg lipid, sulfogalactosylglycerolipid;
sulfones, sulfone, sulfones;
sulfonic acid, acide sulfonique, HSHO₃, hydridohydroxidodioxidosulfur;
sulfonyl-phenyl-ethyl, sulfonyl-phenyl-ethyl;
Sulforafan, 1-Isothiocyanato-4-(methylsulfinyl)-butane, 1-isothiocyanato-4-(methylsulfinyl)butane, 1-isothiocyanato-4-methylsulfinyl-butane;
Sulindac, Aclin, Alphapharm Brand of Sulindac, Apo Sulin;
sulindac sulfone, (5-fluoro-2-methyl-1-(3,4,5-trimethoxybenzylidene)-3-(N-benzyl)-indene)-acetamide, 1H-Indene-3-acetic acid, 5-fluoro-2-methyl-1-((4-(methylsulfonyl)phenyl)methylene)-, (Z)-, Aptosyn;
sultopride, amisulpride, Barnetil, DAN 2163;
sunitinib, 5-(5-fluoro-2-oxo-1,2-dihydroindolylidenemethyl)-2,4-dimethyl-1H-pyrrole-3-carboxylic acid (2-diethylaminoethyl)amide, SU 011248, SU 11248;
Synthos, alpha-TCP, alpha-tri-Calcium phosphate, alpha-Tricalcium phosphate;
T 0070907, T 0070907, T-0070907, T0070907;
T 0901317, N-(4-(1,1,1,3,3,3-hexafluoro-2-hydroxy-propan-2-yl)phenyl)-N-(2,2,2-trifluoroethyl)benzenesulfonamide, T 0901317, T-0901317;
Tacrine, 1,2,3,4-Tetrahydro-9-acridinamine, 1,2,3,4-Tetrahydroaminoacridine, 9-Amino-1,2,3,4-Tetrahydroacridine;
Tacrolimus, Anhydrous Tacrolimus, Cilag Brand of Tacrolimus, FK 506;

tadalafil, Cialis, IC 351, IC-351;
Tamogel, (Z)-4-(1-[4-(Dimethylaminoethoxy)phenyl]-2-phenyl-1-butenyl)phenol, (Z)-4-Hydroxytamoxifen, 4-((1Z)-1-(4-(2-(dimethylamino)ethoxy)phenyl)-2-phenyl-1-butenyl)phenol;
Tamoxifen, ICI 46474, ICI 47699, ICI-46,474;
tandospirone, 3a,4,7,7a-hexahydro-2-(4-(4-(2-pyrimidinyl)-1-piperazinyl)butyl)-4,7-methano-1H-isoindole-1,3(2H)-dione, SM 3997, SM-3997;
Tangeretin, 2-(4-Methoxyphenyl)-5,6,7,8-tetramethoxy-4H-1-benzopyran-4-one, 4',5,6,7,8-Pentamethoxyflavone, 4H-1-Benzopyran-4-one, 2-(4-methoxyphenyl)-5,6,7,8-tetramethoxy-;
tanshinone, tanshinone, tanshinone II A, tanshinone II B;
taurocholic acid, 2-[(3alpha,7alpha,12alpha-trihydroxy-24-oxo-5beta-cholan-24-yl)amino]ethanesulfonic acid,
3alpha,7alpha,12alpha-trihydroxy-5beta-cholanic acid 24-taurine, cholic acid taurine conjugate;
Taurodeoxycholic Acid, Deoxycholytaurine, Sodium Taurodeoxycholate, Taurine Deoxycholate;
tauroursodeoxycholic acid, tauroursodeoxycholic acid, tauroursodeoxycholic acid, (3alpha,5alpha,7alpha)-isomer, tauroursodeoxycholic acid, monosodium salt, (3alpha,5beta,7alpha)-isomer;
tautomycetin, tautomycetin;
TAXOTERE, (2aR,4S,4aS,6R,9S,11S,12S,12aR,12bS)-12b-(acetyloxy)-12-(benzoyloxy)-2a,3,4,4a,5,6,9,10,11,12,12a,12b-dodecahydro-4,6,11-trihydroxy-4a,8,13,13-tetramethyl-5-oxo-7,11-methano-1H-cyclodeca[3,4]benz[1,2-b]oxet-9-yl (aR,bS)-b-[[(1,1-dimethylethoxy)carbonyl]am, Docetaxel, Docetaxel anhydrous;
TBDZ, 1H-Benzimidazole, 2-(4-thiazolyl)-, 2-(1,3-thiazol-4-yl)-1H-benzimidazole, 2-(1,3-Thiazol-4-yl)benzimidazole;
TBHQ, 1,4-Benzenediol (1,1-dimethylethyl)-, 1,4-Benzenediol, 2-(1,1-dimethylethyl)-, 2-(1,1-Dimethylethyl)-1,4-benzenediol;
TCAT, 2,3,3-trichloroacryloyl chloride, 2,3,3-trichloroprop-2-enoyl chloride, 2,3,4-Trichloro-2-propenoyl chloride;
technetium, ⁴³Tc, technetium, tecnecio;
Tegafur, 1-(2-Tetrahydrofuryl)-5-fluorouracil, 1-(Tetrahydro-2-furanyl)-5-fluorouracil, 5-Fluoro-1-(tetrahydro-2-furanyl)-2,4-pyrimidinedione;
Teleocidin, 13-Ethenyl-1,3,4,5,7,8,10,11,12,13-decahydro-4-(hydroxymethyl)-8,10,13-trimethyl-7,10-bis(1-methylethyl)-6H-benzo[g]diazonino[7,6,5-cd]indol-6-one, 6H-

Benzo(g)(1,4)diazonino(7,6,5-cd)indol-6-one, 13-ethenyl-1,3,4,5,7,8,10,11,12,13-decahydro-4-(hydroxymethyl)-8,10,13-trimethyl-7,10-bis(1-methylethyl)-, (4S-(4R*,7R*,10S*,13S*))-, Teleocidin;

telithromycin, Aventis brand of telithromycin, HMR 3647, HMR-3647;

Temazepam, 3 Hydroxydiazepam, 3-Hydroxydiazepam, AHP Brand of Temazepam;

temozolomide, 8-carbamoyl-3-methylimidazo(5,1-d)-1,2,3,5-tetrazin-4(3H)-one, CCRG 81045, CCRG-81045;

temsirolimus, CCI 779, CCI-779, temsirolimus;

terbinafine, (E)-N-(6,6-dimethyl-2-heptenynyl)-N-methyl-1-naphthalenementhamin hydrochloride, Lamisil, SF 86-327;

terephthalic acid, 1,4-Benzenedicarboxylic acid, benzene-1,4-dicarboxylic acid, p-benzenedicarboxylic acid;

Terfenadine, Aliud Brand of Terfenadine, alpha-(4-(1,1-Dimethylethyl)phenyl)-4-(hydroxydiphenylmethyl)-1-piperidinebutanol, Balkis Saft Spezial;

teriflunomide, teriflunomide;

terrein, terrein;

territrem A, territrem A;

territrem B, territrem B;

territrem C, territrem C;

tertiapin, tertiapin;

tetra-mu3-sulfido-tetrairon, 4Fe-4S, IRON/SULFUR CLUSTER, tetra-mu3-sulfido-tetrairon;

tetrachloroethene, 1,1,2,2-tetrachloroethylene, ethylene tetrachloride, PCE;

tetradecanoyl-phorbol-acetate, tetradecanoyl-phorbol-acetate;

Tetrahydrocannabinol, 9 ene Tetrahydrocannabinol, 9-ene-Tetrahydrocannabinol, delta(1)-Tetrahydrocannabinol;

tetramethylrhodamine, tetramethylrhodamine;

tetramethylsilane, silane, tetramethyl-, tetramethylsilane, TMSCH₂Li;

tetraphene, 1,2-benzanthracene, 1,2-Benzanthrazen, benz[a]anthracene;

Tetraprenol, (2E,6E,10E)-3,7,11,15-tetramethylhexadeca-2,6,10,14-tetraen-1-ol, (E,E,E)-Geranylgeraniol, 2,6,10,14-hexadecatetraen-1-ol, 3,7,11,15-tetramethyl-;

tetrasulfanide, HSSSS(-), SSS[S-], tetrasulfanide;

Thalidomide, Celgene Brand of Thalidomide, Sedoval, Thalidomide;
Thapsigargin, Thapsigargin;
thiamine disulfide, thiamine disulfide;
thiazole, 1,3-thiazole, clcscn1, thiazole;
Thiazolidinediones, Glitazones, Thiazolidinediones;
thioacetamide, Acetothioamide, ethanethioamide, TAA;
Thioacetazone, Ambathizon, Amithiozone, Conteben;
thiobenzamide, thiobenzamide;
thiocoraline, thiocoraline;
Thiole, Divinylene sulfide, Furan, thio-, Huile H50;
Thiopental, Abbott Brand of Thiopental Sodium, Altana Pharma
Brand of Thiopental Sodium, Bomathal;
thioredoxin dithiol, Reduced thioredoxin, thioredoxin, thiore-
doxin dithiol;
thioridazine, 10-[2-(1-methyl-2-piperidyl)ethyl]-2-
methylsulfanyl-phenothiazine, 10-[2-(1-methylpiperidin-2-
yl)ethyl]-2-(methylsulfanyl)-10H-phenothiazine, 2-
Methylmercapto-10-(2-(N-methyl-2-piperidyl)ethyl)phenothiazine;
Thiostrepton, Bryamycin, Gargon, Thiactin;
thrombin receptor peptide SFLLRNP, thrombin receptor peptide
SFLLRNP;
thrombin Tokushima, thrombin Tokushima;
Thromboxane A2, Rabbit Aorta Contracting Substance, Thromboxane
A2;
thromboxane B2, (5Z,13E,15S)-9alpha,11,15-trihydroxythromboxa-
5,13-dien-1-oic acid, thromboxane B2, TXB2;
Thymine, 2-Deoxy-D-ribose, 2-Deoxy-erythro-pentose, 2-
Deoxyribose;
thymol, 1-hydroxy-5-methyl-2-isopropylbenzene, 2-isopropyl-5-
methylphenol, 3-p-cymenol;
thymoquinone, 2-isopropyl-5-methylbenzoquinone, 2-methyl-5-
isopropyl-p-benzoquinone, dihydrothymoquinone;
Thyrotropin, Thyreotropin, Thyroid Stimulating Hormone, Thyroid-
Stimulating Hormone;
Ticlopidine, 53 32C, 53-32C, 5332C;
Tilidine, Go 1261, Go-1261, Go1261;
tipranavir, Aptivus, PNU 140690, PNU-140690;
tirilazad, 21-(4-(2,6-di-1-pyrrolidinyl-4-pyrimidinyl)-1-
piperazinyl)-16-methylpregna-1,4,9(11)-triene-3,20-dione mono-
methane sulfonate, Freedox, Pharmacia brand of tirilazad mesyl-

ate hydrate;

titanium alloy (TiAl6V4), Ti-6Al-V4 alloy, Ti6Al4V, titanium 6-aluminum-4-vanadium;

TMC-95A, TMC 95A, TMC-95A;

Tmndga, 1,1'-(2,3-Dimethyl-1,4-butanediyl)bis(3,4-dimethoxybenzene), 1,4-Bis(3,4-dimethoxyphenyl)-2,3-dimethylbutane, 4,4'-(2,3-Dimethyl-1,4-butanediyl)bis-1,2-dimethoxybenzene;

TMSI, (Trimethylsilyl)imidazole, 1-(Trimethylsilyl)-1H-imidazole, 1-(Trimethylsilyl)imidazole;

Tobrex, (1S,2S,3R,4S,6R)-4,6-diamino-3-(2,6-diamino-2,3,6-trideoxy-alpha-D-ribo-hexopyranosyloxy)-2-hydroxycyclohexyl 3-amino-3-deoxy-alpha-D-glucopyranoside, (1S,2S,3R,4S,6R)-4,6-diamino-3-[(2,6-diamino-2,3,6-trideoxy-alpha-D-ribo-hexopyranosyl)oxy]-2-hydroxycyclohexyl 3-amino-3-deoxy-alpha-D-glucopyranoside, (2S,3R,4S,5S,6R)-4-amino-2-[(1S,2S,3R,4S,6R)-4,6-diamino-3-[(2R,3R,5S,6R)-3-amino-6-(aminomethyl)-5-hydroxy-oxan-2-yl]oxy-2-hydroxy-cyclohexyl]oxy-6-(hydroxymethyl)oxane-3,5-diol;

tocotrienols, tocotrienol, tocotrienols;

tofisopam, 1-(3,4-dimethoxyphenyl)-5-ethyl-7,8-dimethoxy-4-methyl-5H-2,3-benzodiazepine, dextofisopam, EGYT-341;

tolrestat, tolrestat;

Tolterodine, 2-[(1R)-3-(di(propan-2-yl)amino)-1-phenyl-propyl]-4-methyl-phenol, 2-[(1R)-3-(di(propan-2-yl)amino)-1-phenylpropyl]-4-methylphenol, 2-[(1R)-3-(diisopropylamino)-1-phenyl-propyl]-4-methyl-phenol;

toluene, Cc1ccccc1, methylbenzene, phenylmethane;

TOLUENE-DITHIOL, TOLUENE-DITHIOL;

topiramate, 2,3-4,5-bis-O-(1-methylethylidene)-beta-D-fructopyranose sulfamate, Cilag brand of topiramate, Epitomax; Topotecan, 9 Dimethylaminomethyl 10 hydroxycamptothecin, 9-Dimethylaminomethyl-10-hydroxycamptothecin, Hycamtamine;

Toremifene,

Fareston, FC 1157a, FC-1157a;

Tosylarginine Methyl Ester, Methyl N alpha Tosyl L Arginate, Methyl N-alpha-Tosyl-L-Arginate, TAME;

Tosyllysine Chloromethyl Ketone, Chlorotosylamidoaminoheptanone, TLCK, Tosyllysine Chloromethyl Ketone;

Tosylphenylalanyl Chloromethyl Ketone, Chlorophenyltosylamidobu-

tanone, Tosylphenylalanyl Chloromethane, Tosylphenylalanyl Chloromethyl Ketone;
TPN+, CODEHYDRASE II, coenzyme II, NADP(+);
Tracer, Conserve, Spinosad, Tracer;
Tramadol, 1A Brand of Tramadol Hydrochloride, Able Brand of Tramadol Hydrochloride, AbZ Brand of Tramadol Hydrochloride;
trans-resveratrol, (E)-5-(2-(4-hydroxyphenyl)ethenyl)-1,3-benzenediol, (E)-resveratrol, 3,4',5-stilbenetriol;
trastuzumab, Genentech brand of trastuzumab, Herceptin, Hoffman-La Roche brand of trastuzumab;
Trazodone, AF 1161, AF-1161, AF1161;
Tremode, 1,2-Benzisoxazole-3-methanesulfonamide, 1,2-benzoxazol-3-ylmethanesulfonamide, 3-(Sulfamoylmethyl)-1,2-benzisoxazole;
Tremorine, Tremorine;
Tretinoin, all trans Retinoic Acid, all-trans-Retinoic Acid, beta all trans Retinoic Acid;
Triad, Triad, Triad resin, Triad VLC;
Triamcinolone, Aristocort, Triamcinolone, Volon;
triazolam, 8-chloro-6-(2-chlorophenyl)-1-methyl-4H-[1,2,4]triazolo[4,3-a][1,4]benzodiazepine, Halcion, triazolam;
triazoles, triazole compounds, triazoles;
tributylstannane, SnBu₃H, TBT, Tri-n-butyltin;
trichostatins, trichostatin, trichostatins;
Triclosan, 2-Hydroxy-2',4,4'-trichlorodiphenyl Ether, Aquasept, Clearasil Daily Face Wash;
triethylamine, triethylamine, triethylamine acetate, triethylamine dinitrate;
Trifluoperazine, Allphar Brand of Trifluoperazine Hydrochloride, Apo Trifluoperazine, Apo-Trifluoperazine;
trimethylaminocarboxyldihydroboran, TCDB, trimethylaminocarboxyl-dihydro-boran, trimethylaminocarboxyldihydroboran;
trioctyl phosphine oxide, trioctyl phosphine oxide;
Triolein, Glycerol Trioleate, Trielaidin, Trioleate Glycerin;
tripterine, celastrol, tripterine;
triptolide, PG490, triptolide;
triterpenoids, Triterpenoid, triterpenoids;
troglitazone, 5-(4-((6-hydroxy-2,5,7,8-tetramethylchroman-2-ylmethoxy)benzyl)-2,4-thiazolidinedione), CS 045, CS-045;
Troleandomycin, Oleandocetin, Pfizer Brand of Troleandomycin, TAO;

TTNPB, (E)-4-(2-(5,6,7,8-Tetrahydro-5,5,8,8-tetramethyl-2-naphthalenyl)-1-propen-1-yl)benzoic acid, (e)-4-(2-(5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-2-naphthalenyl)-1-propenyl)benzoic acid, (e)-4-(2-(5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-2-naphthalenyl)-1-propenyl) benzoic acid; tubocapsanolide A, tubocapsanolide A; Tunicamycin, Tunicamycin; tyrphostin AG 1478, 4-(3-chloroanilino)-6,7-dimethoxyquinazoline, AG 1478, AG-1478; tyrphostin AG-490, AG 490, AG-490, AG490; tyrphostin AG17, tyrphostin AG17; U 0126, 1,4-diamino-2,3-dicyano-1,4-bis(2-aminophenylthio)butadiene, U 0126, U-0126; Ubizol, Androsta-1,4-diene-17-carbothioic acid, 6,9-difluoro-11-hydroxy-16-methyl-3-oxo-17-(1-oxopropoxy)-, (6alpha,11beta,16alpha,17alpha)-S-(fluoromethyl) ester, Asmatil, atemur; Ufur, 1-UFT protocol, 5-fluoro-1-(2-tetrahydrofuran-2-yl)pyrimidine-2,4-dione; 1H-pyrimidine-2,4-dione, 5-fluoro-1-(oxolan-2-yl)pyrimidine-2,4-dione; 1H-pyrimidine-2,4-dione; UK 157147, UK 157,147, UK 157147, UK-147,157; Uprima, (-)-10,11-dihydroxyaporphine, 6a-beta-Aporphine-10,11-diol, 6abeta-aporphine-10,11-diol; Uran, 238U, 238U Element, Uran; uranyl acetate, uranyl acetate; urethane, carbamic acid ethyl ester, ethyl carbamate, urethane; Urex, 2-Furfurylamino-4-chloro-5-sulfamoylbenzoic acid, 4-chloro-2-(2-furylmethylamino)-5-sulfamoyl-benzoic acid, 4-chloro-2-(2-furylmethylamino)-5-sulfamoylbenzoic acid; urinastatin, acid-stable protease inhibitor, Miraclid, MR 20; Urso, (3alpha,5beta,7beta)-3,7-dihydroxycholan-24-oic acid, (3alpha,5beta,7beta,8xi)-3,7-dihydroxycholan-24-oic acid, (4R)-4-[(3R,5S,7S,8R,9S,10S,13R,14S,17R)-3,7-dihydroxy-10,13-dimethyl-2,3,4,5,6,7,8,9,11,12,14,15,16,17-tetradecahydro-1H-cyclopenta[a]phenanthren-17-yl]pentanoic acid; USAN, (1-p-Chlorobenzoyl-5-methoxy-2-methylindol-3-yl)acetic acid, 1-(4-Chlorobenzoyl)-5-methoxy-2-methyl-1H-indole-3-acetic acid, 1-(4-Chlorobenzoyl)-5-methoxy-2-methyl-1H-indole-3-acetic acid & MAP-30;

valerenic acid, valerenic acid;
valspodar, 3'-keto-Bmt(1)-Val(2)-cyclosporin A, PSC 833, PSC-833;
venlafaxine, 1-[2-(dimethylamino)-1-(4-methoxyphenyl)ethyl]cyclohexanol,
COc1ccc(cc1)C(CN(C)C)C2(O)CCCCC2, Elafax;
Verapamil, Calan, Cordilox, Dexverapamil;
verlukast, (3-(3-(2-(7-chloro-2-quinolinyl)ethenyl)phenyl)((3-dimethylamino-3-oxopropyl)thio)methyl)thiopropionic acid, L 660,711, L 660711;
vesnarinone, vesnarinone;
Viagra, 1-((3-(6,7-Dihydro-1-methyl-7-oxo-3-propyl-1H-pyrazolo(4,3-d)pyrimidin-5-yl)-4-ethoxyphenyl)sulfonyl)-4-methylpiperazine citrate (1:1), 5-[2-ethoxy-5-(4-methylpiperazin-1-yl)sulfonyl-phenyl]-1-methyl-3-propyl-4H-pyrazolo[5,4-e]pyrimidin-7-one; 2-hydroxypropane-1,2,3-tricarboxylic acid, 5-[2-ethoxy-5-(4-methylpiperazin-1-yl)sulfonylphenyl]-1-methyl-3-propyl-4H-pyrazolo[5,4-e]pyrimidin-7-one; 2-hydroxypropane-1,2,3-tricarboxylic acid;
Vigil, (+-)-Modafinil, (-)-2-((R)-(Diphenylmethyl)sulfinyl)acetamide, 2-((Diphenylmethyl)sulfinyl)acetamide;
vincristine, 22-oxovincalceulekblastine, leurocristine, vincristine;
vinflunine, vinflunine;
vinorelbine, 5'-nor-anhydrovinblastine, KW 2307, KW-2307;
vinpocetine, Armstrong brand of vinpocetine, Cavinton, Celltech brand of vinpocetine;
violacein, 3-(1,2-dihydro-5-(5-hydroxy-1H-indole-3-yl)-2-oxo-3H-pyrrol-3-ylidene)-1,3-dihydro-2H-indole-2-one, violacein;
Vira-A, (2R,3R,4R,5R)-2-(6-aminopurin-9-yl)-5-(hydroxymethyl)oxolane-3,4-diol, .alpha.-D-Arabinofuranosyladenine, .beta.-Adenosine;
voriconazole, Pfizer brand of voriconazole, UK 109,496, UK 109496;
vorozole, 6-((4-chlorophenyl)-(1H-1,2,4-triazol-1-yl)methyl)-1-methyl-1H-benzotriazole, R 76713, R 83839;
VX680, cyclopropane carboxylic acid(4-(4-(4-methylpiperazin-1-yl)-6-(5-methyl-2H-pyrazol-3-ylamino)pyrimidin-2-yl)sulfanyl)phenyl)amide, MK-0457, VE 465;

Warfarin, 4-Hydroxy-3-(3-oxo-1-phenylbutyl)-2H-1-benzopyran-2-one, Aldo Brand of Warfarin Sodium, Aldocumar;
WAY-169916, WAY-169916;
Win 55212-2, (2,3-dihydro-5-methyl-3-((4-morpholinyl)methyl)pyrrolo-(1,2,3-de)-1,4-benzoxazin-6-yl)(1-naphthalenyl)methanone monomethanesulfonate, 6H-Pyrrolo(3,2,1-ij)quinolin-6-one, 4,5-dihydro-2-methyl-4-(4-morpholinylmethyl)-1-(1-naphthalenylcarbonyl)-, (R)-, WIN 55,212;
withaferin A, 5,6-epoxy-4,22,27-trihydroxy-1-oxoergosta-2,24-dienoic acid delta-lactone, withaferin A;
WLN: QR BG, 2-Chloro-1-hydroxybenzene, 2-Chlorophenol, 2-Hydroxychlorobenzene;
WLN: RVR, .alpha.-Oxodiphenylmethane, .alpha.-Oxoditane, alpha-oxodiphenylmethane;
WLN: ZSWR, BENZENESULFONAMIDE, Benzenesulphonamide, Benzol-sulfonamide;
xanthohumol, 1-(2,4-dihydroxy-6-methoxy-3-(3-methyl-2-butenyl)phenyl)-3-(4-hydroxyphenyl)-2-propen-1-one, desmethylxanthohumol, xanthohumol;
Xaxa, 2-(ACETYLOXY)BENZOIC ACID, 2-Acetoxybenzenecarboxylic acid, 2-acetoxybenzoic acid;
Xylit, (2S,4R)-pentane-1,2,3,4,5-pentol, 1,2,3,4,5-Pentanepentol, Adonit;
Y 27632, N-(4-pyridyl)-4-(1-aminoethyl)cyclohexanecarboxamide, Y 27632, Y 27632, (4(R)-trans)-isomer;
yrystate, (1aR,1bS,4aR,7aS,7bS,8R,9R,9aS)-9a-acetoxy-4a,7b-dihydroxy-3-(hydroxymethyl)-1,1,6,8-tetramethyl-5-oxo-1a,1b,4,4a,5,7a,7b,8,9,9a-decahydro-1H-cyclopropa[3,4]benzo[1,2-e]azulen-9-yl tetradecanoate, -one 9a-acetate, (+)-(8CI), Err:508;
Z 338, N-(N',N'-diisopropylaminoethyl)-(2-(2-hydroxy-4,5-dimethoxybenzoylamino)-1,3-thiazole-4-yl)carboxamide, YM 443, YM-443;
zafirlukast, 4-(5-cyclopentyloxycarbonylamino-2-methylindol-3-yl-methyl)-3-methoxy-N-O-tolylsulfonylbenzamide, Accolate, Aero-nix;
Zalcitabine, 2',3'-Dideoxycytidine, ddC (Antiviral), Dideoxycytidine;
zardaverine, 6-(4-difluoromethoxy-3-methoxyphenyl)-3(2H)pyridazinone, zardaverine;

ZD 9331, BGC9331, ZD 9331, ZD-9331;
 Zearalenone, F 2 Toxin, F-2 Toxin, F2 Toxin;
 Zeldox, 2H-Indol-2-one, 5-(2-(4-(1,2-benzisothiazol-3-yl)-1-piperazinyl)ethyl)-6-chloro-1,3-dihydro-, 5-[2-[4-(1,2-benzothiazol-3-yl)-1-piperazinyl]ethyl]-6-chloro-2-indolinone, 5-[2-[4-(1,2-benzothiazol-3-yl)piperazin-1-yl]ethyl]-6-chloro-1,3-dihydroindol-2-one;
 zerumbone, zerumbone;
 Zidovudine, 3' Azido 3' deoxythymidine, 3'-Azido-2',3'-Dideoxythymidine, 3'-Azido-3'-deoxythymidine;
 zileuton, A 64077, A-64077, Abbot 64077;
 Zocor, (1S,3R,7S,8S,8aR)-8-{2-[(2R,4R)-4-hydroxy-6-oxotetrahydro-2H-pyran-2-yl]ethyl}-3,7-dimethyl-1,2,3,7,8,8a-hexahydronaphthalen-1-yl 2,2-dimethylbutanoate, 2,2-Dimethylbutanoic acid (1S,3R,7S,8S,8aR)-1,2,3,7,8,8a-hexahydro-3,7-dimethyl-8-[2-[(2R,4R)-tetrahydro-4-hydroxy-6-oxo-2H-pyran-2-yl]ethyl]-1-naphthalenyl ester, 2,2-dimethylbutanoic acid [(1S,3R,7S,8S,8aR)-8-[2-[(2R,4R)-4-hydroxy-6-oxo-2-tetrahydropyranyl]ethyl]-3,7-dimethyl-1,2,3,7,8,8a-hexahydronaphthalen-1-yl] ester;
 zopiclone, 6-(5-chloro-2-pyridyl)-6,7-dihydro- 7-oxo-5H-pyrrolo(3,4-b)pyrazin-5-yl 4-methyl-1- piperazinecarboxylate, AbZ brand of zopiclone, Aliud brand of zopiclone;
 Zymosan, Zymosan, Zymosan A;
 Trospium chloride, 2-hydroxy-2,2-diphenyl-acetic acid [(1R,5S)-spiro[8-azoniabicyclo[3.2.1]octane-8,1'-azolidin-1-ium]-3-yl] ester chloride, 2-hydroxy-2,2-diphenylacetic acid [(1R,5S)-3-spiro[8-azoniabicyclo[3.2.1]octane-8,1'-azolidin-1-ium]yl] ester chloride, 3-((hydroxydiphenylacetyl)oxy)-spiro(8-azoniabicyclo(3.2.1)octane-8,1'-pyrrolidinium chloride;
 Valproic Acid, 2 Propylpentanoic Acid, 2-Propylpentanoic Acid, Calcium Valproate;

In preferred embodiments the present invention is defined as follows:

1. The method of treating or preventing pain in a subject comprising the administration of a therapeutic compound selected from the compounds of table 1.
2. The method of reducing pain in a subject or to treat train comprising the administration of an antagonist of one or more of the genes or gene products thereof, selected from genes CACNA2D3

(alpha-2-delta-3), PIK3CG or any gene selected from one or more of the genes listed in table 1, in particular selected from CG10033, CG10095, CG10142, CG10153, CG10158, CG10186, CG10186, CG10228, CG10265, CG1031, CG10332, CG10332, CG10481, CG10537, CG10550, CG1058, CG10583, CG10603, CG10603, CG10612, CG10641, CG10667, CG10686, CG10689, CG10689, CG10691, CG10706, CG10711, CG10728, CG10746, CG10800, CG10823, CG1086, CG10882, CG10932, CG10936, CG10954, CG10988, CG1100, CG1100, CG1101, CG11033, CG11081, CG11183, CG1119, CG11280, CG1130, CG11352, CG11456, CG11508, CG1152, CG11555, CG11577, CG11586, CG11590, CG11592, CG11594, CG11637, CG11637, CG11638, CG11642, CG11715, CG1180, CG1180, CG11820, CG11857, CG11865, CG11878, CG11893, CG11895, CG1193, CG11930, CG11942, CG11967, CG11992, CG12004, CG12030, CG12035, CG12052, CG12079, CG12082, CG12093, CG12131, CG12135, CG12199, CG12209, CG12235, CG12269, CG12290, CG12334, CG12373, CG12559, CG12637, CG1264, CG12641, CG12641, CG12645, CG12663, CG12749, CG12796, CG12797, CG12831, CG12878, CG12932, CG12938, CG12954, CG12975, CG13035, CG13047, CG13061, CG13069, CG13074, CG13096, CG13110, CG13130, CG13130, CG13162, CG13194, CG13196, CG13196, CG13243, CG13308, CG13319, CG13403, CG13559, CG13575, CG13623, CG1371, CG1387, CG13998, CG14028, CG1406, CG14065, CG14086, CG14214, CG14217, CG14240, CG14252, CG14274, CG14351, CG14362, CG14374, CG14374, CG14376, CG14506, CG14514, CG14590, CG14659, CG14710, CG14750, CG14755, CG14804, CG14818, CG14940, CG14952, CG14980, CG15059, CG15120, CG15153, CG15167, CG15254, CG15307, CG15321, CG15324, CG15427, CG15570, CG15604, CG15604, CG15884, CG16778, CG1683, CG16840, CG16852, CG16854, CG16873, CG16899, CG16932, CG16975, CG17003, CG17027, CG1709, CG17137, CG17146, CG17150, CG17189, CG17234, CG1725, CG17255, CG17266, CG17293, CG17295, CG17521, CG1759, CG17612, CG17673, CG17697, CG17943, CG1800, CG1804, CG18069, CG18088, CG18130, CG18249, CG18332, CG18332, CG18350, CG18350, CG18350, CG18350, CG18372, CG1845, CG18480, CG18624, CG18624, CG18666, CG1915, CG1921, CG1921, CG1966, CG1968, CG1982, CG2038, CG2060, CG2079, CG2100, CG2109, CG2128, CG2158, CG2161, CG2257, CG2257, CG2286, CG2346, CG2371, CG2371, CG2503, CG2522, CG2747, CG2848, CG2848, CG2872, CG2872, CG2901, CG3000, CG30004, CG30004, CG30005, CG30039, CG30050, CG30073, CG30291, CG30342, CG30383, CG30384, CG30404, CG3083, CG3105, CG31065, CG31068, CG31110, CG31267, CG31299, CG31300, CG31623, CG31713, CG31716, CG31718, CG3181, CG3184,

CG31841, CG31842, CG31876, CG31886, CG31908, CG31936, CG31955,
CG31962, CG32016, CG32025, CG32045, CG32057, CG32121, CG3213,
CG32148, CG32150, CG32176, CG32193, CG32219, CG32227, CG3224,
CG32278, CG32296, CG32296, CG32313, CG32333, CG32346, CG3241,
CG32531, CG32533, CG32540, CG32604, CG32614, CG32678, CG32678,
CG32678, CG32678, CG3269, CG32698, CG3270, CG32703, CG32736,
CG32779, CG32779, CG32779, CG32792, CG3291, CG3295, CG3298,
CG33002, CG33106, CG33106, CG33106, CG33106, CG33106, CG33106,
CG33128, CG33135, CG33147, CG33149, CG33166, CG33202, CG33261,
CG33275, CG33275, CG3330, CG33346, CG33350, CG3344, CG33484,
CG33500, CG33500, CG3351, CG33512, CG33512, CG33530, CG33547,
CG33547, CG33653, CG33980, CG34059, CG34140, CG34140, CG34159,
CG3421, CG34339, CG34341, CG34364, CG34383, CG34400, CG34401,
CG34401, CG34416, CG3474, CG3520, CG3569, CG3581, CG3604,
CG3613, CG3619, CG3619, CG3619, CG3707, CG3711, CG3717, CG3735,
CG3905, CG3943, CG3949, CG3955, CG3981, CG4013, CG4040, CG4083,
CG4094, CG4109, CG4217, CG42250, CG4247, CG4247, CG4260, CG4279,
CG4279, CG4351, CG4365, CG4396, CG4459, CG4477, CG4502, CG4550,
CG4560, CG4584, CG4587, CG4612, CG4633, CG4633, CG4648, CG4655,
CG4673, CG4692, CG4698, CG4742, CG4775, CG4795, CG4798, CG4799,
CG4806, CG4807, CG4830, CG4875, CG4875, CG4887, CG4946, CG4975,
CG4977, CG5003, CG5012, CG5012, CG5013, CG5014, CG5014, CG5121,
CG5134, CG5160, CG5179, CG5183, CG5198, CG5201, CG5219, CG5219,
CG5261, CG5287, CG5330, CG5405, CG5411, CG5473, CG5499, CG5516,
CG5519, CG5565, CG5580, CG5611, CG5643, CG5644, CG5703, CG5723,
CG5725, CG5725, CG5727, CG5757, CG5788, CG5800, CG5818, CG5819,
CG5821, CG5842, CG5884, CG5889, CG5890, CG5902, CG5934, CG5940,
CG5949, CG5969, CG5977, CG5986, CG6006, CG6098, CG6136, CG6143,
CG6177, CG6210, CG6249, CG6340, CG6395, CG6457, CG6496, CG6536,
CG6549, CG6553, CG6571, CG6575, CG6582, CG6583, CG6605, CG6620,
CG6637, CG6673, CG6703, CG6721, CG6724, CG6822, CG6824, CG6930,
CG6930, CG6946, CG6948, CG6963, CG6971, CG6971, CG6972, CG6987,
CG6998, CG7006, CG7007, CG7007, CG7010, CG7015, CG7025, CG7059,
CG7081, CG7099, CG7100, CG7109, CG7129, CG7145, CG7160, CG7175,
CG7175, CG7187, CG7194, CG7211, CG7223, CG7225, CG7292, CG7311,
CG7342, CG7358, CG7371, CG7376, CG7422, CG7430, CG7443, CG7467,
CG7494, CG7494, CG7497, CG7507, CG7556, CG7583, CG7636, CG7664,
CG7708, CG7708, CG7712, CG7728, CG7730, CG7800, CG7800, CG7811,
CG7816, CG7856, CG7873, CG7946, CG7957, CG8005, CG8008, CG8009,
CG8014, CG8014, CG8029, CG8039, CG8048, CG8107, CG8110, CG8114,

CG8203, CG8233, CG8288, CG8325, CG8326, CG8394, CG8432, CG8436, CG8440, CG8487, CG8520, CG8625, CG8631, CG8651, CG8732, CG8764, CG8849, CG8912, CG8914, CG8985, CG8985, CG9022, CG9022, CG9032, CG9067, CG9102, CG9160, CG9172, CG9231, CG9280, CG9311, CG9323, CG9350, CG9388, CG9447, CG9453, CG9460, CG9519, CG9537, CG9548, CG9603, CG9636, CG9636, CG9650, CG9696, CG9739, CG9742, CG9753, CG9753, CG9825, CG9825, CG9901, CG9901, CG9948, or an ortholog thereof, preferably wherein the antagonist is selected from an antibody or an inhibitory RNA, particularly a siRNA.

3. The method according to definition 1 or 2, characterized in that a the compound or antagonist is administered in a effective therapeutic dose.

4. The method of any one of definitions 1 to 3, characterized in that the compound is administered topical, enteral or parenteral, in particular preferred oral or rectal, intravenous, intraarterial, intramuscular, subcutaneous, intradermal or intraperitoneal, transdermal, transmucosal or inhalational.

5. The method of any one of definitions 1 to 4, characterized in that the subject is mammal, preferably a human.

6. The method of any one of definitions 1 to 5, characterized in that the compound or antagonist is provided in a medicament.

7. The method of any one of definitions 1 to 6, characterized in that the compound or antagonist is provided together with a pharmaceutically acceptable carrier or buffer.

8. The method of any one of definitions 1 to 6, characterized in that the compound or antagonist is administered in a dosage of between 0.01 mg/kg and 1 g/kg.9. Use of a compound as defined in definition 1 or an antagonist as defined in definition 2, preferably further defined as in any one of definitions 3 to 8, for the manufacture of an analgesic or for the treatment of pain.

10. Compound as defined in definition 1 or an antagonist as defined in definition 2 for use in a therapeutic method for the treatment of pain, preferably as further defined in any one of definitions 3 to 8.

11. Method according to any one of definitions 1 to 8, use of definition 9 or compound of definition 10, wherein pain is selected from or associated with chronic or acute pain or hyperalgesia, somatogenic pain, neuropathic pain, psychogenic pain, heat induced pain, physical pain, nociception, hyperalgesia,

rheumatic pain, headache, low back pain, pelvic pain, myofascial pain, vascular pain, migraine, wound associated pain, inflammatory pain, arthritic pain, diabetic pain, pain from cancer, somatic visceral pain, phantom pain, or any combination thereof.

12. The method of modulating the gene expression or gene function in a cell, wherein the gene is selected from one or more of the genes listed in table 1, in particular selected from CACNA2D3, PIK3CG, CG10033, CG10095, CG10142, CG10153, CG10158, CG10186, CG10186, CG10228, CG10265, CG1031, CG10332, CG10332, CG10481, CG10537, CG10550, CG1058, CG10583, CG10603, CG10603, CG10612, CG10641, CG10667, CG10686, CG10689, CG10689, CG10691, CG10706, CG10711, CG10728, CG10746, CG10800, CG10823, CG1086, CG10882, CG10932, CG10936, CG10954, CG10988, CG1100, CG1100, CG1101, CG11033, CG11081, CG11183, CG1119, CG11280, CG1130, CG11352, CG11456, CG11508, CG1152, CG11555, CG11577, CG11586, CG11590, CG11592, CG11594, CG11637, CG11637, CG11638, CG11642, CG11715, CG1180, CG1180, CG11820, CG11857, CG11865, CG11878, CG11893, CG11895, CG1193, CG11930, CG11942, CG11967, CG11992, CG12004, CG12030, CG12035, CG12052, CG12079, CG12082, CG12093, CG12131, CG12135, CG12199, CG12209, CG12235, CG12269, CG12290, CG12334, CG12373, CG12559, CG12637, CG1264, CG12641, CG12641, CG12645, CG12663, CG12749, CG12796, CG12797, CG12831, CG12878, CG12932, CG12938, CG12954, CG12975, CG13035, CG13047, CG13061, CG13069, CG13074, CG13096, CG13110, CG13130, CG13130, CG13162, CG13194, CG13196, CG13196, CG13243, CG13308, CG13319, CG13403, CG13559, CG13575, CG13623, CG1371, CG1387, CG13998, CG14028, CG1406, CG14065, CG14086, CG14214, CG14217, CG14240, CG14252, CG14274, CG14351, CG14362, CG14374, CG14374, CG14376, CG14506, CG14514, CG14590, CG14659, CG14710, CG14750, CG14755, CG14804, CG14818, CG14940, CG14952, CG14980, CG15059, CG15120, CG15153, CG15167, CG15254, CG15307, CG15321, CG15324, CG15427, CG15570, CG15604, CG15604, CG15884, CG16778, CG1683, CG16840, CG16852, CG16854, CG16873, CG16899, CG16932, CG16975, CG17003, CG17027, CG1709, CG17137, CG17146, CG17150, CG17189, CG17234, CG1725, CG17255, CG17266, CG17293, CG17295, CG17521, CG1759, CG17612, CG17673, CG17697, CG17943, CG1800, CG1804, CG18069, CG18088, CG18130, CG18249, CG18332, CG18332, CG18350, CG18350, CG18350, CG18350, CG18372, CG1845, CG18480, CG18624, CG18624, CG18666, CG1915, CG1921, CG1921, CG1966, CG1968, CG1982, CG2038, CG2060, CG2079, CG2100, CG2109, CG2128, CG2158, CG2161, CG2257, CG2257,

CG2286, CG2346, CG2371, CG2371, CG2503, CG2522, CG2747, CG2848, CG2848, CG2872, CG2872, CG2901, CG3000, CG30004, CG30004, CG30005, CG30039, CG30050, CG30073, CG30291, CG30342, CG30383, CG30384, CG30404, CG3083, CG3105, CG31065, CG31068, CG31110, CG31267, CG31299, CG31300, CG31623, CG31713, CG31716, CG31718, CG3181, CG3184, CG31841, CG31842, CG31876, CG31886, CG31908, CG31936, CG31955, CG31962, CG32016, CG32025, CG32045, CG32057, CG32121, CG3213, CG32148, CG32150, CG32176, CG32193, CG32219, CG32227, CG3224, CG32278, CG32296, CG32296, CG32313, CG32333, CG32346, CG3241, CG32531, CG32533, CG32540, CG32604, CG32614, CG32678, CG32678, CG32678, CG32678, CG3269, CG32698, CG3270, CG32703, CG32736, CG32779, CG32779, CG32779, CG32792, CG3291, CG3295, CG3298, CG33002, CG33106, CG33106, CG33106, CG33106, CG33106, CG33106, CG33128, CG33135, CG33147, CG33149, CG33166, CG33202, CG33261, CG33275, CG33275, CG3330, CG33346, CG33350, CG3344, CG33484, CG33500, CG33500, CG3351, CG33512, CG33512, CG33530, CG33547, CG33547, CG33653, CG33980, CG34059, CG34140, CG34140, CG34159, CG3421, CG34339, CG34341, CG34364, CG34383, CG34400, CG34401, CG34401, CG34416, CG3474, CG3520, CG3569, CG3581, CG3604, CG3613, CG3619, CG3619, CG3619, CG3707, CG3711, CG3717, CG3735, CG3905, CG3943, CG3949, CG3955, CG3981, CG4013, CG4040, CG4083, CG4094, CG4109, CG4217, CG42250, CG4247, CG4247, CG4260, CG4279, CG4279, CG4351, CG4365, CG4396, CG4459, CG4477, CG4502, CG4550, CG4560, CG4584, CG4587, CG4612, CG4633, CG4633, CG4648, CG4655, CG4673, CG4692, CG4698, CG4742, CG4775, CG4795, CG4798, CG4799, CG4806, CG4807, CG4830, CG4875, CG4875, CG4887, CG4946, CG4975, CG4977, CG5003, CG5012, CG5012, CG5013, CG5014, CG5014, CG5121, CG5134, CG5160, CG5179, CG5183, CG5198, CG5201, CG5219, CG5219, CG5261, CG5287, CG5330, CG5405, CG5411, CG5473, CG5499, CG5516, CG5519, CG5565, CG5580, CG5611, CG5643, CG5644, CG5703, CG5723, CG5725, CG5725, CG5727, CG5757, CG5788, CG5800, CG5818, CG5819, CG5821, CG5842, CG5884, CG5889, CG5890, CG5902, CG5934, CG5940, CG5949, CG5969, CG5977, CG5986, CG6006, CG6098, CG6136, CG6143, CG6177, CG6210, CG6249, CG6340, CG6395, CG6457, CG6496, CG6536, CG6549, CG6553, CG6571, CG6575, CG6582, CG6583, CG6605, CG6620, CG6637, CG6673, CG6703, CG6721, CG6724, CG6822, CG6824, CG6930, CG6930, CG6946, CG6948, CG6963, CG6971, CG6971, CG6972, CG6987, CG6998, CG7006, CG7007, CG7007, CG7010, CG7015, CG7025, CG7059, CG7081, CG7099, CG7100, CG7109, CG7129, CG7145, CG7160, CG7175, CG7175, CG7187, CG7194, CG7211, CG7223, CG7225,

CG7292, CG7311, CG7342, CG7358, CG7371, CG7376, CG7422, CG7430, CG7443, CG7467, CG7494, CG7494, CG7497, CG7507, CG7556, CG7583, CG7636, CG7664, CG7708, CG7708, CG7712, CG7728, CG7730, CG7800, CG7800, CG7811, CG7816, CG7856, CG7873, CG7946, CG7957, CG8005, CG8008, CG8009, CG8014, CG8014, CG8029, CG8039, CG8048, CG8107, CG8110, CG8114, CG8203, CG8233, CG8288, CG8325, CG8326, CG8394, CG8432, CG8436, CG8440, CG8487, CG8520, CG8625, CG8631, CG8651, CG8732, CG8764, CG8849, CG8912, CG8914, CG8985, CG8985, CG9022, CG9022, CG9032, CG9067, CG9102, CG9160, CG9172, CG9231, CG9280, CG9311, CG9323, CG9350, CG9388, CG9447, CG9453, CG9460, CG9519, CG9537, CG9548, CG9603, CG9636, CG9636, CG9650, CG9696, CG9739, CG9742, CG9753, CG9753, CG9825, CG9825, CG9901, CG9901, CG9948, or an ortholog counterpart thereof, comprising administering a compound of table 1 to said cell.

13. The method of definition 12, wherein the cell is a nerve cell.

14. The method of definition 12 or 13, wherein administration treats, alleviates or prevents pain or hyperalgesia in a subject.

The present invention is further illustrated by the following figures and examples.

Figures:

Figure 1. Thermal nociception in adult *Drosophila*.

(A) Schematic representation of the thermal nociception assay in adult *Drosophila*. (B) Avoidance of noxious temperature of 46°C, but not avoidance of "sub-noxious" temperatures (25-35°C), is impaired in *painless* mutant (*Painless*(EP(2)2451) flies compared to the control strain Canton S (control). Data are presented as mean values +/- SEM. ~20 flies were tested per group, in replicates of at least four cohorts. Significant differences (P<0.001) were observed for temperature and strain responses. Further post hoc (Tukey's) analysis showed a significant temperature avoidance response at 46°C for control (*, P<0.05) but not *painless* flies when compared to responses at 25°C. (C) To set up the experimental screening system, *w¹¹¹⁸* (isogenic to the *UAS-IR* library) x *elav-Gal4* flies (Control, grey; n = 1706) and *painless* mutant flies (*painless*, blue; n= 1816) were tested for avoidance to noxious heat (46°C). Based on these data a Z-score

≥ 1.65 was calculated as a specific cut-off to identify lines for further screening. *Elav-Gal4* (also containing *UAS-Dicer 2* (*UAS-DRC2*) for more efficient gene silencing) females were crossed to *UAS-IR* lines to knock-down the target genes in all neurons. All lines that exhibited a thermal avoidance defect (Z-score ≥ 1.65) were re-rested multiple times. (D) Results of the genome-wide screen. $\sim 3\%$ (622 transformants) of total lines tested (16051) exhibited a defect in thermal nociception, resulting in 580 candidate pain genes (622 transgenic lines). (E) Distribution of adult thermal nociception and developmental lethal hits for 16051 *Drosophila* *UAS-IR* lines. 1427 *elav-Gal4* x *UAS-IR* lines were developmentally lethal (lethal). Among the 14624 viable lines, 562 lines exhibited defective thermal nociception (pain). Additional 60 lines that exhibited defective nociception as well as a semi-lethal phenotype were labeled as pain & lethal.

Figure 2. *Straightjacket* controls thermal nociception in adult *Drosophila*.

(A) Diagram of the $\alpha 2-\delta$ family encoding peripheral subunits of Ca^{2+} channels. (B) RNAi knock-down of *stj* impairs noxious thermal avoidance in adult *Drosophila* (% avoidance of noxious temperature). *stj-IR1* = Inverted repeat 1, *stj-IR2* = Inverted repeat 2, both crossed to *elav-Gal4;UAS-DCR2*. (C) Q-PCR for *stj* Knock-down efficiency in *elav-Gal4>UAS-stj-IR1/2* adult fly brains. (D) Kinetics of temperature-induced paralysis for control and *elav-Gal4>UAS-stj* flies. (E) *stj-Gal4* driving expression of *lamin:GFP* to label nuclei and cell surface *CD8:GFP* to visualize axonal projections in the brain of adult flies. The pars intercerebralis is marked with an arrow. (F) Co-localization of anti-STJ immunostaining and *stj-Gal4>UAS-lamin:GFP*. The pars intercerebralis is marked with an arrow. (G) *stj* *in situ* hybridization in the leg of wild type (w^{1118}) flies. Of note, the sense control did not show any signal. DAPI counterstaining is shown as mark nuclei. All data are presented as mean $\pm$ sem. * $P < 0.05$, ** $P < 0.01$ (Student's t-test).

Figure 3. *Straightjacket* controls thermal nociception in *Drosophila* larvae.

1. (A) *stj-GAL4* driven expression of *UAS-CD8:GFP* in larval body

wall sensory neurons co-stained with anti-Futsch as a marker for sensory neurons. CD8:GFP expression co-localizes with sensory neurons (Futsch) in larval abdominal hemi-segments (A3) (top panels), and multidendritic sensory neurons (bottom panels). (B) Pan-neuronal knock-down of *stj* (UAS-*stj*-IR x *elav*), a mutant of *stj* (*stj2*), and *stj* mutant larvae over a corresponding deficiency *Df(2R)Exel7128* (*stj2/def*) show severely impaired thermal nociception responses compared to *w1118* x *elav* controls. *painless* larvae are shown as a control. The impaired larval thermal responses of a *stj/def* was rescued by reintroducing a wild type *stj* allele using the P[acman] system (*stj2/def*, *stj+*) (Venken et al., 2009). Percent responses $\pm$ sem to a 46°C heated probe are shown for the indicated time points. Mean response latency $\pm$ sem. P value was generated using a Kruskal-Wallis non-parametric test for median comparison with the Dunn's post-hoc test. All P values depicted highlight significance relative to control responses. *stj* rescue was also significantly difference from *stj2* and *stj2/def*, ($P < 0.001$). At least 20 animals were tested three times per genotype.

Figure 4. $\alpha 2\delta 3$ is required for thermal pain responses in mice.

8. (A) Southern blotting of genomic DNA in $\alpha 2\delta 3$ wild type (+/+) and $\alpha 2\delta 3$ heterozygous (+/-) ES cells to confirm successful gene targeting. The endogenous wild type and targeted alleles are indicated. A 5' probe was used on Nhe I digested genomic DNA. (B) $\alpha 2\delta 3$ and $\alpha 2\delta 1$ protein expression in brain and isolated DRG lysated from $\alpha 2\delta 3$ +/+ (+/+), $\alpha 2\delta 3$ +/- (+/-), and $\alpha 2\delta 3$ -/- (-/-) mice. Actin is shown as a loading control. (C) Using the hot plate assay, $\alpha 2\delta 3$ mutant mice (n=16) show a delayed acute thermal nociception response as compared to control $\alpha 2\delta 3$ +/+ mice (n=12). Littermate mice were used as a control. Values represent the latency (seconds) to respond to the indicated temperatures. (D) CFA-induced inflammatory pain behavior. CFA (20 μ l) was injected into the hindpaw of $\alpha 2\delta 3$ +/- (+/+, n=10) and $\alpha 2\delta 3$ -/- (-/-, n=21) littermates and mice were tested for thermal pain (54°C) using the hot plate assay on the indicated days. Days 1, 3, 5, and 7 indicate days after CFA injection. All data are presented as mean values $\pm$ sem. * $p < 0.05$; ** $p < 0.01$; *** $P < 0.001$ comparing mutant versus control mice. # $P < 0.05$ comparing sensitization to baseline (day -2) of the same genotype (Student's t-

test).

Figure 5. Polymorphisms in *CACNA2D3* ($\alpha 2\delta 3$) associate with decreased acute and chronic pain in humans.

(A) Schematic representation of the human *CACNA2D3* gene locus on chromosome 3p21.1. The positions of the SNPs assayed are indicated. Blue boxes represent exons. The relative gene position is given in megabases (Mb). (B) Homozygous carriers of the rs6777055 minor allele (C/C) were significantly less sensitive to heat wind-up induced sensitivity relative to the other genotypes (C/A or A/A). (C) Of 169 lumbar chronic root pain patients 1 year post discectomy those homozygous for the minor allele C/C at SNP rs6777055 and A/A at SNP rs1851048 were less sensitive than the other allele combinations. In each case, the homozygous minor allele is associated with significantly less pain. Note that genotyping was not always successful for every individual, hence, the slightly different total numbers in the chronic pain group. All data are presented as mean values $\pm$ sem. * $p < 0.05$ (Student's t-test).

Figure 6. $\alpha 2\delta 3$ is expressed in the brain and relays the pain signal to higher order brain centers.

(A) β -Gal staining of whole brain slices from $\alpha 2\delta 3^{+/-}$ mice that carry the LacZ cassette. Different brain regions that are positive for LacZ expression are indicated. White lines indicate the brain slices displayed in Fig. 7A. (B-C) Quantification of % BOLD change and mean activation volume (in voxels) for (B) the thalamus and (C) the S1 somato-sensory cortex of $\alpha 2\delta 3^{+/+}$ and $\alpha 2\delta 3^{-/-}$ mice. Of note, it has been proposed that the S1 cortical region is involved in the localisation of nociception (Treede et al., 1999). The different stimulation temperatures are indicated. Data are presented as mean $\pm$ sem. * $p < 0.05$, ** $p < 0.01$ (Student's t-test comparing the respective control and $\alpha 2\delta 3^{-/-}$ groups). (D) Cross-correlation matrix of time profiles. Whereas the pain signal spreads from the thalamus to other higher order pain centers in $\alpha 2\delta 3^{+/+}$ mice (red areas), in $\alpha 2\delta 3^{-/-}$ mice correlated activation can be only observed up to the level of the thalamus. Very weak activity is found in somato-sensory cortex (SC) for $\alpha 2\delta 3^{-/-}$ mice (green stripes). Data from the structures of left side of the brain are shown following challenge with

noxious heat (55°C) at the right hindpaw. SI: sensory input; Th: thalamus; SC: somato-sensory cortex; AC: association cortex; LL: link to limbic system; LS: limbic system; HT: hypothalamus; BG: basal ganglia; C: cerebellum; M: motor cortex, P: periaqueductal gray. Correlation-coefficients (cc) are given in the range from 0 (green), to +1 (red). n=20 for $\alpha 2\delta 3^{+/+}$; n = 18 for $\alpha 2\delta 3^{-/-}$.

Figure 7. $\alpha 2\delta 3$ mutant mice exhibit sensory cross-activation in response to thermal and tactile stimuli.

(A) Second order statistical parameters maps showing only the significant differences of heat (55°C) and tactile (vibrissae) stimulation induced brain activation between $\alpha 2\delta 3^{+/+}$ and $\alpha 2\delta 3^{-/-}$ mutant mice. Activation was assessed by BOLD-fMRI. The three planes correspond to the white lines shown in Fig. 6A. The green/blue scale indicates increased peak activation (55°C) in $\alpha 2\delta 3^{+/+}$ control mice compared to $\alpha 2\delta 3^{-/-}$ mutant mice. The yellow/red scale indicates increased activation in $\alpha 2\delta 3^{-/-}$ mutant mice compared to $\alpha 2\delta 3^{+/+}$ control mice. Images depict significant differences of second order group statistics corrected for multiple comparisons over all mice tested (n = 20 for $\alpha 2\delta 3^{+/+}$ mice, n = 18 for $\alpha 2\delta 3^{-/-}$ mice). Arrows point to activated regions; note that for heat stimulation the S1/S2 somato-sensory cortex, the cingulate (Cg) cortex and the motor (M) cortex show significantly higher activity in $\alpha 2\delta 3^{+/+}$ controls. In $\alpha 2\delta 3^{-/-}$ mice, heat stimulation leads to significantly higher activity auditory cortex (AC), the visual cortex (VC), and the olfactory tubercle (OT), as well as the amygdala (Amd) and the hypothalamus (HT). For tactile stimulation, only one small region in the S1 somatosensory cortex, ipsilateral to the side of stimulation (right), showed significantly higher activity in $\alpha 2\delta 3^{+/+}$ controls, whereas $\alpha 2\delta 3^{-/-}$ mice again exhibited increased activation of the VC, AC, and OT, in addition to the caudate putamen (Cpu), S1 and S2 regions of the somato-sensory cortex, and the superior colliculus (SC). (B,C) % BOLD changes in the auditory cortex (AC), olfactory tubercle (OT), and visual cortex (VC) in control and $\alpha 2\delta 3^{-/-}$ mice following (B) heat (55°C) and (C) tactile vibrissal stimulation. Data is presented as mean values $\pm$ sem. * $p < 0.05$; ** $p < 0.01$ (Student's t-test).

Figure 8. Thermal nociception in adult *Drosophila*.

(A) A schematic outline is shown of the thermal nociception assay we developed to assess the behavioral response to avoid noxious heat. The formula to calculate % avoidance is indicated. Of note, temperature at the top surface was measured at 31°C after 4 minutes. (B) Mean avoidance for all tested 16051 *elav-Gal4 - Gal4>UAS-IR* lines were ranked and a line of best fit was generated to display all avoidance responses. The cut-off used to score the *UAS-IR* lines with an impaired thermal nociception response is indicated as a dotted line (Z-score > 1.65 corresponding to a mean avoidance of 82%). (C) GO (Gene Ontology) classification of adult thermal nociception hits in *Drosophila*. Pie chart represents the fraction of genes corresponding to each functional category. Numbers indicate the gene counts from all the GO terms included in each functional category. (D) Gene set enrichment analysis (GSA). Significant GO terms are classified according to their parent terms - cellular components (CC), biological processes (BP), and molecular functions (MF). Numbers indicate the number of GO terms that constitute each functional class.

Figure 9. Brain morphology in *stj*-knockdown flies and *stj-Gal4* expressing neurons and axonal projections in the *Drosophila* CNS.

(A) NC82 staining of control and *stj*-knockdown brains. We imaged the entire and did not observe any structural abnormalities. Representative images are shown at anterior and medial regions of the adult *Drosophila* brain. NC82 labels presynaptic structures and has been previously used to assess brain morphology (Vosshall et al., 2000). (B) Nuclear and projection labeling of *stj* positive cells in the adult *Drosophila* brain. *Stj*-expressing nuclei are situated on the anterior surface and the pars intercerebralis (arrow) of the *Drosophila* brain. *Stj* projections cross the posterior brain and can be also found in the connection from the brain to the ventral nerve cord (arrowhead). Depicted are whole brain confocal images of *stj-Gal4>UAS-Lamin:GFP* and *stj-Gal4>UAS-CD8:GFP* fly lines. Composite images, and single images from anterior, mid, and posterior brain segments are shown. (C) Nuclear and cell surface labeling of *stj* positive cells in the *Drosophila* ventral nerve cord (VNC) labels cell bodies throughout the VNC. CD8:GFP strongly labels neurons in

the cervical connective, likely ascending neurons connecting the VNC to the brain (arrow and also see arrow head in B). Data are composite images from *stj-Gal4>UAS-Lamin:GFP* and *stj-Gal4>UAS-CD8:GFP* fly lines.

Figure 10. *stj* and *stj* expressing nerves control thermal pain in larvae.

(A) Temperature dose-response for control, *stj* mutant (*stj*²), and *stj* mutant with *stj* rescue (*stj*²/*Df*(2R)*Exel7128*, *stj*⁺) Responses were recorded at 44°C, 46°C, 50°C, and 53°C. *stj* rescue larvae exhibited responses that were not significant compared to control, and significantly faster compared to *stj* mutants at all temperatures tested (by Kruskal-wallis non-parametric test for median comparison with the Dunn's post-hoc test) (B) *stj*² point mutant larvae exhibit normal mechanosensation. The Kernan scoring system used was as described (Kernan et al., 1994): 0 = no response to touch, 1 = a response of pausing mouth-hook movement, 2 = responding by withdrawing the anterior or turning away from the touch, 3 = a single reverse peristaltic wave away from the touch, and 4 = multiple peristaltic waves away from the touch. Wild type *Canton S* and *Painless* (*Painless*(EP(2)2451) larvae are also shown. Larval sensitivities were assessed in first and second instar larvae. All data are presented as mean ± sem.

Figure 11. Characterization of $\alpha 2\delta 3$ mutant mice.

(A) $\alpha 2\delta 3$ mutant mice display normal inflammation in the CFA model. CFA (20 μ l) was injected into the hindpaw of $\alpha 2\delta 3^{+/-}$ (+/+, n = 8) and $\alpha 2\delta 3^{-/-}$ (-/-, n = 10) littermates and mice were tested for paw swelling (paw width in mm) at days -2 (2 days before CFA injection), Day 1, and Day 7 using a spring loaded caliper. (B) $\alpha 2\delta 3^{-/-}$ (n=9) and $\alpha 2\delta 3^{+/+}$ littermate controls (n=11) show similar acute mechanical pain thresholds using the von Frey test. (C-D) $\alpha 2\delta 3$ mutant mice display no obvious phenotype in the open field, (E) tail suspension assays, and (F) Rotarod responses. Mean values ± sem from $\alpha 2\delta 3^{+/+}$ (n =12) and $\alpha 2\delta 3^{-/-}$ (n =10) mice are shown. (G) $\alpha 2\delta 3$ mutant mice display no obvious phenotype in the tail flick response. Mean values ± sem from $\alpha 2\delta 3^{+/+}$ (n =12) and $\alpha 2\delta 3^{-/-}$ (n =16) mice are shown. There were no significant statistical differences between the groups. (H) The IV-plots of peak calcium inward currents derived from $\alpha 2\delta 3^{-/-}$ DRGs (red

circles, n=20) is identical to $\alpha 2\delta 3^{+/+}$ DRG neurons (black squares, n=20). (**I-K**) Characterization of voltage-gated calcium current behavior in $\alpha 2\delta 3^{+/+}$ and $\alpha 2\delta 3^{-/-}$ DRGs. (**I**) the maximal conductance (G) achieved upon membrane depolarization is identical in $\alpha 2\delta 3^{+/+}$ ($G_{peak} 1.76 \pm 0.18$ nS/pF and $G_{sus} 1.30 \pm 0.14$ nS/pF, n=20) and $\alpha 2\delta 3^{-/-}$ ($G_{peak} 1.65 \pm 0.16$ nS/pF and $G_{sus} 1.26 \pm 0.14$ nS/pF, n=20) DRG neurons. (**J**) Half-maximal voltage of activation ($\alpha 2\delta 3^{+/+}$: $V_{1/2peak} -15.16 \pm 0.71$ mV and $V_{1/2sus} -14.82 \pm 0.62$ mV, n=20; $\alpha 2\delta 3^{-/-}$: $V_{1/2peak} -16.00 \pm 0.93$ mV and $V_{1/2sus} -15.05 \pm 0.87$ mV, n=20) and (**K**) the associated slope ($\alpha 2\delta 3^{+/+}$: $S_{peak} 5.20 \pm 0.43$ mV and $S_{sus} 6.35 \pm 0.44$ mV, N=20; $\alpha 2\delta 3^{-/-}$: $S_{peak} 5.30 \pm 0.43$ mV and $S_{sus} 6.81 \pm 0.59$ mV, n=20).

Figure 12. Region specific fMRI activity.

Region-specific quantification of (**A**) peak height and (**B**) activated volume for brain structures of the left and right hemisphere after a thermal pain stimulus (55°C) in $\alpha 2\delta 3^{+/+}$ (n=20) and $\alpha 2\delta 3^{-/-}$ (n=18) mice. MT: medial thalamus; VPL: ventral postolateral/posteromedial thalamic nucleus; S1: primary and S2: secondary somato-sensory regions; Cg: cingulate cortex; Amd: amygdala; HT: hypothalamus; M: motor cortex. % BOLD change indicates increased BOLD signals compared to baseline. Activated volumes are expressed in voxels. All data are presented as mean values $\pm$ sem. * $p < 0.05$; ** $p < 0.01$ (Student's t-test comparing control and $\alpha 2\delta 3^{-/-}$ groups).

Figure 13. Cross-correlation matrix of the somatosensory pain matrix and negative BOLD fMRI.

(**A**) Cross-correlation matrix of time profiles of the structures of the somato-sensory pain matrix. Whereas the pain signal spreads from the thalamus to other higher order pain centres in $\alpha 2\delta 3^{+/+}$ mice (left-left: lower left, right-right: upper right; red areas), in $\alpha 2\delta 3^{-/-}$ mice correlated activation can be only observed up to the level of the thalamus. Moreover, much less correlated interhemispheric activity at the left right interaction matrices (left-right: lower right) was observed in the $\alpha 2\delta 3^{-/-}$ mice. Data from the left side and right sides of the brain are shown for the average across $\alpha 2\delta 3^{+/+}$ (n=20) and $\alpha 2\delta 3^{-/-}$ mice (n=18) following challenge with noxious heat (55°C) at the right hind paw. SI: sensory input; Th: thalamus; SC: sensory

cortex; AC: association cortex; LL: link to limbic system; LS: limbic system; HT: hypothalamus; BG: basal ganglia; C, cerebellum; M; motor cortex; P: periaquaeductal gray. Correlation-coefficients (cc) are given in the range from 0 (green) to +1 (red). **(B)**. Negatively correlated BOLD fMRI signals were found in the cingulate (Cg), motor cortex (M), and primary somatosensory cortex (S1) exclusively in $\alpha 2\delta 3^{-/-}$ mice (right panels, n=18) following challenge with a thermal pain stimulus (55°C). n = 20 for $\alpha 2\delta 3^{+/+}$ control mice. The yellow lines in the left brain image indicate the brain slices 1 and 2. The size of a voxel is indicated.

Figure 14. BOLD fMRI signals in the entire mouse brain.

Total BOLD fMRI activation for thermal pain stimulus (45°C, 50°C, 55°C): peak heights **(A)** and activated volumes **(B)** for $\alpha 2\delta 3^{+/+}$ (n = 20) and $\alpha 2\delta 3^{-/-}$ mice (n= 18). Note that at all temperatures and parameters measured, no significant differences were observed. For vibrissal stimulation significant stronger BOLD activity **(C)** and larger activation volume **(D)** were observed for $\alpha 2\delta 3^{-/-}$ (n=5) as compared to control $\alpha 2\delta 3^{+/+}$ (n=7) mice. All data are presented as mean values $\pm$ sem. **p < 0.01 (Student's t-test comparing control and $\alpha 2\delta 3^{-/-}$ groups).

Figure 15. Conserved regulators of thermal nociception.

GO enrichment analysis for human **(A)** and mouse **(B)** orthologs of *Drosophila* thermal nociception hits. GO terms were pooled into functional categories for data representation. Numbers indicate the counts of GO terms included in each functional category. These GO terms are grouped according to their parent terms - cellular components (CC), biological processes (BP), and molecular functions (MF). **(C)** Global C2 data set for mammalian orthologs. Functional classification of C2 gene sets (MsigDb, Broad institute) found enriched in mouse and human orthologs of our primary fly candidate thermal nociception genes and their first degree binding partners. The numbers indicate statistically significant C2 genes sets grouped into each functional category.

Figure 16. A global network map of thermal nociception.

The systems network includes data from the significantly en-

riched *Drosophila* KEGG pathways and GO processes, mouse and human KEGG pathways and C2 gene sets. Pathways, processes and gene sets that share a role in a biological process were pooled into functional classes while the underlying genes that constitute them are depicted with a connection to their respective functional class. Functional classes (brown), genes representing direct hits with a thermal nociception phenotype (red), their first degree binding partners (green) and developmental lethal genes (blue) represent the nodes in the network. Only select KEGG pathways, biological processes and C2 gene sets are used to build systems map.

Figure 17. PI3K γ controls thermal nociception and capsaicin responses *in vivo*.

(A) Schematic representation of the human PI3KCG gene locus on chromosome 7q22.3. The positions of the SNPs assayed are indicated. Blue boxes represent exons. The relative gene position is given in megabases (Mb). Normal and chronic refer to the healthy volunteers and chronic back pain patient cohorts, respectively. Wind up and heat tolerance are indicted for healthy volunteers. Significant values (dominant inheritance; t-test) are indicated.

(B) Healthy volunteers carrying the G allele at SNP rs757902 were significantly more sensitive to heat wind-up induced sensitivity relative to the A/A genotype. **(C)** Of 160 lumbar chronic root pain patients 1 year post discectomy those carrying the G allele at rs757902 exhibited increased pain. Data in B and C are presented as mean values $\pm$ sem and numbers of carriers of the respective alleles are indicated. **(D)** Wild type (WT) and *PI3K γ ^{-/-}* (KO) littermates show enhanced thermal pain thresholds in response to radiant heat (Hargreaves; n=22 for WT and n = 27 for KO mice). **(E)** *PI3K γ* KO mice also show enhanced thermal sensitivity in the hot plate assay (n=13 for WT; and n = 9 for KO mice) and **(F)** an exaggerated capsaicin-evoked behavioral response *in vivo* (n = 9 for WT and n = 13 for KO mice). **(G)** Thermal nociception in *PI3K γ ^{-/-}* (KO) mice reconstituted with wild type (WT→KO) or *PI3K γ ^{-/-}* (KO→KO) bone marrow. WT mice reconstituted with WT bone marrow are shown as controls. Hot plate assay; 54°C. n > 6 for each group. **(H)** Thermal nociception thresholds in response to radiant heat (Hargreaves test) in littermate control and PI3K γ kinase-dead (KD) knock-in mice still

exhibit enhanced baseline thermal nociception thresholds ($n = 19$ for WT and $n = 23$ for KD mice). Data are presented as mean $\pm$ sem. $*p < 0.05$; $**p < 0.01$ (t-test).

Figure 18. PI3K γ acts in DRG as a negative regulator of thermal nociception and capsaicin responses.

(A) Representative temperature response ramps and Arrhenius plots for heat-activated currents measured in single DRG neurons isolated from WT and PI3K γ KO mice. For temperature response ramps, red lines depict temperature ramp and black lines depict inward current. **(B)** Q10 as a measure of the rate of inward current changes in response to temperature. $n = 37$ for isolated WT and $n = 29$ for PI3K γ KO DRG neurons. **(C,D)** Capsaicin sensitivity of DRG neurons isolated from WT and PI3K γ KO mice. **(C)** Shows representative capsaicin responses from a single neuron. **(D)** Dose-response curves to capsaicin. The capsaicin EC50 is indicated. Numbers indicate numbers of single neurons tested with the indicated capsaicin doses at the respective data points. Electrophysiology data was generated by single neuron patch clamping. Data are presented as mean $\pm$ sem. $** p < 0.01$, $*** p < 0.001$ by Mann-Whitney u-test.

Figure 19. Flow charts for global bioinformatics analyses.

(A) Flow chart indicating the steps in the conversion of *Drosophila* candidate thermal nociception genes into mouse and human orthologs. **(B)** Flow chart indicating KEGG and C2 gene set analysis in *Drosophila*, mice, and humans. Data from all three organisms were pooled to generate a global network map. See Materials and Methods for details.

Figure 20. A global network map of thermal nociception based on primary hits without binding partners.

The systems network includes data from the significantly enriched *Drosophila* KEGG pathways and GO processes, mouse and human KEGG pathways and C2 gene sets based on analysis of primary screening hits without binding partners. Pathways, processes and gene sets that share a role in a biological process were pooled into functional classes while the underlying genes that constitute them are depicted with a connection to their respective functional class. Functional classes (brown), genes representing

hits with pain phenotype (red), and developmental lethal genes (blue) are shown in the network.

Figure 21. Basic behavioral analysis of PI3K γ KO mice.

PI3K γ expressing control and PI3K γ knock-out (KO) mice exhibit similar behavioral responses in multiple paradigms. **(A)** PI3K γ KO mice exhibit intact accuracy in a test for skilled reaching and **(B)** a slight decrease in cages crosses over a 24 hour period; but this trend failed to reach statistical significance. **(C)** In an open field test, control and PI3K γ KO mice showed the same activity over a ten minute period and **(D)** similar levels of anxiety-related defecation. **(E)** Control and PI3K γ KO mice exhibited similar coordination in the rotarod test. **(F-H)** No differences were detected between control and PI3K γ KO mice in three models of learning: **(F)** Water maze, **(G)** T-maze, and **(H)** passive avoidance learning. (n=11 for control and n=12 for KO for the above tests). **(I-J)** Basal mechanical sensation was assessed by the von Frey test; PI3K γ KO mice exhibited normal **(I)** force threshold and **(J)** latency. n=21 for WT and n=16 for KO mice. **(K)** PI3K γ KO mice also exhibited a comparable sensitivity to acetone (n=21 for WT and n=16 for KO mice). Data are presented as mean $\pm$ sem. In all experiments there were no significant differences (t-test).

Figure 22. PI3K γ KO mice show no difference in inflammatory pain responses.

(A) PI3K γ KO mice exhibit significant enhancement of baseline thermal nociception sensitivity but a comparable degree of thermal hyperalgesia following intraplantar CFA challenge. **(B)** A sensitization ratio (Baseline/CFA latency) shows similar CFA-induced sensitization in wild type (WT) and PI3K γ KO mice 10 days after CFA injection. **(C)** WT and PI3K γ KO mice exhibit similar paw swelling in response to CFA over the course of the experiment (data shown was recorded at day 8). Data are presented as mean $\pm$ sem. * $P < 0.05$, ** $P < 0.01$ by Student's t test.

Figure 23. Testing of anti-pain compounds

A: Compounds testing performed on pregabalin, cilomilast, zardaverine and roflumilast as described in Example 4.1.3.2. Data are presented as mean values $\pm$ SEM, n=8-10. Significantly

different by Mann-Whitney U test compared to T=0 paw withdrawal thresholds (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$).

B: Compounds testing performed on pregabalin, bosutinib and adefovir as described in Example 4.1.3.3. Data are presented as mean values $\pm$ SEM, $n=8-10$. Significantly different by Mann-Whitney U test compared to T=0 paw withdrawal thresholds (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$).

C: Compounds testing performed on pregabalin, dasatinib and tenofovir as described in Example 4.1.3.1. Data are presented as mean values $\pm$ SEM, $n=8-10$. Significantly different by Mann-Whitney U test compared to T=0 paw withdrawal thresholds (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$).

Figure 24: Testing of anti-pain compounds, chronic inflammatory pain model

A: Von Frey's hairs assay for Indomethacin, Dasatinib, Tenofovir. Data are presented as mean values $\pm$ SEM, $n=6-10$. Significantly different by Mann-Whitney U test. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ significantly different from post surgery withdrawal thresholds.

B: Von Frey's hairs assay for Indomethacin, Cimilast, Zardaverine, Roflumilast. Data are presented as mean values $\pm$ SEM, $n=8-10$. Significantly different by Mann-Whitney U test. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ significantly different from post surgery withdrawal thresholds.

C: Von Frey's hairs assay for Indomethacin, Bosutinib, Adefovir. Data are presented as mean values $\pm$ SEM, $n=8-10$. Significantly different by Mann-Whitney U test. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ significantly different from post surgery withdrawal thresholds.

Examples:

Example 1: Materials and Methods

Example 1.1: Fly stocks

All *UAS-IR* transgenic fly lines were obtained from the VDRC RNAi library (Dietzl et al., 2007) with the exception of $\alpha 2\delta$ second hairpins, which were obtained from the Harvard trip stocks. *elav* with *UAS-Dicer 2* was a gift from B. Dickson (Dietzl et al.,

2007). *Painless*(EP(2)2451) was a gift from D. Tracey. *Df(2R)Exel712* was obtained from the Exelixis stock collection (Thibault et al., 2004). *NP1574-Gal4* was obtained from the Kyoto Institute of Technology Drosophila Genetic Resource Center (Hayashi et al., 2002). The point mutant *stj* lines *stj*¹ and *stj*², the *stj* deficiency *Df(2R)Exel7128*, and the *stj* P[acman] rescue (*stj*⁺; 1259) flies have been previously described (Ly et al., 2008). These flies were generated by introducing a BAC containing the wild type *stj* locus into predetermined attP sites in the genome using Φ C31 integrase (Venken et al., 2009). *UAS-Lamin:GFP* was a gift from N. Stuurman. *UAS-shibire*^{ts1} and *UAS-CD8:GFP* were obtained from Bloomington.

Example 1.2:Drosophila behavioral tests

For adult thermal preference and avoidance of noxious heat ~20 four day old flies were placed in an experimental chamber (Nunc-clon dish 35mm x 10mm) sealed with scotch tape. All tests were performed in the dark. The bottom of the chamber was heated to 46°C over 15 seconds by floating on a water bath while the sub-noxious zone was measured to be 31°C at the end of the 4 minute experiment. % Avoidance was calculated by counting the number of flies that failed to avoid the noxious temperature compared to the total number of flies in the chamber. For experiments involving *UAS-shibire*^{ts1}, flies were transferred to the experimental chambers followed by a temperature shift to 30°C for 60 minutes. Larval pain assays were performed as described (Tracey et al., 2003). Since 3rd instar *stj*² mutant larvae exhibit motor defects, we only used 1st and 2nd instar *stj*² larvae and stage-matched control larvae for our experiments. Mechanosensation (Kernan score) was performed as described (Kernan et al., 1994). To set up the experimental assay and to determine a cut-off, where we would always hit *painless*, multiple control (F1 from *w1118* ♂ X virgin *elav-Gal4; UAS-DCR2* ♀) and *painless* mutant flies were tested for thermal avoidance and an avoidance histogram generated. For assessing noxious temperature-induced paralysis, wild type flies were placed in 5 ml polystyrene round bottom tubes (BD Falcon) and exposed to different temperatures (37-46°C with 1° increments) until 100% of flies were paralyzed. Basic coordination was assessed by tapping the test chamber on the bench and observing general coordination as flies move away

from the site of impact as described previously (Dietz et al., 2007).

Example 1.3: Screening procedure

For screening, transgenic males harboring a *UAS-IR* transgene were crossed with *elav-Gal-4; DCR2-Gal4* females and F1 progeny were tested for avoidance of noxious heat (46°C) in our experimental chambers. In our pilot studies, a noxious temperature of 46°C was found to give the most robust differences between control and *painless* mutant flies. Of note, 46°C is the same temperature used to identify *painless* in larvae (Tracey et al., 2003). For the screening we chose a 4 minute cut-off, based on the difference between control and *pain* mutant flies. For each fly line, ~ 20 adult flies were transferred to the experimental chambers. During retesting flies were also scored for basic coordination before testing by tapping the flies to the bottom of the test chamber after loading and assessing whether flies were slow or uncoordinated when climbing back up the wall of the chamber. For noxious heat avoidance, flies were given a choice between the noxious and non-noxious temperature and after 4 minutes, the number of flies successfully avoiding the noxious heat and the number in the noxious heat zone (which were incapacitated by assay end) were recorded to calculate percent avoidance $((\text{total} - \text{failed}) / \text{total}) \times 100$ for each test. The Z-score was generated as compared to wild type responses (*w¹¹¹⁸ x elav; DCR2*). A Z-score was generated as follows: $((\text{mean control avoidance} - \text{mean test avoidance}) / \text{standard deviation control})$. Flies failing to avoid the noxious temperature in the first round were confirmed with multiple retests. All *elav-Gal4>UAS-IR* lines with a Z-score >1.65 in the primary screen were tested an average of 6.78 independent times using second *UAS-IR* transformants. Based on previous use of this RNAi library (Dietz et al., 2007; Mumery-Widmer et al., 2009) the false positive rate is estimated at 2-7%. To decrease the number of false positives we excluded 55 hairpins with potential off-target effects (more than 6 Can repeats and/or S19 score < 0.8 was considered unspecific), leaving 622 transgenic lines corresponding to 580 candidate nociception genes (Fig. 1E).

During hit confirmation for our screen, flies were also assessed

for general coordination defects (Dietzl et al., 2007) that could potentially impede noxious thermal avoidance. In addition, to further test whether our hits had a defect that is specific to noxious thermal avoidance and/or exhibited additional alterations in innate behavioral programs (Benzer, 1967), we evaluated fly lines for general coordination by geotactic repulsion and phototactic attraction. To determine if our candidate thermal nociception hits were unable to avoid noxious heat due to increased temperature-sensitivity we assayed temperature-induced paralysis at 38°C, a system that was originally used to identify classic temperature-sensitive paralytic mutants such as *shibire* and *para* (Grigliatti et al., 1973; Siddiqi and Benzer, 1976). No significant correlations were observed between thermal nociception genes and phototactic attraction ($r^2 = 0.0026$), geotactic avoidance ($r^2 = 0.00165$), or temperature sensitivity ($r^2 = 0.005742$). Finally, to determine if our candidate pain genes are simply the result of increased temperature-induced paralysis at 46°C, we exposed pain hits to a chamber set to 46°C and recorded the kinetics of temperature-induced paralysis.

Example 1.4: Functional annotation of pain hits

Of the 580 genes corresponding to the RNAi hits with thermal nociception phenotypes, 391 genes were annotated by Gostat. To find additional information about gene-function of the remaining 189 genes, we searched three other databases for functional information associated with the *Drosophila* genes and an additional 80 genes were functionally annotated using the following tools:

1. Panther db (<http://www.pantherdb.org/>).
2. Overlap with neuronal precursor genes published by Brody T., et al. (Brody et al., 2002).
3. NCBI Gene (Gene Ontology) (<http://www.ncbi.nlm.nih.gov/gene>).

Example 1.5: Identification of fly orthologs in mouse and human.

To identify orthologs between *Drosophila* and mouse or *Drosophila* and human, we used pre-computed orthology predictions obtained from Compara r49, Homologene (03/08), Inparanoid v6.1, Orthomcl v2 (Kuzniar, et al., *Trends Genet* 24, 539 (Nov, 2008)). Since each database query outputs results using a different gene iden-

tifier, we transformed all the different identifiers to a single unique Entrez ID, for each gene. Both one-to-one, and many-to-many mappings were observed between the *Drosophila* and the mammalian genes. In cases where one *Drosophila* gene mapped to multiple mammalian orthologs, all the predicted orthologs of a given gene, were considered for further downstream analysis. In cases where a mammalian gene of interest had multiple *Drosophila* orthologs, the fly gene with highest Z-score for the corresponding RNAi hit was mapped.

Example 1.6: GO classification

Gene Ontology (GO) analysis was performed using Gostat (<http://gostat.wehi.edu.au/>). GO analysis was run with *Drosophila* genes whose RNAi hits have a Z-score >1.65. Over- or under-represented ($p < 0.1$) GO terms with corrections for multiple testing (Benjamini - Yekutieli correction) were identified and compared to all *Drosophila* genes reported in the flybase (fb). Since terms that occur at a deeper level in the GO tree hierarchy, therefore containing lesser numbers of genes, are considered more biologically informative, we discarded terms containing more than 500 genes from further analysis. Significant GO terms were manually pooled and organized into "functional groups" based on their shared roles in a biological function.

Example 1.7: Binding partner and pathway analyses. Pathway analysis was performed using the *Drosophila* Pathway database in GeneSpring GX. Briefly, the Pathway database in GeneSpring GX contains binding partners from two sources: 1. those reported in open-source public databases like BIND and IntAct (IMEX consortium) and 2. extracted from Pubmed abstracts using a proprietary natural language processing technique. The tool UI allows a query of the database to build networks of molecular relations (edges) amongst molecules (nodes) of interest. Data from the IMEX consortium only represent protein binding and promoter binding molecular interactions. Using filters in GeneSpring GX, we selected only binding molecular relations reported by the IMEX consortium to create this network, thereby including only experimentally proved physical interactions between the corresponding protein molecules.

Example 1.8: Hypergeometric enrichment test. A hypergeometric test, similar to the test used for GO enrichment analysis, was used to identify over-represented gene lists (C2 from Msigdb, BROAD Institute) and pathways (KEGG) amongst the pain hits. The hypergeometric test considers only the percentage representation of genes corresponding to a biological pathway in the pre-computed pain gene list. This analysis was performed on the gene list identified as mouse or human orthologs corresponding to adult pain hits (Z-score > 1.65) in *Drosophila*.

Example 1.9: Generation of a systems map. For the combined systems map, significant KEGG pathways, C2 gene sets and selected GO functional categories were manually grouped into uniform functional categories. Functional categories chosen for depiction were selected relevant to the biology of pain function. The complete list of functional categories is available in tables S4 and S5. Of these, 37 functional categories were chosen for construction of the systems map. For each functional category, the corresponding genes that mapped to the KEGG pathways, C2 gene sets and GO term, included in the category were extracted. *Drosophila* orthologs for these genes were found and assigned to the category and visually represented into a systems map. For the construction of *Drosophila* KEGG pathway systems map, pathways rendered over 90% enriched by GSA analysis, were manually annotated into functional categories. Pain hit genes and their binding partners that belong to any pathway were extracted and assigned to the appropriate higher level functional category. Data was represented as a systems map connecting these functional categories.

Example 1.10: Gene set analysis (GSA)

GSA uses lists of genes from biological pathways or processes, to find if the pathway or the process as a whole has been significantly altered by the experimental treatment. A null hypothesis is that "genes of a functionally irrelevant pathway are not clustered at the top of a rank ordered (based on Z-score) list of all genes in the experiment". The rank order list of 11293 unique genes with Z-scores was obtained from our screen assaying a total of 16051 UAS-IR transformants. Individual gene lists were constructed corresponding to 146 *Drosophila* KEGG pathways

and 45 significant GO terms (corrected $p < 0.1$). Binding partners were identified in yeast-2-hybrid screens reported in the bio-molecular interaction network database BIND, i.e. binding partners experimentally confirmed to interact with the candidate thermal nociception genes. An enrichment score (Es) for a gene list (s) was calculated based upon the pain Z-score using the formula:

$$Es = \frac{\text{sum of average Z-scores of all genes in s}}{\sqrt{\text{(Number of genes in s)}}}$$

For every s, 100 bootstrap permutations were carried out to generate random functionally unrelated gene lists of the same size and their enrichment scores calculated as E_r . A gene set s is considered significant ($p < 0.1$) if $E_s > E_r$ (90th quantile). This GSA approach removes any bias artificially created by the ad-hoc Z-score cut-off > 1.65 .

Example 1.11: Imaging of nuclei and axonal projections in *Drosophila*

Brains and ventral nerve cords from *stj-Gal4>UAS-Lamin:GFP* and *stj-Gal4>UAS-CD8:GFP* fly lines were dissected in PBS, fixed in 4% paraformaldehyde in PBS for 30 min at room temperature (RT), washed three times for 10 min in PBS containing 0.3% Triton X-100, blocked for 1 hr at RT in PBT containing 5% normal goat serum, and incubated with primary anti-GFP (Invitrogen) and NC82 (Iowa hybridoma bank) counterstaining antibodies in blocking solution overnight at 4 C. Samples were washed three times for 10 min in PBT at RT, and secondary antibodies were applied in blocking solution for 2 hrs at RT. After washing three times for 10 min in PBS, samples were mounted in Vectashield (Vector Labs). Alternatively, to stain for STJ, adult brains were dissected in Grace's Insect Medium, fixed in 4% formaldehyde in PBS with 1% Triton X-100 (PBS/Tx), rinsed 2 times in 0.3% PBS/Tx and washed 2 times in 0.5% PBS/Tx for 15 min. Samples were blocked overnight at 4 C in 5% NGS with 0.1% PBS/Tx and the primary antibodies were incubated 3 days at 4 C in block solution. Samples were washed as was done after fixation and incubated with the secondary antibodies at 4 C for 2 days. Then samples were washed as before with the final wash step in PBS before being transferred to 50% PBS/glycerol and then mounted. Antibodies against STJ were raised in either rabbit (HH129) or guinea pig (125 or

127). Confocal images were captured on a Zeiss LSM510 Meta, Axi-overt 200 M, and processed with LSM510 Image Examiner. For larval imaging, *stj-GAL4* was crossed to UAS-mCD8:GFP. Larvae raised at 22°C were dissected in modified HL3 solution (110 mM NaCl, 5 mM KCl, 10 mM NaHCO₃, 5 mM HEPES, 30 mM sucrose, 5 mM Trehalose, and 10 mM MgCl₂) (pH, 7.2) and fixed in 3.7% formaldehyde. Stainings were performed using standard protocols described (Verstreken et al., 2003). Images were captured using a Zeiss 510 confocal microscope (Carl Zeiss, Inc.) using a Plan Neofluar 40x, 1.3 N.A. objective and processed with LSM Image Browser 4.2 (Carl Zeiss, Inc.). Primary antibodies to GFP (rabbit, chicken, Abcam used 1:500) and FUTSCH were diluted 1:200. STJ antibodies were all diluted to 1:100. Secondary antibodies tagged with Alexa 405, Alexa 488, Alexa 568 (Invitrogen) or Cy3 were used at 1:200. In situ hybridizations on adult flies were performed as previously described (Couto et al., 2005).

Example 1.12: Generation of $\alpha 2\delta 3$ knock-out mice

For gene targeting of $\alpha 2\delta 3$ in mice, a targeting vector was inserted into exon 15 of the murine $\alpha 2\delta 3$ gene. The linearized construct was electroporated into embryonic stem (ES) cells derived from the 129/OlaHsd mouse sub-strain. Correctly targeted ES cell clones were confirmed by Southern blotting and used to generate chimeric mice. Germline transmitted F1 mice were backcrossed to C57BL/6 females. All behavioral and fMRI studies were conducted in accordance with guidelines of the European Union Council (86/609/EU) and following Austrian regulations for the use of laboratory animals.

Example 1.13: Physical examinations

A physical examination of $\alpha 2\delta 3$ mutant and control mice to assess general characteristics such as activity, behavior towards siblings, posture, grooming, breathing patterns and movement, abnormal discharge, malformations was performed. A step-wise necropsy exam was then performed to identify potential lesions and abnormalities in all organs. Harvested organs were fixed, paraffin-embedded, sectioned, stained using hematoxylin and eosin, and then assessed for possible histopathologies.

Example 1.14: Serum chemistry and hematology

Blood samples were collected by terminal cardiac puncture and serum was assessed for electrolytes, inorganic ions, lipid profile, glucose and creatine kinase, and basic markers of renal and kidney functions. Serum data were assayed in a Hitachi 912 automatic analyzer. Whole blood smears were stained with Wright's Stain in order to perform a differential leukocyte count.

Example 1.15: Behavioral experiments

For the hot plate assay, age and sex-matched wild type and $\alpha 2\delta 3$ mutant mice were acclimated to the hot plate apparatus (Ugo Basile, Comerio, Italy) and then tested for hot plate latency at 50-56°C. Jumping, biting, licking, and clutching of hind paws was considered a nociceptive response as described previously (Jourdan et al., 2001). For the tail-flick test, a light beam was focused onto the tip of the tail, and the latency to tail withdrawal was taken as a measure of the nociceptive threshold to radiant heat. The mechanical pain test was performed by applying an ascending series of noxious von Frey hairs to the dorsal surface of each hindpaw until a hindlimb withdrawal response was observed (Whishaw et al., 1999). Inflammatory thermal hyperalgesia was produced in the mouse right hind paw by intraplantar injection of Complete Freund's Adjuvant (CFA) (20 μ l of a solution containing 5 mg of CFA in 10 ml of a 1:1 emulsion of saline and mineral oil). Before and after CFA injection, nociceptive responses to heat were measured using the hot-plate test (54°C). To evaluate the inflammatory response elicited by CFA, paw swelling was measured using a spring loaded caliper (Mitutoyo, Japan). The rotarod test was used to evaluate basic coordination and balance. Mice were placed on a smooth rod that acts as a rotating treadmill (AccuScan Instruments, Columbus, Ohio). The rotarod rotates slowly at first and then progressively increases in speed. Mice were tested three times and the fall speed was recorded. Moreover, mice were evaluated for their response to a novel environment using an open field test (MED Associates, St. Albans, Vermont). Briefly, each animal was placed in the center of its assigned chamber. Activity of individual mice was monitored by photo-beam breaks and recorded for the ten minute test session. Mice were assessed for a "depression" phenotype using the tail suspension assay (MED Associates, St. Albans, Vermont).

Each mouse was suspended from a metal hanger such that the end of the hanger is $1/8^{\text{th}}$ of an inch or less from the base of the tail. Total times of immobility were recorded during a 6 minute period.

Example 1.16: Further mouse behavioral tests

PI3K γ knock out (*T. Sasaki et al., Science* **287**, 1040 (Feb 11, 2000) and kinase dead knock in (*E. Patrucco et al., Cell* **118**, 375 (Aug 6, 2004)) mice are described.

Baseline thermal and mechanical sensitivities were assessed using the Hargreaves and von Frey test (Ugo Basile Biological Research Apparatus Co., Comerio, Varese - Italy) following acclimation with the test apparatus. For paw withdrawal latencies, responses were determined by testing left and right paws. The hot plate test was done using a microprocessor-controlled unit (Ugo Basile). For initial phenotyping, WT and PI3K γ KO littermates were used. For subsequent tests, PI3K γ KO mice were backcrossed >8 times to C57B6 mice and compared to sex and age matched wild type C57B6 controls. Inflammatory pain was induced by intraplantar injection of Complete Freund's Adjuvant (CFA) (20 μ l of a solution containing 5 mg of CFA in 10 ml of a 1:1 emulsion of saline and mineral oil) and behavior was tested on a hot plate as above. Paw swelling indicative of inflammation was evaluated by use of a spring loaded caliper (Mitutoyo). Capsaicin behavior was assessed by time spent licking over 5 minutes following intraplantar injection of capsaicin (3 μ g in 10 μ l; dissolved in 5% ethanol, 5% Tween-80 and 90% saline; Sigma). For acetone-induced cold pain, a drop (50 μ L) of acetone was placed against the centre of the plantar surface of the hindpaw and responses were recorded (*I. Racz et al., J Neurosci* **28**, 12125 (Nov 12, 2008)). Other behavioral test were as described previously. Briefly, for skilled reaching task, each mouse was placed on a restricted diet and conditioned in the reaching box for 5 days. On the 6th day mice were placed in the reaching box and reaching was scored for 5 minutes beginning with the first attempt. For circadian activity, mice were individually housed in cages with photosensors. The mice were monitored for 24 hours with a 12/12 light dark cycle and the number of cage crosses was recorded. For open field activity, mice were individually housed in clear plastic cages with infrared sensors and left for 10 minutes in

conditions of low noise and dim light. Total horizontal activity was tracked and fecal pellets were counted at the end of the test. For rotorod, mice were trained for 3 days at very low speed and then tested while gradually increasing rotation speed. Mean latency on rod was recorded. For water maze, a 1.2 diameter milk pool was used with a 14 X 14 cm stationary platform hidden 7 mm beneath the liquid surface. Mice were placed in the pool in randomized quadrants and given 60 seconds to locate the safe platform. At the end of each trial mice that failed to locate the platform were placed on it for 10 seconds. After 14 trials over 7 days, the platform was moved to a new quadrant. Mean latency to find the platform is presented. For T-maze, mice were placed in a T shaped maze with one arm of the maze blocked off. On the second day the blocked arm was opened, and time spent in the new area was recorded. For passive avoidance, mice were placed in a clear plastic box with metal bars wired to distribute 0.12 milliamps built into the base. A black plastic platform was fixed in the center of the box. Mice were placed in the black "safe" platform, and when they step from the platform they were given a 1 second shock, and then removed from the apparatus. This process was repeated until mice no longer step from the safe platform.

Example 1.17: Bone marrow transplantations. Six to eight week-old recipient mice underwent a lethal total-body irradiation (1000 Rad). Freshly isolated donor bone marrow cells were then injected into syngenic recipient mice (5×10^6 cells per mouse) 24 hours after irradiation. PCR analyses of blood cells and tail DNA indicated that ~ 95% of blood circulating leukocytes were of donor origin.

Example 1.18: Western blotting

Electrophoresis and Western blotting were performed using the Invitrogen Novex Mini-cell system as per the manufacture's instruction. Membranes were blocked with 5% milk powder in PBS. Primary antibodies were diluted in PBS/Tween/BSA. The following primary antibodies were used: mouse anti-Actin, dilution 1/1000 (Sigma); goat anti- $\alpha 2\delta 1$, dilution 1/500, (Everest Biotech Oxfordshire, UK), and rabbit anti- $\alpha 2\delta 3$, dilution 1/500. To generate the anti- $\alpha 2\delta 3$ antibody, rabbits were immunized with the pep-

tide VSERTIKETTGNAC conjugated to KLH. Serum was affinity purified against the immobilized peptide. Secondary antibodies were used at a dilution of 1 in 5000 (Promega, Madison, Wisconsin).

Example 1.19:LacZ expression

Since our $\alpha 2\delta 3$ knock-out mice carry a LacZ reporter, we used β -Gal staining as a marker to assess $\alpha 2\delta 3$ expression. Tissues from 7-12 week old heterozygote mice were analysed for LacZ expression. Organs from these mice were frozen, sectioned (10 μ m) and analysed for LacZ expression using X-Gal staining followed by Nuclear Fast Red counterstaining. For whole mount brain staining, the brain was cut longitudinally, fixed, and stained using X-gal. The reaction was stopped with a PBS wash and then fixed with buffered formaldehyde. In addition to staining in the brain (Fig. 6A), moderate LacZ staining was detectable in some spermatogenic cells of the seminiferous tubules. LacZ expression was not detected in the sciatic nerve, eyes, Harderian glands, thymus, spleen, lymph nodes, bone marrow, aorta, heart, lung, liver, gallbladder, pancreas, kidney, urinary bladder, trachea, larynx, esophagus, thyroid gland, parathyroid gland, pituitary gland, adrenal glands, salivary glands, tongue, skeletal muscle, skin and female reproductive system.

Example 1.20:DRG neuron cultures

Lumbar dorsal root ganglia (DRG) with the cell bodies of primary afferents that project into the hind paw were harvested from adult C57BL/6J mice, treated enzymatically with Liberase Blendzyme1 (Roche) and trypsin (Invitrogen), and dissociated mechanically with a fire-polished Pasteur pipette as previously published (Obreja et al., 2002; Obreja et al., 2005). The resulting cell suspension was washed, plated on glass coverslips coated with poly-L-lysine/laminin (Sigma) and cultivated in synthetic serum-free medium (supplemented TNB™, Biochrom, Vienna) at 37°C in 5% CO₂.

Example 1.21:Patch clamp recordings

Using the whole-cell voltage-clamp configuration of the patch-clamp technique, ionic currents and membrane potentials were recorded from isolated neurons after 16-24 hours at room temperature as previously published (Obreja et al., 2005; Obreja et

al., 2002). Currents and the membrane potential recorded using an EPC10 (HEKA, Germany) and the Pulse v8.74 software (HEKA). Borosilicate glass micropipettes (Science Products, Hofheim, Germany) pulled with a horizontal puller (Sutter Instruments Company, Novato, CA, USA). For calcium current recordings the extracellular solution was composed of (mM); 130 NMDG, 20 TEACl, 5 CsCl, 2 CaCl₂, 1 MgCl₂ (Sigma), 10 HEPES and 20 Glucose (Merck) and adjusted to pH 7.3 with HCl (Merck). The intracellular solution contained 120 CsCl, 20 TEACl, 10 EGTA, 2 MgATP (Sigma), 10 HEPES and 20 Sucrose (Merck) adjusted to pH 7.3 with CsOH (Merck). Calcium currents were evoked by test potentials from -80 to 60 mV in 10mV steps from a holding potential of -80mV and digitized at 50 kHz. All recorded traces were corrected for leakage and capacitive currents using a P/5 protocol. The individual recorded Calcium IV-plots were fitted with a modified Boltzmann equation with a high-voltage block.

$$I = \left(\frac{G}{1 + \exp\left(\frac{-V - V_h}{S}\right)} \right) * \left(\frac{1}{1 + \exp\left(\frac{V - B_h}{B_s}\right)} \right) * (V - V_r) + A$$

The conductance (G) is dependent on the amount and subtypes of Ca²⁺ channels that are present in the cell. The activation is determined by the half-maximal activation of the Ca²⁺ current (V_h) and the e-fold change around V_h (S) in the IV. Voltage-dependent block of the Ca²⁺ current at high voltages is described by the maximal speed of the blockage (B_s) at the half-maximal voltage of the block (B_h). The reversal of the current is determined by the reversal potential (V_r). All data were analyzed in Origin 7.0 (OriginLab).

Alternatively, for PIK3CG, the following protocol was used: Using the whole-cell voltage-clamp configuration of the patch-clamp technique, ionic currents were recorded from isolated DRG neurons at -80 mV holding potential as previously published (Obreja et al., 2005; Obreja et al., 2002). The external solution (ECS) contained (in mM) 145 NaCl, 5 KCl, 2 CaCl₂, 1 MgCl₂ (all Sigma), 10 glucose and 10 HEPES (Merck), at pH 7.3 adjusted with NaOH. Borosilicate glass micropipettes (Science Products, Germany) were filled with internal solution (ICS) containing (in

mM) 138 Caesium methanesulfonate, 2 MgCl₂, 2 Na₂-ATP, 0.2 Na-GTP, 0.5 CaCl₂, 5 EGTA (all Sigma) and 10 HEPES (Merck), at pH 7.3 adjusted with CsOH (Merck). After filling, electrode resistance was 3-5 MW. Currents were filtered at 2.9 kHz, sampled at 3 kHz and recorded using an EPC 9 and the Pulse v8.74 software (HEKA). Experiments were performed at room temperature and only one neuron was tested per Petri dish. An automated seven-barrel system with common outlet next to the cell under investigation (<100 µM) was used for fast drug administration and heat stimulation (*Dittert et al., J Neurosci Methods* **82**, 195 (Aug 1, 1998)). Capsaicin was applied at different concentrations (0.001, 0.01, 0.1, 0.5, 1.0, 5.0 and 10 µM; Sigma; 1 mM stock solution solved in ethanol) for 10 seconds each. Heat-activated inward currents (I_{heat}) were elicited by applying ramp-shaped heat stimuli at 120 s intervals with linear temperature increases from 25 to 50-55°C within 5 seconds. Current values were sampled at the rising phase of the temperature ramp, normalized to 24°C (bath temperature) and data represented as an Arrhenius plot (*Vyklicky et al., J Physiol* **517** (Pt 1), 181 (May 15, 1999)). The temperature co-efficient Q_{10} was used to characterize temperature dependence of the membrane. In the linear range, the activation energy E_a was determined from the slope of the regression line ($r > 0.99$) using the formula:

$$-E_a = 2.303R \log_{10} (I_2/I_1) / ((1/T_2) - (1/T_1))$$

R gas constant (8.314 JK⁻¹mol⁻¹)

I_1 current at lower absolute temperature T_1

I_2 current at higher absolute temperature T_2

The $T_{\text{threshold}}$ was determined from the point of intersection of the two regression lines.

Q_{10} was calculated using the equation: $Q_{10} = \exp(10E_a/(RT_1T_2))$.

Example 1.22: fMRI and BOLD imaging

Male mice were anesthetized with isoflurane and placed on a cradle inside the MR machine (Bruker BioSpec 47/40 (200mT/m) with a free bore of 40 cm, equipped with an actively RF-decoupled coil system and a quadrature head coil) under extensive physiological monitoring (respiration, temperature, heart function). The contact heat stimuli (40°C, 45°C, 50°C, and 55°C, plateau for 5 sec after 15 sec of heat increase) were applied at the right hind paw (presented at 3 min 25 s intervals, 3 time each temperature)

using a custom made computer controlled Peltier heating device with no influence from and to the MR scanner. For tactile stimulation, the C1 vibrissa of the mice was moved with an air driven device integrated into cradle shifting the vibrissa by an inverted comb with an amplitude of 5 mm at 7 Hz. For the resting state measurement a series of 300 sets of functional images (matrix 64 x 64, field of view 15 x 15 mm, slice thickness 0.5 mm, axial, 22 slices) were collected using the Echo Planar Technique (EPI, single shot: TR = 2000 ms, TE_{ef} = 24,38 ms) within a 10 min recording period. Next a set of 750 functional EPI images were acquired with two times k-space averaging resulting in a TR of 4000 ms and a total measuring time of 50 min. Finally, 22 corresponding anatomical T2 reference images (field of view 15 x 15 mm, matrix 256 x 128, TR = 2000 ms, slice thickness 0.5 mm, TE_{ef} = 56 ms, RARE) were assembled. Functional analysis was performed using Brain Voyager QX and our own software MagNan (Knabl et al., 2008). In brief, the following preprocessing was performed: Motion correction algorithm as implemented in BrainVoyager was applied (trilinear interpolation, motion detected always below 1 pixel). Slice time correction was performed with a Cubic Spline, followed by a high pass temporal filtering (9 cycles) and a 2D Gaussian smoothing of the data (FWHM kernel: 2 pixel, in-plane direction). Next a GLM analysis with separate predictors for each stimulation temperature was calculated. To detect significantly activated voxels statistical parametric maps (SPM) of these contrasts were generated for individual animals and FDR thresholded ($q = 0.05$, two sided). Different groups of significant activated voxels ($n > 4$) were labeled belonging to certain brain structures based on the mouse atlas from Paxinos (second edition). The corresponding peak activity was determined for each stimulation temperature based on the stimulus specific GLM predictors. The mean activity of each activated brain structure was averaged across all significant activated voxels and subjected to a statistical t-test comparing $\alpha 2\delta 3$ mutant and control mice. A second level random effect analysis variance (ANOVA) was performed for Z-score maps between the different mice genotypes. Areas of significant group activation differences (corrected $P < 0.05$) were used as masks to only show the calculated peak activation maps in these regions (Fig. 7A).

To find brain areas which exhibit the most robust response differences between $\alpha 2\delta 3$ mutant and control mice, we performed a correlation based principal component analysis (PCA) of BOLD responses with temperature specific input vectors (activation probability, volume and peak height, time, symmetry, and width) per identified brain structure. We then calculated within the coordinate space of the first 3 principal components (88.85 % of total variance) the Euclidian distance for all pre-defined defined pain regions between $\alpha 2\delta 3$ mutant and control mice. Because the PCA vectors span a coordinate space optimized to cover the variance of the input vectors, large Euclidian distances indicate large differences in response properties between control and $\alpha 2\delta 3$ mutant mice for a given brain structure. Largest Euclidian distances were observed for the caudate putamen (left) and the primary somato-sensory cortex (left). Enlarged distances were also found for the ventral tegmental area (VAT, left), the primary (right) and secondary (left) somatosensory cortex, the insula (right), entorhinal cortex (left), hippocampus (right) and motor cortex (left). The lowest Euclidian distances were found for the "sensory input" and thalamus, indicating highest similarity between control mice and $\alpha 2\delta 3$ mutants in heat-induced activation of these brain structures. Minimally 1 day after recovery from the functional experiments the mice obtained a single manganese injection (isotonic and neutral MnCl_2 solutions: 0.4 mmol/kg, ip). 24h after the MnCl_2 injection the DTI and MEMRI measurements were performed using the same scanner and coil system as mentioned previously. First we measured the DTI using an EPI SpinEcho approach (TE_{eff} : 31.6, TR 5000 ms, Bandwidth: 150 kHz, segments: 1, NEX: 2, 126 diffusion directions and maximal B-value of 600.00 s/m² and total measuring time of 21min50s). Geometrical scan properties were matrix: 128x128, slices: 15 with 1.0 mm thickness, field of view: 18 x 18 mm. Fractional anisotropy maps were calculated using the Bruker PV 5.0LP3 software version and after segmentation and affine registration of the individual brains they were subjected to a voxel-wise Student's t-test. For imaging of the T1 contrast of manganese uptake we used a modified driven equilibrium Fourier transform sequence (MDEFT, scan parameters: TR=15.00 ms, TE=5.1 ms, Bandwidth: 25kHz; FA=15°, inversion delay (ID)=1000 ms and four segments. The ID of the MDEFT preparation (responsible for the

T1 contrast) was optimized for the contrast to noise ratio 24 h after MnCl₂ administration. The geometric parameters of the 3D scans were: matrix: 256x256x64, field of view = 22x22x19.84 mm. 10 averages resulted in a total measuring time of 5h41min20s. Again the after segmentation and registration, voxel based Student's t-test were performed to assess potential differences in basal neuronal activity. The functional connectivity was assessed by thresholding the correlation-matrix at such a value that every node (brain structure) has at least one edge (connection). Now the total amount of connections were calculated over all structures of the somato-sensory pain matrix.

Example 1.23: SNP of a2d3 mapping in humans

We genotyped 5 single nucleotide polymorphisms (SNPs) spaced evenly through *a2d3* using the 5' exonuclease method (Tegeder et al., 2006). *a2d3* haplotypes were identified using the SAS/genetics software package (SAS Institute, Inc.), which implements a modified expectation-maximization algorithm to reconstruct haplotypes from population genotype data. Linkage disequilibrium between SNPs was used to describe the non-independence of alleles. The PCR reaction mixture consisted of 2.5 ml Master Mixture (Applied Biosystems), 100 nM detection probe for each allele, 900 nM forward and 900 nM reverse amplification primers, and 20 ng genomic DNA in a total reaction volume of 25 µl. Amplification and detection were performed with an ABI Prism 7700 Sequence Detection System. Allele-specific signals were distinguished by measuring endpoint 6-FAM or VIC fluorescence intensities at 508 nm and 560 nm, respectively, and genotypes were generated using Sequence Detection System Software Version 1.7 (Applied Biosystems, CA). Genotyping error rate was directly determined by re-genotyping 25% of the samples, randomly chosen, for each locus. The overall error rate was < 0.005.

Example 1.24: SNP mapping of the *PIK3CG* locus.

We genotyped 5 single nucleotide polymorphisms (SNPs) spaced through the *PIK3CG* locus using the 5' exonuclease method. *PIK3CG* haplotypes were identified using the SAS/genetics software package (SAS Institute, Inc.), which implements a modified expectation-maximization algorithm to reconstruct haplotypes from popu-

lation genotype data. Linkage disequilibrium between SNPs was used to describe the non-independence of alleles. The PCR reaction mixture consisted of 2.5 ml Master Mixture (Applied Biosystems), 100 nM detection probe for each allele, 900 nM forward and 900 nM reverse amplification primers, and 20 ng genomic DNA in a total reaction volume of 25 ml. Amplification and detection were performed with an ABI Prism 7700 Sequence Detection System. Allele-specific signals were distinguished by measuring endpoint 6-FAM or VIC fluorescence intensities at 508 nm and 560 nm, respectively, and genotypes were generated using Sequence Detection System Software Version 1.7 (Applied Biosystems, CA). Genotyping error rate was directly determined by re-genotyping 25% of the samples, randomly chosen, for each locus. The overall error rate was < 0.005.

Example 1.25: Human genetic studies in healthy volunteers

We genotyped 189 (for *a2d3*) and 192 (for *PIK3CG*) normal volunteers who had previously been phenotyped for ratings of experimental pain (Diatchenko et al., 2005). Included subjects were all pain-free Caucasian females 18-34 years of age taken from a larger prospective cohort study designed to examine putative risk factors for the development of temporomandibular joint disorder (TMJD). All subjects gave informed consent following protocols approved by the UNC Committee on Investigations Using Human Subjects. Volunteers were phenotyped with respect to their sensitivity to 16 experimental pain procedures corresponding to multiple pain modalities, including pressure pain, ischemic pain, and temporal summation of heat pain (i.e., windup). Heat sensitivity measures were obtained with a 10 mm diameter computer-controlled contact thermal stimulator placed on the skin of the forearm. We used principal components analysis (PCA), as performed by the SAS statistical package (version 9.1, SAS Institute, Cary NC), as a data reduction exercise. From our raw pain scores, we derived a thermal windup score (Factor 3).

Example 1.26: Chronic lumbar root pain

We collected DNA from 169 (for *a2d3*) and 160 (for *PIK3CG*) Caucasian adults who participated in a prospective observational study of surgical diskectomy for persistent lumbar root pain (Atlas et al., 2001). The primary endpoint was persistent leg

pain over the first postoperative year, using four 'leg pain' variables normalized to Z-scores with mean 0 and standard deviation 1. The primary pain outcome variable for each individual was the mean of these four Z-scores. Genotype-phenotype associations for each SNP were sought by regression analysis. The covariates were a number of demographic, psychological and environmental factors, including sex, age, worker's compensation status, delay in surgery after enrollment and Short-Form 36 general health scale. Stepwise regression (Zaykin et al., 2002) was applied to assess the association between pain scores and haplotypes with frequencies >1%, obtained from the Ensemble database v.38. These haplotypes accounted for 94% of chromosomes studied. If a haplotype was identified to be significantly ($P < 0.05$) associated with pain scores, phenotype-diplotype association analysis was performed by regression analysis. The collection of DNA and genetic analyses were carried out with the approval of the National Institute of Dental and Craniofacial Research institutional review board and informed consent was obtained from all subjects.

Example 1.27: Statistical analyses

For analysis of adult heat-dose avoidance responses between control and painless flies (Figure 1B), a two way ANOVA was performed, followed by Tukey's post hoc test. For analysis of adult *Drosophila* avoidance response and RNAi knock down efficiency (Figure 2B-C) a Student's t test (with correction for multiple comparison) was performed. For analysis of larval pain behavior (Figure 3B and Figure S3A) we have performed the Kruskal-wallis non-parametric test for median comparison followed by the Dunn's post-hoc test. For mouse behavior, a Student's t test was used. For fMRI, the mean activity of each activated brain structure was averaged across all significant activated voxels and subjected to a statistical t-test comparing $\alpha 2\delta 3$ mutant and control mice. At the second level group analysis a standard analysis of variance (ANOVA) was performed for Z-score maps between the different mice genotypes. Areas of significant group activation differences ($P < 0.05$) were used as masks to only show the calculated peak activation maps in these regions. For human chronic pain phenotype, genotype-phenotype associations for each SNP were sought by regression analysis. The covariates

were a number of demographic, psychological and environmental factors, including sex, age, worker's compensation status, delay in surgery after enrollment and Short-Form 36 general health scale. Linear regression was also used for the quantitative sensory testing associations in normal adult females, without covariates. For patch clamping studies, data were statistically analyzed by either Mann Whitney U Test for unpaired and Wilcoxon Signed Rank Test for paired comparisons. Unless otherwise indicated, data are represented as mean values $\pm$ sem.

Example 2: Preliminary results

Example 2.1: Genome-wide screen for thermal nociception

To identify genes required for nociception, we developed a high throughput behavioral assay to determine the response of adult *Drosophila* to noxious heat as a stimulus. When exposed to a surface at a constant temperature of 25°C, flies distribute evenly in the experimental chamber, but when given a choice between a noxious (46°C) and non-noxious (31°C) surface, flies rapidly avoid the harmful temperature (Fig. 1A,B). *painless* mutant flies respond normally to sub-noxious temperatures ($\leq 39^\circ\text{C}$), but fail to avoid noxious heat (46°C) (Fig. 1B). Thus, adult flies can rapidly avoid noxious heat, and this complex innate behavior is dependent on *painless*.

Using this assay, we performed a genome-wide behavioral screen using the Vienna global *Drosophila* RNAi library (Dietzl et al., 2007). The pan-neuronal specific *elav-Gal4* driver line was crossed to flies containing *UAS-IR* (IR, inverted repeat) transgenes covering the expressed genome (Fig. 1C). Testing control flies ($n = 1706$) over many different days revealed that the vast majority avoided the noxious surface, with a mean avoidance response of 92 ± 6.4 % SD, whereas *painless* mutants ($n = 1816$) exhibited a markedly reduced avoidance response (51 ± 9.97 % SD). Based on these data, we set our primary cut-off at the 95 percentile of probability, corresponding to a Z-score of > 1.65 (Fig. 1C). At this threshold, we consistently observed impaired thermal nociception in *painless* mutant flies.

To identify novel genes regulating pain, we tested 16051 *elav-*

Gal4>UAS-IR combinations targeting 11664 different *Drosophila* genes (82% of the *Drosophila* genome version 5.7) for effects on noxious temperature avoidance (Fig. 1D; Fig. 8B). Positive hits were retested, and 622 specific transgenic UAS-IR lines corresponding to 580 genes were identified as candidate thermal nociception genes (Fig. 1E). Approximately 9% of the neuronal *elav-Gal4* driven *UAS-IR* lines were lethal, yielding no or few progeny (Fig. 1E). Gene Ontology (GO) and GO gene set enrichment analysis of the total screen data (Fig. 8C-D) showed a significant enrichment of genes involved in ATP synthesis, neurotransmission and secretion. We further annotated 80 nociception hits with previously unknown functions. These genes are CG10095, CG10096, CG10098, CG10158, CG10481, CG11033, CG11456, CG11577, CG11586, CG11590, CG11592, CG11820, CG11967, CG12004, CG12334, CG12785, CG12797, CG13096, CG13162, CG13623, CG1371, CG14351, CG14442, CG14514, CG14980, CG16725, CG16854, CG1804, CG18088, CG18130, CG18213, CG18249, CG18480, CG1968, CG2052, CG2747, CG30005, CG31103, CG31267, CG31955, CG3213, CG32150, CG3224, CG32792, CG33346, CG3996, CG4110, CG4351, CG4477, CG4946, CG5516, CG5565, CG5819, CG5969, CG5986, CG6136, CG6294, CG6340, CG6553, CG6583, CG6637, CG6724, CG6852, CG6901, CG7006, CG7042, CG7175, CG7358, CG7376, CG7556, CG7728, CG7800, CG8233, CG8325, CG8436, CG8771, CG9067, CG9288, CG9636, CG9650. These genes, as well as their orthologue counterparts, in particular human orthologs, or their respective gene products are preferred targets for therapy according to the present invention. KEGG pathway analyses of the primary thermal nociception hits and their respective binding partners revealed significant enrichment for oxidative phosphorylation, amino acid and fatty acid metabolism, ubiquitin-mediated proteolysis, and various signaling pathways such as Wnt, ErbB-, hedgehog-, JAK-Stat-, Notch-, mTOR, or TGF β signaling. Thus, our nociception screen and the subsequent bioinformatic analyses have revealed multiple genes and pathways that relate to the expression of an innate nociceptive behavior, many of which had no previous functional annotations.

Example 2.2: *straightjacket* is a novel thermal nociception gene in *Drosophila*

One of the genes that we picked up in this screen was *straight-jacket* (CG12295, *stj*), a member of the $\alpha 2\delta$ family of genes that

function as subunits of voltage-gated Ca^{2+} channels (Fig. 2A) and control the function and development of synapses. The fly *stj* ortholog in mammals is $\alpha 2\delta 3$, a close homolog of $\alpha 2\delta 1$ which is the molecular target of gabapentin and pregabalin, widely used analgesics for neuropathic pain in humans.

We confirmed that *stj* is required for noxious heat avoidance in adult *Drosophila* using a second independent hairpin (Fig. 2B). The two *stj* hairpins resulted in about 90% and 60% reduction of *stj* mRNA expression, respectively (Fig. 2C). Importantly, when flies were exposed to 46°C without given a choice to escape, *stj* knock-down did not alter the kinetics of temperature-induced paralysis (Fig. 2D), indicating a specific deficit in the nociception response. Of note, *stj* knock-down had no overt effect on brain morphology (Fig. 9A). Using a *stj-Gal4* line (Ly et al., 2008) driving *UAS-Lamin:GFP* to mark nuclei (Stuurman et al., 1999), we found GFP expression primarily in neurons in the pars intercerebralis and surrounding the subesophageal ganglion (Fig. 2E; Fig. 9B). *stjGAL4>UAS-CD8:GFP* labeling of axons (Lee and Luo, 1999) revealed broad projections throughout the central brain (Fig. 2E; Fig. 9B). Using antibodies raised against the *Drosophila* STJ protein, we confirmed STJ expression in *stjGAL4>UAS-Lamin:GFP* positive cells of the pars intercerebralis (Fig. 2F). We also found GFP⁺ nuclei and projections in the ventral nerve cord (VNC) and ascending/descending axons from the VNC that innervate the central brain (Fig. 9C). *stj*-specific *in situ* hybridization revealed *stj* transcripts in the sensory organ (sensilla) of the leg (Fig. 2G) indicating expression in the peripheral and central nervous system of the fly. Further studies are required to fine map the site of *stj* action in the *Drosophila* pain circuit.

We next assessed whether *stj* also controls thermal nociception in the larval heat pain paradigm (Tracey et al., 2003). In larvae, we found expression of *stj-Gal4>UAS-CD8:GFP* in multidendritic sensory neurons (Fig. 3A). Pan-neuronal knock-down of *stj* (*UAS-stj-IR x elav-Gal4*) abrogated the larval response to noxious heat to an extent even greater than *painless* (Fig. 3B). Larvae carrying a *stj* point mutation and the *stj* point mutation over a corresponding deficiency (*stj/def*) also exhibited im-

paired thermal nociception. The extent of the defective thermal pain response was greater at higher temperatures (Fig. 10A). Restoring a functional copy of *stj* using the P[acman] system (Venken et al., 2009) rescued the thermal nociception defects in *stj*² mutant larvae, confirming the requirement for *stj* in this behavior (Fig. 3B; Fig. 10A). *stj*² mutant larvae showed wild-type responses to non-noxious touch (Kernan et al., 1994), indicating that these larvae are capable of responding to innocuous stimuli (Fig. 10B). Collectively, these data show that *stj* is required for avoidance of noxious heat in *Drosophila*, confirming the accurateness of the genetic screen.

Example 2.3: Thermal analgesia in $\alpha 2\delta 3$ mutant mice

We next tested whether the fly *stj* data is predictive of altered nociceptive behavior in mammals. The closest *stj* ortholog in mammals is $\alpha 2\delta 3$ (mouse $\alpha 2\delta 3$ is 33% identical and 60% similar to the STJ protein and the domain structures are conserved throughout evolution (Ly et al., 2008). To examine the role of $\alpha 2\delta 3$ *in vivo* we studied $\alpha 2\delta 3$ mutant mice generated by homologous recombination. Correct recombination and loss of protein expression were confirmed by Southern (Fig. 4A) and Western blotting (Fig. 4B). $\alpha 2\delta 3$ mutant mice are born at the expected Mendelian frequency and are fertile. Extensive characterization of these mice showed no obvious anatomical or histological abnormalities, including apparently normal brain morphology. There were also no genotype-related or biologically significant differences noted between age and gender matched mutant and wild-type control mice for any of the parameters evaluated at necropsy or by serum chemistry and haematology. Moreover, normal growth and body weights were recorded for mice at 49, 90, 180, and 300 days of age. Hence, by all anatomical and physiological parameters assessed, $\alpha 2\delta 3$ mutant mice appear normal.

Importantly, similar to *Drosophila stj* mutants, $\alpha 2\delta 3$ mutant mice showed a defect in acute thermal nociception in the hot plate assay, with diminished responsiveness at 50, 52, 54 and 56°C (Fig. 4C). In addition, $\alpha 2\delta 3$ mutant mice exhibited delayed sensitization in the Complete Freund's Adjuvant (CFA) model of peripheral inflammatory pain (Fig. 4D), indicating that $\alpha 2\delta 3$ contributes to the acute phase of heat hyperalgesia. CFA induced

inflammation, as determined by paw swelling, was comparable between $\alpha 2\delta 3$ mutant and control mice (Fig. 11A). By contrast, mechanical sensitivities (von Frey test) were unaffected in $\alpha 2\delta 3$ mutant mice (Fig. 11B). $\alpha 2\delta 3$ mutant mice were also evaluated for other behavioral tasks (Crawley, 2008): open field test to assess locomotor activity, general exploratory behavior, intra-session habituation, and general anxiety; tail suspension to assess behavioral despair; and a rotarod test to assess basic motor skills and coordination. In these assays no significant differences were observed between $\alpha 2\delta 3$ mutant and control mice (Fig. 11C-F). Thus, genetic deletion of $\alpha 2\delta 3$ in mice results in substantially impaired acute pain responses and a delay in inflammatory heat hyperalgesia.

Example 2.4: $\alpha 2\delta 3$ SNPs associate with human pain sensitivity

Since knock-down of *straightjacket* in *Drosophila* and knock-out of $\alpha 2\delta 3$ in mice results in impaired sensitivity to thermal pain, we expected that polymorphisms at the $\alpha 2\delta 3$ (*CACNA2D3*) locus might be associated with heat pain variance in humans. To assay for potential association of $\alpha 2\delta 3$ haplotypes relative to pain sensitivity we screened 4 single nucleotide polymorphisms (SNPs) within or close to the human *CACNA2D3* gene (Fig. 5A) in a cohort of 189 healthy volunteers subjected to a battery of experimental pain sensitivity tests (Diatchenko et al., 2005). Of these, the minor allele of the SNP rs6777055 was significantly associated with reduced thermal pain sensitivity, i.e, heat wind-up pain (Fig. 5B, recessive model). Wind-up measures successive increases in perceived pain intensity to a repeated noxious heat stimulus (ten heat pulses of 1.5 seconds each at 50°C each separated by 3 seconds).

Thermosensitive neurons have been also implicated in chronic pain in humans. To explore this we compared pain levels in 169 Caucasian adults who participated in a prospective observational study of surgical discectomy for persistent lumbar root pain, caused by an intervertebral disc herniation (Atlas et al., 2001) for an association with *CACNA2D3* SNPs. The minor alleles of two *CACNA2D3* SNPs (rs1851048 and rs6777055) were associated with less pain within the first year following surgery (Fig. 5C, recessive model). Importantly, the rs6777055 SNP C/C was signifi-

cantly associated with less pain in both healthy volunteer and chronic pain cohorts showing a recessive mode of inheritance. In both the experimental and lumbar pain groups the minor allele frequency for rs6777055 was 0.2, that is ~ 4% of the human population is homozygous for this genetic variant. These data show that minor variants within the human *CACNA2D3* gene are associated with less induced pain in healthy volunteers and reduced chronic pain in lumbar back pain patients.

Example 2.5: $\alpha 2\delta 3$ controls central transmission of pain signals to the sensory cortex and other higher order pain centers

Nociceptive processing involves the relay of sensory information from primary nociceptor neurons to second order neurons in the dorsal horn of the spinal cord which then transfer nociceptive information to the brain stem, thalamus, and higher order brain centres. Since our $\alpha 2\delta 3$ knock-out mice carry a LacZ reporter, we used β -Gal staining as a marker to assess $\alpha 2\delta 3$ expression. In the brain, β -Gal labeled the thalamus, pyramidal cells of the ventro-posterior paraflocculus of the cerebellum, caudate, putamen, the dentate gyrus of the hippocampus, the olfactory bulb and olfactory tubercle, as well as diffusely throughout the cortex (Fig. 6A). The LacZ expression profiles were confirmed by Western blotting and quantitative PCR and matched *in situ* data from the Allen brain atlas. We did not detect LacZ expression in the spinal cord and DRG. Absence of $\alpha 2\delta 3$ expression in primary sensory DRG neurons was confirmed by Western blotting (Fig. 4B). In line with these expression data, our behavioral experiments showed that loss of $\alpha 2\delta 3$ does not affect the noxious heat-induced tail flick response (Fig. 11G), a pain behavior mediated by a spinal reflex circuit (Pitcher et al., 1995). Finally, patch clamping showed that calcium current and kinetics were comparable among DRG neurons from control and $\alpha 2\delta 3$ mutant mice (Fig. 11H-K) indicating no requirement for $\alpha 2\delta 3$ in calcium channel function in these cells. These data suggest that $\alpha 2\delta 3$ is not required for thermal pain processing in nociceptors and the spinal cord, but $\alpha 2\delta 3$ may regulate thermal pain processing in the brain.

To address this, we employed non-invasive functional magnetic resonance imaging (fMRI)

tion level dependent (BOLD) signal to generate a activation maps of brain regions affected by noxious topical heat stimuli. In wild type mice (n=20), noxious thermal stimuli activate brain structures known as the "pain matrix" such as the thalamus (Fig. 6B), the S1 and S2 somatosensory cortex (Fig. 6C), the cingulum, amygdala, hypothalamus, or the motor cortex (Fig. 12). These areas are also involved in pain perception in human subjects. In both wild type (n=20) and $\alpha 2\delta 3$ mutant mice (n=18), thermal pain-induced activation of the thalamus (Fig. 6B), the key sub-cortical pain relay centre (Price, 2000). Intriguingly, loss of $\alpha 2\delta 3$ expression interrupted the normal engagement of pain circuitry in the brain resulting in markedly reduced BOLD peak amplitudes and activation volumes in higher order pain centers such as the somato-sensory S1 and S2 cortices, cingulate, or motor cortex after exposure to noxious temperatures (Fig. 6C; Fig. 12). Impaired activation of higher order pain centers, i.e. sensory and motor cortices, were confirmed by calculation of Euclidian distances.

To additionally assess temporal information flow of the pain signal within different cerebral structures, we calculated a cross-correlation matrix of the response time profiles for each predefined region of the somato-sensory pain matrix (Fig. 6D). In control mice, the sensory input relays thermal-evoked neural signals to the thalamus, where it effectively spreads to other central brain centers such as the sensory and association cortex, limbic system, cerebellum, basal ganglia, and motor cortex. $\alpha 2\delta 3$ mutant mice again exhibited normal activation of the thalamus but a reduced flow to nearly all the higher order pain centers, in particular the somato-sensory cortex (SC) (Fig. 6D). Moreover, whereas the pain signal spreads from the left (i.e. contra-lateral to the side of stimulation) in control mice, we found a considerable reduction in correlation coefficients of the pain signal from the left to the right brain in $\alpha 2\delta 3$ mutant mice (Fig. 13A). In addition, we observed increased negative BOLD signals in the S1 somato-sensory, motor and the cingulate cortex on both hemispheres of $\alpha 2\delta 3$ mutant mice (Fig. 13B), suggesting that genetic inactivation of $\alpha 2\delta 3$ not only results in impaired transmission of the signal to higher pain structures, but also in intra-cortical inhibition. Thus, loss of $\alpha 2\delta 3$ leads

to impaired transmission of noxious heat evoked signals from the thalamus to higher pain centers.

Example 2.6: Loss of $\alpha 2\delta 3$ results in sensory cross-activation

Although we found a marked impairment in the activation of known higher order pain centers, one puzzling finding from our fMRI data was that we did not find statistically significant differences between control and $\alpha 2\delta 3$ mutant mice in total activation volume and peak height when neuronal activity was surveyed in the entire brain (Fig. 14A). Since we had initially only focused on the pain matrix, we speculated that therefore loss of $\alpha 2\delta 3$ may result in hyperactivation of additional brain regions. Remarkably, noxious heat stimulation of all $\alpha 2\delta 3$ mutant mice triggered significantly enhanced activation of the visual cortex, the auditory cortex, as well as olfactory brain regions (Fig. 7A,B). Thus, in $\alpha 2\delta 3$ mutant mice, noxious heat stimulation results in a significant sensory cross-activation of brain regions involved in vision, hearing, and olfaction.

To image basal neuronal activity integrated over a 24 hour time period, we employed manganese labeling (MEMRI) (Silva et al., 2004). We observed similar activity in all imaged brain regions among a group comparison of control and $\alpha 2\delta 3$ mutant mice indicating that the observed stimulus induced sensory cross-activations are not due to altered basal neuronal activity. Moreover, diffusion tensor imaging (DTI) showed no overt structural changes with respect to fractional anisotropy between the thalamus and higher order pain centers or the thalamus and the visual, auditory, and olfactory centers. Further, cross-correlation analysis of the time profiles of the structures of the the pain matrix from resting-state BOLD imaging showed no defects in spontaneous spreading from the thalamus to higher order pain centers in $\alpha 2\delta 3$ mutant mice. Finally, network analysis of this resting state brain activity showed no overt changes in total functional connectivity within the pain matrix (1087 connections in wild type versus 1040 connections in $\alpha 2\delta 3$ mutant mice) and also apparently normal multisensory-thalamo-cortical network connectivity (1922 connections in wild type versus 2099 connections in $\alpha 2\delta 3$ mutant mice). Although we cannot exclude subtle developmental changes in defined neuronal populations of

$\alpha 2\delta 3$ mutant mice, these data suggest that the observed heat induced sensory cross-activations (and defective transmission of the thermal pain signal from the thalamus to higher order pain centers) are not due to altered basal neuronal connectivities.

To assess whether loss of $\alpha 2\delta 3$ also results in sensory cross-activation in other sensory modalities, we performed BOLD imaging in response to tactile vibrissal stimulation (Hess et al., 2000). Among control and $\alpha 2\delta 3$ mutant mice, we observed apparently normal activation of the brain region that encompasses the barrel field; the barrel field is the primary cortical somatosensory brain centre for processing of vibrissal stimulation. Remarkably, although we observed apparently normal activation of the barrel field, tactile stimulation again resulted in sensory cross-activation of visual, auditory, and olfactory brain centers in $\alpha 2\delta 3$ knock-out mice (Fig. 7A,C). Thus, in $\alpha 2\delta 3$ mutant mice, noxious heat stimulation as well as tactile stimulation trigger sensory cross-activation of brain regions involved in vision, hearing, and olfaction.

Example 3: PI3Kgamma locus

Using a genome-wide neuronal-specific RNAi knock-down strategy in adult *Drosophila*, we performed the first global screen for an innate behavior, and identified several novel genes required for thermal nociception (see example 2). We report the construction from this data of an evolutionary-conserved, global network map, identifying molecular components and key pathways involved in thermal pain perception. This systems map predicts multiple novel candidate genes and pathways that are conserved across phyla, providing a starting point for finding novel mammalian pain genes. One prominent pathway identified was phospholipid signaling and SNP mapping showed that a polymorphism in the phospholipid kinase PI3Kgamma locus is significantly associated with altered pain sensitivity in humans. Importantly, the role of PI3Kgamma in pain perception was confirmed in mutant mice that exhibit pronounced hypersensitivity to noxious heat and capsaicin. Using knock-in mice, pain hypersensitivity was mapped to the PI3Kgamma lipid kinase activity. Mechanistically, PI3Kgamma acts as a negative regulator of TRPV1 ion channel activity in DRG neurons. Our data provide the first systems map for a com-

plex innate behavior in any species that allowed us to identify a previously unknown pain gene, PI3Kg, in mice and humans.

Using a genome-wide strategy of neuron specific RNAi knock-down in adult *Drosophila*, we report the first global screen for an innate behavior, avoidance of noxious heat, and identification of hundreds of novel genes required for its manifestation (see example 2). To interrogate this unprecedented resource beyond direct fly mammalian gene homologue comparisons we examined the *Drosophila* nociception genes using data-mining and bioinformatics to define a conserved global systems network of pain. Potential mouse and human orthologs of our candidate pain genes were first identified using compara49, inparanoid, inparanoid6.1, inparanoid6.1 to ensembl, homologen08, and orthomclv2 databases (fig. 19). Of the 580 candidate fly thermal nociception genes, 399 had human orthologs (table 1, cols. 2-4). Among known mammalian pain genes, our screen identified two fly orthologs of amiloride-sensitive cation channel 3 (Accn3), an acid-sensing channel that sets tonic pain thresholds, GDNF family receptor alpha2, responsible for maintaining the size and terminal innervation of cutaneous nociceptors, Protein Kinase G, implicated in promoting thermal sensitization in response to inflammation, the fly orthologs of the adenosine receptor Adora, important for both acute and chronic pain in mice, a potential homolog of the mammalian galanin receptor that contributes to neuropathic pain behavior in mice, a fly GPCR similar to mouse cannabinoid and lysophosphatidic acid receptors, and a fly homolog of the cholecystokinin receptor that influences thermal pain thresholds. Thus, our genome-wide functional screen for thermal nociception in flies identifies multiple known mammalian pain genes, showing that the inventive screen provided correct results of known and new pain associated genes.

Gene ontology (GO) analyses of human and mouse orthologs of the thermal nociception hits showed a marked enrichment of genes involved in neurotransmission and secretion, housekeeping systems such as mitochondrial structure, ATP synthesis, metabolism, or calcium signaling (Fig. 15A,B). We next generated an interaction map based on first degree binding partners for these mammalian orthologs, because we assume that our candidate thermal nocicep-

tion genes perform many of their functions in protein complexes. All binding partners were identified in yeast-2-hybrid screens reported in the biomolecular interaction network database BIND, i.e. binding partners experimentally confirmed to interact with the candidate genes. Importantly, among the first degree binding partners in this interaction network, we found fly allato-statin C receptor 1, which has some homology with mammalian opioid receptors, *Lmx1b* which regulates central serotonergic responses to opioids, the nuclear factor-erythroid 2-related factor 2, which has anti-nociceptive effects by inducing upregulation of heme oxygenase-1, and tyrosine hydroxylase, the enzyme required for dopamine and catecholamines production. Thus, we present strong evidence that our screen identifies many known regulators of thermal pain and multiple uncharacterized genes and pathway previously never associated with pain perception.

To construct a systems map of thermal nociception we performed an enrichment analysis of KEGG pathways and Broad Institute C2 pathway gene sets, on the mouse and human "pain" orthologs and their first degree binding partners (in part shown in fig. 19). From both the mouse and human KEGG and C2 analyses, we found significant enrichment of genes involved in mitochondria, metabolism, calcium signaling, inflammation, cell adhesion, RNA processing, and neurotransmission. Finally, to generate a comprehensive global network map of thermal nociception, the KEGG pathways from *Drosophila*, mouse and human were combined with relevant gene sets from the C2 annotations to create a global "nociception network" (Fig. 16).

Importantly, the connectivity of the entire systems map remains intact even after omitting all binding partners (fig. 20), i.e., expansion of the pain network map by including binding partners does not introduce a bias. Moreover, all except one pathway in the network map has > 50% representation from the *Drosophila* pain hits alone. To test whether our bioinformatic approach is indeed valid for predicting pain genes, we measured the overlap of the direct candidate pain hits and their binding partners with previous microarray data from pain studies and all "pain" annotated genes from OMIM (NCBI). Intriguingly, we found a 35% overlap of our direct pain hits and a 37% overlap of the binding

partners with the microarray and OMIM data. In contrast, 100 random gene lists gave a maximum of 6% overlapping genes and a minimum of 0%. Thus, our hypothesis-free systems map is indeed enriched for known pain genes, and we suggest, contains many others not yet discovered.

In example 2 we demonstrated a role in mammalian heat pain perception of a direct *Drosophila* thermal nociception hit, a2d3. Importantly, our bioinformatic analyses allowed us to expand our systems map to also include mammalian gene sets and genes that have no direct fly orthologs. We therefore wanted to validate whether this *in silico* approach has indeed also the power to identify novel mammalian pain genes. We first investigated whether polymorphisms in the gene sets predicted by our conserved network are associated with significant differences in pain sensitivity in humans. One of the genes identified by this approach was the catalytic p110 subunit of the phosphatidylinositol-3-OH kinase (PI3K γ , PIK3CG). Class I phosphatidylinositol-3-OH kinases (PI3K) are lipid kinases that convert phosphatidylinositol 4,5-bisphosphate (PIP2) into phosphatidylinositol (3,4,5)-trisphosphate (PIP3). Mammals have four class I PI3K, three of which (α , β , and δ) are primarily activated by tyrosine kinase signaling pathways, while PI3K γ is the principal PI3K that relays signals via GPCRs. Of note, PI3K α , β , and δ all showed no significant association with pain sensitivities in humans. PI3K and GPCR signaling were prominent nodes in our conserved systems map (Fig. 16; fig. 20). Although PI3K γ intersects with GPCRs implicated in nociception and PI3K γ has been the focus of literally thousands of studies, and is a major target for drug development, no distinct function has ever been ascribed to PI3K γ in the nervous system, and certainly none in pain.

To validate whether the PI3K γ nucleotide polymorphism found in our GWAS is indeed associated with pain in humans, we screened 5 SNPs within or close to the human *PIK3CG* gene (fig. 21A) in 192 healthy human volunteers who had undergone tests for acute experimental pain sensitivity. Of those, the SNP rs757902, located 5565 base pairs upstream from the human *PIK3CG* transcription start site, was significantly associated with a great-

er propensity to windup represented by the PCA-derived Factor 3 (Fig 17B, dominant model). Wind-up measures successive increases in perceived pain intensity to a repeated noxious heat stimulus (ten heat pulses of 1.5 seconds each at 50°C each separated by 3 seconds).

To confirm this *PIK3CG* association in an independent cohort, we compared pain levels in 160 Caucasian adults who participated in a prospective observational study of surgical discectomy for persistent lumbar root pain, caused by an intervertebral disc herniation. Again, a polymorphism in the SNP rs757902 was associated with significantly increased pain during the first year following surgery (Fig. 17C, dominant model). The frequencies for the G allele in rs757902 were 3.1% and 3.4% in the healthy volunteer and lumbar pain groups, respectively, indicating that approximately 54-58% of the population carry at least one G allele at rs757902. We have therefore identified one common genetic variant of the human *PIK3CG* gene, rs757902, which is associated with an increase in heat pain sensitivity in healthy volunteers and heightened chronic post-surgical pain in lumbar back pain patients, a finding that indicates the strong predictive link between our bioinformatic analysis and human pain sensations.

To confirm that *PI3K γ* indeed controls mammalian pain sensitivity, we analysed *PI3K γ ^{-/-}* mice. These mutant mice exhibited normal posture and appearance and no significant differences were observed in hearing, sight, and vocalization. *PI3K γ ^{-/-}* mice also behaved similar to littermate controls in a skilled reaching task (fig. 21A), built comparable nests, and displayed normal circadian behavior (fig. 21B), open field activity (fig. 21C and D), and motor coordination (fig. 21E). *PI3K γ* littermate control and mutant mice also displayed a comparable ability to learn in the water maze, the T maze, and in a passive foot shock avoidance assay (fig. 21F-H). Furthermore, the overall morphology and histology of the central nervous system appeared normal in *PI3K γ ^{-/-}* mice.

When we tested for pain responses, *PI3K γ ^{-/-}* mice exhibited an exaggerated behavioral response to radiant heat plantar stimula-

tion, using the Hargreaves test (Fig. 17D). We also observed an increased acute thermal response using the hot plate assay (Fig. 3E). In mammals, TRPV1 is the prototypical thermo-receptor, and is also the receptor for capsaicin, the active ingredient in chili peppers. We therefore tested whether PI3K γ mutant mice also exhibit heightened reactivity to capsaicin. Importantly, we indeed observed a massive hypersensitivity in the response of the PI3K $\gamma^{-/-}$ mice (Fig. 17F). In contrast, the mechanical pain threshold using the von Frey test (fig. 21I and J), and the behavioral responses to acetone application (a cooling sensation) (fig. 21K) were comparable between control and PI3K $\gamma^{-/-}$ littermates.

PI3K γ is a key mediator of inflammatory cell migration to the site of injury. We therefore tested PI3K γ mutant mice for potential defects in inflammation-induced pain sensitization, i.e. thermal hyperalgesia. PI3K $\gamma^{-/-}$ mice developed comparable levels of thermal hyperalgesia (fig. 22A and B) following plantar CFA injection, indicating that inflammation-induced pain sensitization does not depend on PI3K γ . CFA-induced inflammation, as determined by paw swelling, was comparable between mutant and control mice (fig. 22C). To further exclude a potential role of haematopoietic cells, we performed bone marrow chimeras; the requirement for PI3K γ in thermal sensing was indeed mapped to non-haematopoietic cells (Fig. 17G). PI3K γ has been shown to act both in a kinase-dependent fashion, through conversion of PIP2 to PIP3, and in a kinase-independent manner. We therefore tested the behavioral response of PI3K γ kinase-dead (KD) knock-in mice to radiant plantar stimulation. PI3K γ KD mice exhibited a decrease in thermal nociception latency (Fig. 17H), comparable to the enhanced responses observed in complete PI3K γ mutant mice. These data show that PI3K γ functions through its lipid kinase activity, to modulate the behavioral response to noxious heat stimuli *in vivo*.

To test if the enhanced basal thermal sensitivity observed in PI3K $\gamma^{-/-}$ mice is intrinsic to noxious heat TRPV1 expressing nociceptors, we employed electrophysiology on isolated wild type and PI3K $\gamma^{-/-}$ dorsal root ganglia (DRG) neurons *in vitro*. Both control and PI3K $\gamma^{-/-}$ DRG neurons responded to a thermal ramp

(Fig. 18A), with $PI3K\gamma^{-/-}$ mice exhibiting an increased steepness in the inward current response to increasing temperature. This translated into a massively increased Q10 value (Fig. 18B), a measure of temperature-dependent rate change in channel conductivity, indicating that $PI3K\gamma^{-/-}$ DRG cells exhibit massive hyper-activation in response to noxious heat. In accordance with our behavioral data, isolated $PI3K\gamma^{-/-}$ DRG neurons also exhibited increased sensitivity to capsaicin (Fig. 18C,D). These results provide the first genetic evidence that PI3K γ plays a functional role in the nervous system; moreover, we show that PI3K γ functions as a negative regulator of TRPV1 channels, and, in consequence in the absence of PI3K γ , DRG neurons exhibit a markedly exaggerated response to noxious heat and capsaicin.

Our data provide the first systems map for a complex innate behavior in any species. This network map revealed many genes and gene sets previously reported to be involved in mammalian nociception. Importantly, the network also allowed us to predict a novel regulator of pain perception, PI3K γ . Although multiple GPCRs operate in the nervous system and PI3K γ is the main lipid kinase coupled to GPCRs, no behavioral defects had been reported before in PI3K γ mutant mice. Most importantly, these results directly translate to humans, since we found a PI3K γ polymorphism that significantly associates with altered pain sensitivity in healthy volunteers and pain levels in chronic back pain patients. Of note, humans carrying a minor allele variant at the *PI3K3CG* locus, as well as our PI3K γ mutant mice exhibit increased pain indicating that our systems approach using whole genome fly screening and construction of a conserved network map can identify positive as well negative regulators of pain perception. These data reinforce the extraordinary conservation of the neurobiological mechanisms of nociception, from its manifestation as avoidance of damage in flies to the complex sensation of pain in humans, a conservation that provides an opportunity from a fly screen to find novel human pain genes.

Our whole-genome, neuron-specific RNAi screen provides a global functional analysis of a complex, innate behavior. We have uncovered hundreds of novel target genes for nociception, a large

proportion of which had completely unknown functions until now.

One of the screen hits was the calcium channel subunit *straight-jacket/ $\alpha 2\delta 3$* and phospholipid kinase PI3Kgamma. In both larva and adult *Drosophila*, we show that *straightjacket* or PI3Kgamma are indeed involved in nociception, validating the screening results that yielded more than 100 genetic targets. Importantly, similar to the fly, genetic deletion of $\alpha 2\delta 3$ in mice also results in impaired acute heat pain responses. These results translate to humans, since we found $\alpha 2\delta 3$ polymorphisms that significantly associate with reduced pain sensitivity in healthy volunteers and lower levels of chronic pain in lumbar back pain patients. These data reinforce the extraordinary conservation of the neurobiological mechanisms of nociception, from its manifestation as avoidance of damage in primitive creatures like flies, to the complex sensation of pain in humans. Ligands and antagonists of the novel genetic targets were identified, that can be used in novel therapeutic approaches for the treatment and amelioration of pain and its symptoms.

Example 4: Testing of anti-pain compounds

The basic principle of animal models of human pain involve the induction of a pain-like state in the organism resulting in characteristic behavioural and physical responses, such as hypersensitivity to touch (mechanical allodynia) and temperature (cold allodynia). The assessment of the efficacy of potential analgesics is determined based on said compound's ability to attenuate/ameliorate these symptoms.

Example 4.1: Assessing chronic pain animal models - Chronic Constriction Injury

The Bennett and Xie chronic constriction injury (CCI) model is a model of mononeuropathic pain (Bennett and Xie, 1988). Rodents are subjected to a surgical procedure where gut ligatures are tied loosely around the sciatic nerve at the mid-thigh level. Symptoms of neuropathy develop in the operated paw over the following days including tactile allodynia and cold allodynia which are measured using Von Frey's hairs and paw withdrawal from a cold plate, respectively. Operated animals also exhibit other symptoms of spontaneous pain including thermal hyperalgesia ,

ectopic and spontaneous firing of sensory afferents, autotomy, licking and guarding of paw and sleep architecture abnormalities (Blackburn-Munro and Erichsen, 2005). Furthermore, electrophysiological studies have demonstrated the presence of both sensory nerve hyperexcitability and central sensitisation (wind up) in the dorsal horn and elsewhere (Blackburn-Munro and Erichsen, 2005). The Bennett and Xie model is thought to have predictive validity as an 88% concordance has been observed between activity in the model (any endpoint) and clinical efficacy in neuropathic pain (Kontinen and Meert 2003). Multiple drug classes including NSAIDs are ineffective in the clinical treatment of neuropathic pain and fail to ameliorate symptoms in the Bennett model despite the presence of an inflammation in the initial phase after surgery (eg Schaefers et al., 2004; Takahashi et al., 2004, LaBuda and Little, 2005). Pregabalin, a drug approved for the treatment of various types of (chronic) pain, including neuropathic pain associated with diabetic peripheral neuropathy in humans, is effective at ameliorating symptoms of pain in the CCI model.

Example 4.1.1. Test apparatus

Mechanical allodynia was assessed by Von Frey's hairs. These consist of a series of wires of progressive thickness each of which bend when a critical pressure (1.4, 2, 4, 6, 8, 10, 15 g) is applied. Animals were placed in floorless Perspex testing boxes resting on a wire mesh tray. Von Frey's hairs were then applied through the mesh floor to the sole of the left and right hind paws until either the animal sensed discomfort and moved the paw or the pressure applied to the Von Frey's hair exceeded the critical level and it was observed to bend. Von Frey's hairs were applied in ascending order until either a pain response (the paw was moved) was registered or the cut-off of 15 g was reached, using the Von Frey hair with the highest rating. Hairs were applied to each heel 8-10 times at a frequency of approximately 1 Hz. If a limb was moved in response to a probe, further testing was halted and the sensitivity to a mechanical stimulus was deemed to have been reached.

Sensitivity to cold (cold allodynia) was assessed by placing animal subjects on a cold plate held at 10°C. The latency (time) to lift the respective hind paw clear off the cold plate was

measured. A cut-off of 180 s was applied.

Example 4.1.2: Compound testing

This example demonstrates the effectiveness of compound(s) according to the invention in ameliorating mechanical and cold allodynia in rats with peripheral mononeuropathy induced by loose ligation of the sciatic nerve as described in Bennett and Xie, 1988.

The test apparatus according to Example 4.1.1 was used for assessing mechanical and thermal sensitivities.

Male Sprague-Dawley rats were habituated to the mechanical test apparatus (Von Frey's hairs, described in Example 4.1.1) during 5-10 min periods spread over two days and once to the cold plate set at 10°C for 3 minutes. Following habituation animals underwent a surgical procedure requiring anaesthetization under isoflurane, shaving of the left (ipsilateral) hind limb and swabbing with antiseptic followed by administration of sodium pentobarbitone. An incision was made to reveal the left sciatic nerve which was tied off with four loose ligatures of chromic cat gut. The exposed muscle was sutured with non-absorbable silk and the wound closed with surgical clips.

The animals were monitored in the hours post surgery and on a daily basis thereafter. Animals showing signs of ill health or autotomy were removed from the study. Approximately 12 and 18 days after surgery the animals were reassessed for sensitivity to Von Frey's hairs and to the cold plate.

Animal subjects meeting pre-defined criteria for hypersensitivity to mechanical (ipsilateral hind-paw moved at a pressure of ≤ 4 g) and thermal stimuli (≤ 78 s withdrawal latency) in the operated (ipsilateral) hind-paw were allocated according to baseline mechanical and cold sensitivity scores to produce balanced treatment groups of 8 to 10 animals in each group.

Example 4.1.3. Single dose/acute dosing

Each group of animals according to Example 4.1.2 was administered a single dose of either a positive control drug (pregabalin formulated in a vehicle of 0.5% methyl cellulose to a concentration of 12 mg/mL and administered po in a 5 mL/kg dosing volume to give a dose of 60 mg/kg) or a compound according to the invention. Animal subjects were reassessed for mechanical

and cold allodynia 30 min, 90 min, 180 min and 24 hours after administration of the respective compound, using Von Frey's hairs and a cold plate set at 10°C. The cold plate assessment was performed 5 mins after each Von Frey test.

Example 4.1.3.1 Test with dasatinib and tenofovir

The procedure as described in Example 4.1.2.1. was performed with the compounds according to the invention being dasatinib and tenofovir. In total, five groups of animals were included: one group of 10 animals received the positive control drug, pregabalin, at 60 mg/kg and four groups of 8 animals each received either 10 mg/kg dasatinib, 30 mg/kg dasatinib, 50 mg/kg tenofovir or 500 mg/kg tenofovir, respectively (Fig. 23C). Dasatinib was formulated in a vehicle (50% PEG:50% water) to concentrations of 2 and 6 mg/mL and administered orally in a 5 mL/kg dosing volume to give doses of 10 mg/kg or 30 mg/kg. Tenofovir was formulated in a vehicle (0.5% methyl cellulose) to concentrations of 10 and 100 mg/mL and administered orally in a 5 mL/kg dosing volume to give doses of 50 and 500 mg/kg.

Example 4.1.3.2. Description of cilomilast, zardaverine and roflumilast

The procedure as described in Example 4.1.2.1. was performed with the compounds according to the invention being cilomilast, zardaverine and roflumilast. In total, five groups of animals were included: one group of 10 animals received the positive control drug, pregabalin, at 60 mg/kg and four groups of 8 animals each received either 3 mg/kg cilomilast, 30 mg/kg cilomilast, 20 mg/kg zardaverine or 1.8 mg/kg roflumilast, respectively (Fig. 23A). Cilomilast was formulated in water to concentrations of 0.6 and 6 mg/mL and administered orally in a 5 mL/kg dosing volume to give doses of 3 and 30 mg/kg. Zardaverine was formulated in a vehicle of 0.5% methyl cellulose to a concentration of 4 mg/mL and administered orally in a 5 mL/kg dosing volume to give a dose of 20 mg/kg. Roflumilast was formulated in a vehicle of 0.5% methyl cellulose to a concentration of 0.36 mg/mL and administered orally in a 5 mL/kg dosing volume to give a dose of 1.8 mg/kg.

Example 4.1.3.3: Test with bosutinib and adefovir

The procedure as described in Example 4.1.2.1. was performed with the compounds according to the invention being bosutinib and adefovir. In total, five groups of animals were included: one group of 10 animals received the positive control drug, pregabalin, at 60 mg/kg and four groups of 8 animals each received either 60 mg/kg bosutinib, 200 mg/kg bosutinib, 2 mg/kg adefovir or 20 mg/kg adefovir, respectively (Fig. 23B). Bosutinib was formulated in 0.5% methyl cellulose to concentrations of 12 and 40 mg/mL and administered orally in a 5 mL/kg dosing volume to give doses of 60 and 200 mg/kg. Adefovir was formulated in 0.5% methyl cellulose to concentrations of 0.4 and 4 mg/mL and administered orally in a 5 mL/kg dosing volume to give doses of 2 and 20 mg/kg.

Example 4.1.4: Chronic studies

Each group of animals according to Example 4.1.2 was administered either a positive control drug (pregabalin formulated in a vehicle of 0.5% methyl cellulose to a concentration of 12 mg/mL and administered po in a 5 mL/kg dosing volume to give an effective dose (e.g. 60 mg/kg)) or a compound according to the invention. Dosing was carried out one or several times daily for two days to eight weeks. Animal subjects were reassessed for mechanical and cold allodynia either daily, weekly, biweekly, monthly or at the end of the study at one or several time points: 30 min, 90 min, 180 min, 12 hours, 24 hours, 48 hours, 72 hours and 1 week after administration of the respective compound, using Von Frey's hairs and a cold plate set at 10°C.

Example 4.2: Assessing inflammatory pain animal models - Complete Freund's Adjuvant (CFA)

Complete Freund's Adjuvant (CFA) consists of heat-killed mycobacterium suspended in mineral oil. When injected systemically into rodents, an immune response is triggered resulting in chronic inflammation of many organs such as skin, liver, spleen, eyes, bone marrow and particularly peripheral joints. The inflammatory response results in bone resorption and periosteal bone proliferation. Importantly this inflammatory state results in spontaneous pain and ectopic nerve cell firing. Thus, the resultant adjuvant disease exhibits polyarthritic symptoms.

When CFA is injected unilaterally into the limbs it elicits a

monoarthritic-like condition and is thus used to model chronic inflammatory conditions. Unilateral injection allows the analysis of ipsilateral and contralateral effects of localised joint pain (Millan et al., 1988). Injection of CFA results in oedema of the affected joint, mechanical allodynia and mechanical and thermal hyperalgesia (Butler et al., 1992; Hsieh et al., 2010; Meotti et al., 2006; Staton et al., 2007). As these features resemble the clinical pathology of rheumatoid arthritis, CFA-induced chronic inflammation has been widely used as a model of this condition.

A wide variety of treatments acting via different mechanisms that have generated positive data in rat adjuvant-induced arthritic models have proven effective in subsequent clinical trials for rheumatoid arthritis (Hegen et al., 2008). Indeed, an analysis by Whiteside (Whiteside et al., 2008), concluded that activity in the rat CFA test could be used to predict the exposure needed for clinical efficacy. Both morphine-like opioids, steroids and NSAID analgesics can attenuate inflammation-associated allodynia/hyperalgesia and normalise nociceptive sensitivity (Jett et al., 1999, da Silva Filho et al., 2004).

Example 4.2.1: Test system

This example demonstrates the effectiveness of a compound according to the invention in ameliorating mechanical and cold allodynia in rats with inflammatory pain induced by injection of an adjuvant (CFA) into the limbs.

The test apparatus according to Example 4.1.1 was used for assessing mechanical and thermal sensitivities.

53 male Sprague-Dawley rats were habituated to the test apparatus and tested for basal sensitivity to mechanical and thermal stimuli in both the right (ipsilateral) and left (contralateral) paws using Von Freys hair and a radiant heat source, respectively, on the day prior to Complete Freund's Adjuvant (CFA) administration (Day 0). The following morning (Day 1), animals were subjected to a subplantar injection of 50% complete CFA in a 100uL injection volume into the ipsilateral hind-paw. Two days later (Day 3), baseline mechanical and thermal sensitivities were reassessed in the CFA-injected (ipsilateral) and non-injected (contralateral) hind-paws. 42 rats meeting pre-defined criteria for hypersensitivity to mechanical (ipsilateral hind-

paw moved at a pressure of <4g) and thermal stimuli (>30% difference in latency time between ipsi- and contra-lateral hind-paws) were assigned to treatment groups of 8 to 10 animals in each group. One hour later, at T=0, drug administration commenced.

Example 4.2.2. Acute/single dosing

One group of animals according to Example 4.2.1 was administered a single dose of the drug indomethacin (positive control), an NSAID with demonstrated efficacy in the CFA model and in human inflammatory/arthritis diseases. Indomethacin was formulated in 50% 0.1 M Na₂CO₃; 47.5% phosphate buffered saline (PBS): taken to pH 7 with 2.5% 1M HCl at a concentration of 2 mg/mL to give a dose of 10 mg/kg when administered intraperitoneally in a 5 mL/kg injection volume. The remaining groups of animals were administered a single dose of compound(s) according to the invention. 30, 90, 180 min and 24h post-dose, all groups of rats were re-assessed for mechanical allodynia and thermal hyperalgesia in both the treated and untreated hind-paws, using Von Frey's hairs and a cold plate set at 10°C in accordance with Example 0. All readings were compared to the basal sensitivity reading (T=0) of the (ipsilateral) paw in each animal.

Example 4.2.1.1 Test with dasatinib and tenofovir

The procedure as described in Example 2A was performed with the compounds according to the invention being dasatinib and tenofovir. In total, five groups of animals were included: one group of 10 animals received the positive control drug, indomethacin, intraperitoneally at a dose of 10 mg/kg. Four groups of 8 animals each received either 10 mg/kg dasatinib, 30 mg/kg dasatinib, 50 mg/kg tenofovir or 500 mg/kg tenofovir, respectively (Fig. 24A). Dasatinib was formulated in a vehicle (50% PEG:50% water) to concentrations of 2 and 6 mg/mL and administered orally in a 5 mL/kg dosing volume to give doses of 10 and 30 mg/kg. Tenofovir was formulated in a vehicle (0.5% methyl cellulose) to concentrations of 10 and 100 mg/mL and administered orally in a 5 mL/kg dosing volume to give doses of 50 and 500 mg/kg.

Example 4.2.1.2. Test with cilomilast, zardaverine and roflumilast

The procedure as described in Example 2A was performed with the compounds according to the invention being cilomilast, zardaverine and roflumilast. In total, five groups of animals were included: one group of 10 animals received the positive control drug, indomethacin, at 10 mg/kg and four groups of 8 animals each received either 3 mg/kg cilomilast, 30 mg/kg cilomilast, 20 mg/kg zardaverine or 1.8 mg/kg roflumilast, respectively (Fig. 24B). Cilomilast was formulated in water to concentrations of 0.6 and 6 mg/mL and administered orally in a 5 mL/kg dosing volume to give doses of 3 and 30 mg/kg. Zardaverine was formulated in a vehicle of 0.5% methyl cellulose to a concentration of 4 mg/mL and administered orally in a 5 mL/kg dosing volume to give doses of 20 mg/kg. Roflumilast was formulated in a vehicle of 0.5% methyl cellulose to a concentration of 0.36 mg/mL and administered orally in a 5 mL/kg dosing volume to give doses of 1.8 mg/kg.

Example 4.2.1.3. Test with bosutinib and adefovir

The procedure as described in Example 1 was performed with the compounds according to the invention being bosutinib and adefovir. In total, five groups of animals were included: one group of 10 animals received the positive control drug, indomethacin, at 10 mg/kg and four groups of 8 animals each received either 60 mg/kg bosutinib, 200 mg/kg bosutinib, 2 mg/kg adefovir or 20 mg/kg adefovir, respectively (Fig. 24C). Bosutinib was formulated in 0.5% methyl cellulose to concentrations of 12 and 40 mg/mL and administered orally in a 5 mL/kg dosing volume to give doses of 60 and 200 mg/kg. Adefovir was formulated in 0.5% methyl cellulose to concentrations of 0.4 and 4 mg/mL and administered orally in a 5 mL/kg dosing volume to give doses of 2 and 20 mg/kg.

Example 4.2.3. Chronic studies

Each group of animals according to Example 2 was administered either a positive control drug (indomethacin, which was formulated in 50% 0.1 M Na₂CO₃; 47.5% phosphate buffered saline (PBS): taken to pH 7 with 2.5% 1M HCl at a concentration of 2 mg/mL to give an effective dose (e.g. 10 mg/kg when administered intraperitoneally in a 5 mL/kg injection volume)), or a compound according to the invention. Dosing was carried out one or several

times daily for two days to eight weeks. Animal subjects were reassessed for mechanical and cold allodynia either daily, weekly, biweekly, monthly or at the end of the study at one or several time points: 30 min, 90 min, 180 min, 12 hours, 24 hours, 48 hours, 72 hours and 1 week after administration of the respective compound, using Von Frey's hairs and a cold plate set at 10°C according to Example 0.

Example 5. Measurement of PDE4D activity and determination of IC₅₀ values of test compounds

The half maximal inhibitory concentration (IC₅₀) is a measure of the effectiveness of a compound in inhibiting biological or biochemical function. Concentration-response plots are used to determine the effects of an inhibitor on an enzymatic reaction. The cloning of catalytic domains of human PDE4D as well as the expression and purification of the PDE catalytic domains were based on the protocols described in Card et al., 2004.

Measurement of phosphodiesterase activity takes advantage of the selective binding of 5-AMP or 5-GMP (and not cAMP or cGMP) to yttrium silicate beads with embedded scintillant. 0.1–1 nM PDE was incubated with 50 nM 3H-cAMP or 70 nM 3H-cGMP (Amersham, 5–60 Ci/mmol) in 50 mM Tris (pH 7.5), 8.3 mM MgCl₂, 1.7mM EGTA, and 0.01% BSA at 30°C for 30 min in 384-well assay plates. The assay was terminated by adding one-third volume of 5 mg/ml yttrium silicate beads in 18 mM ZnAcetate/ZnSO₄ solution (3:1). A minimum of 30 min after mixing and centrifuging the reaction, hydrolysis was quantified by reading in a scintillation counter (Trilux, Conclusions Wallac). The cAMP and cGMP concentrations used, where possible, were far below the K_m of the enzyme to ensure that the IC₅₀ values obtained are good approximations of K_i (Mehats et al., 2002).

Example 6. Clinical study

Patients with a long term or chronic pain condition are eligible for the study.

After initial screening, a total of 20 to 200 patients are randomized to one of two treatment groups. Patients in one treatment group receive a compound according to the invention at a pharmaceutically active dose and patients in the other (control)

treatment group receive either placebo or an active control drug at a pharmaceutically active dose. A preferred active control drug is pregabalin. Preferably, the study is carried out in a double-blinded fashion.

Treatment duration is between 1 and 15 weeks, and efficacy evaluation is carried out as the average of the pain scores recorded for the past 1 to 7 days (preferably 7 days) relative to the day chosen for efficacy evaluation, comparing the group receiving the compound according to the invention with the control group. The pain scores are preferably assessed based on patients' daily pain diaries, in which they record their daily pain score on an 11-point (0 = "no pain" to 10 = "worst possible pain") numeric rating scale (NRS) [Arezzo et al., 2008].

The primary endpoint of the study is preferably a comparison of the average pain score for the last 7 available pain diary entries at the end of the treatment phase.

Example 7. Painful diabetic peripheral neuropathy (PDPN)

A clinical study according to Example 6 is carried out with the following key inclusion criteria: patients are men or women ≥ 18 years of age with type 1 or type 2 diabetes with HbA1C $\leq 11\%$ and painful diabetic peripheral neuropathy of at least 3 months' duration. Patients score at least 40 mm on the Short-Form McGill Pain Questionnaire (SF-MPQ) Visual Analog Scale (VAS) [Arezzo et al., 2008], or any other standard VAS. At randomization, patients have completed at least four daily pain diary entries (using an 11-point NRS) and should have an average daily pain score ≥ 4 over the past 7 days.

Example 8. Post-herpetic neuralgia

A clinical study according to Example 6 is carried out with the following key inclusion criteria: patients are men or women ≥ 18 years of age with persistent pain for at least 6 months after the onset of herpes zoster rash. Patients score at least 40 mm on the Short-Form McGill Pain Questionnaire (SF-MPQ) Visual Analog Scale (VAS) [Arezzo et al., 2008], or any other VAS.

Example 9. Mixed neuropathy

A clinical study according to Example 6 is carried out with patients selected according to inclusion criteria in Example 7 as well as Example 8.

Example 10. Measurement of binding affinity to determine Kd values

The binding and selectivity of a compound for a receptor can be assayed, for instance, by carrying out biochemical binding assays such as KinomeScan kinase binding assays as described in Karaman et al., 2008. For an assay to determine the binding of a compound to the target FRK, the kinase construct NP_002022.1 may be used. The assay can be performed with either the full length protein or with a kinase construct that spans the catalytic domain.

REFERENCES

- Aleman, A., Rutten, G.J., Sitskoorn, M.M., Dautzenberg, G., and Ramsey, N.F. (2001). Activation of striate cortex in the absence of visual stimulation: an fMRI study of synesthesia. *Neuroreport* 12, 2827-2830.
- Arthurs, O.J., and Boniface, S. (2002). How well do we understand the neural origins of the fMRI BOLD signal? *Trends in neurosciences* 25, 27-31.
- Atlas, S.J., Keller, R.B., Chang, Y., Deyo, R.A., and Singer, D.E. (2001). Surgical and nonsurgical management of sciatica secondary to a lumbar disc herniation: five-year outcomes from the Maine Lumbar Spine Study. *Spine* 26, 1179-1187.
- Basbaum, A.I., Bautista, D.M., Scherrer, G., and Julius, D. (2009). Cellular and molecular mechanisms of pain. *Cell* 139, 267-284.
- Beauchamp, M.S., and Ro, T. (2008). Neural substrates of sound-touch synesthesia after a thalamic lesion. *J Neurosci* 28, 13696-13702.
- Catterall, W.A. (2000). Structure and regulation of voltage-gated Ca²⁺ channels. *Annual review of cell and developmental biology* 16, 521-555.

Costigan, M., Scholz, J., and Woolf, C.J. (2009). Neuropathic Pain: A Maladaptive Response of the Nervous System to Damage. Annual review of neuroscience.

Cox, J.J., Reimann, F., Nicholas, A.K., Thornton, G., Roberts, E., Springell, K., Karbani, G., Jafri, H., Mannan, J., Raashid, Y., et al. (2006). An SCN9A channelopathy causes congenital inability to experience pain. *Nature* 444, 894-898.

Crawley, J.N. (2008). Behavioral phenotyping strategies for mutant mice. *Neuron* 57, 809-818.

Diatchenko, L., Slade, G.D., Nackley, A.G., Bhalang, K., Sigurdsson, A., Belfer, I., Goldman, D., Xu, K., Shabalina, S.A., Shagin, D., et al. (2005). Genetic basis for individual variations in pain perception and the development of a chronic pain condition. *Human molecular genetics* 14, 135-143.

Dickman, D.K., Kurshan, P.T., and Schwarz, T.L. (2008). Mutations in a Drosophila alpha2delta voltage-gated calcium channel subunit reveal a crucial synaptic function. *J Neurosci* 28, 31-38.

Dietzl, G., Chen, D., Schnorrer, F., Su, K.C., Barinova, Y., Fellner, M., Gasser, B., Kinsey, K., Oppel, S., Scheiblaue, S., et al. (2007). A genome-wide transgenic RNAi library for conditional gene inactivation in Drosophila. *Nature* 448, 151-156.

Dudycha, G.J., & Martha M. Dudycha (1935). A Case of Synesthesia: Visual-Pain and Visual-Audition. *Journal of Abnormal and Social Psychology* 30, 57-69.

Dworkin, R.H., O'Connor, A.B., Backonja, M., Farrar, J.T., Finnerup, N.B., Jensen, T.S., Kalso, E.A., Loeser, J.D., Miaskowski, C., Nurmikko, T.J., et al. (2007). Pharmacologic management of neuropathic pain: evidence-based recommendations. *Pain* 132, 237-251.

Eroglu, C., Allen, N.J., Susman, M.W., O'Rourke, N.A., Park, C.Y., Ozkan, E., Chakraborty, C., Mulinyawe, S.B., Annis, D.S., Huberman, A.D., et al. (2009). Gabapentin receptor alpha2delta-1 is a neuronal thrombospondin receptor responsible for excitatory CNS synaptogenesis. *Cell* 139, 380-392.

Field, M.J., Cox, P.J., Stott, E., Melrose, H., Offord, J., Su, T.Z., Bramwell, S., Corradini, L., England, S., Winks, J., et al. (2006). Identification of the alpha2-delta-1 subunit of voltage-dependent calcium channels as a molecular target for pain mediating the analgesic actions of pregabalin. *Proceedings*

of the National Academy of Sciences of the United States of America 103, 17537-17542.

Hess, A., Stiller, D., Kaulisch, T., Heil, P., and Scheich, H. (2000). New insights into the hemodynamic blood oxygenation level-dependent response through combination of functional magnetic resonance imaging and optical recording in gerbil barrel cortex. *J Neurosci* 20, 3328-3338.

Hubbard, E.M., and Ramachandran, V.S. (2005). Neurocognitive mechanisms of synesthesia. *Neuron* 48, 509-520.

Hucho, T., and Levine, J.D. (2007). Signaling pathways in sensitization: toward a nociceptor cell biology. *Neuron* 55, 365-376.

Kernan, M., Cowan, D., and Zuker, C. (1994). Genetic dissection of mechanosensory transduction: mechanoreception-defective mutations of *Drosophila*. *Neuron* 12, 1195-1206.

Knabl, J., Witschi, R., Hosl, K., Reinold, H., Zeilhofer, U.B., Ahmadi, S., Brockhaus, J., Sergejeva, M., Hess, A., Brune, K., et al. (2008). Reversal of pathological pain through specific spinal GABAA receptor subtypes. *Nature* 451, 330-334.

Koester, S.E., and Insel, T.R. (2007). Mouse maps of gene expression in the brain. *Genome biology* 8, 212.

Kurshan, P.T., Oztan, A., and Schwarz, T.L. (2009). Presynaptic $\alpha(2)\delta(3)$ is required for synaptic morphogenesis independent of its $\text{Ca}(2+)$ -channel functions. *Nature neuroscience* 12, 1415-1423.

Lee, T., and Luo, L. (1999). Mosaic analysis with a repressible cell marker for studies of gene function in neuronal morphogenesis. *Neuron* 22, 451-461.

Lumpkin, E.A., and Caterina, M.J. (2007). Mechanisms of sensory transduction in the skin. *Nature* 445, 858-865.

Ly, C.V., Yao, C.K., Verstreken, P., Ohyama, T., and Bellen, H.J. (2008). straightjacket is required for the synaptic stabilization of cacophony, a voltage-gated calcium channel $\alpha(1)$ subunit. *The Journal of cell biology* 181, 157-170.

Manev, H., and Dimitrijevic, N. (2004). *Drosophila* model for in vivo pharmacological analgesia research. *European journal of pharmacology* 491, 207-208.

Melzack, R. (1999). From the gate to the neuromatrix. *Pain Suppl* 6, S121-126.

Ogawa, S., Lee, T.M., Kay, A.R., and Tank, D.W. (1990). Brain magnetic resonance imaging with contrast dependent on blood oxy-

- generation. Proceedings of the National Academy of Sciences of the United States of America 87, 9868-9872.
- Petersen, C.C. (2007). The functional organization of the barrel cortex. Neuron 56, 339-355.
- Pitcher, G.M., Yashpal, K., Coderre, T.J., and Henry, J.L. (1995). Mechanisms underlying antinociception provoked by heterosegmental noxious stimulation in the rat tail-flick test. Neuroscience 65, 273-281.
- Premkumar, L.S. (2010). Targeting TRPV1 as an alternative approach to narcotic analgesics to treat chronic pain conditions. The AAPS journal 12, 361-370.
- Price, D.D. (2000). Psychological and neural mechanisms of the affective dimension of pain. Science (New York, NY 288, 1769-1772.
- Shmuel, A., Yacoub, E., Pfeuffer, J., Van de Moortele, P.F., Adriany, G., Hu, X., and Ugurbil, K. (2002). Sustained negative BOLD, blood flow and oxygen consumption response and its coupling to the positive response in the human brain. Neuron 36, 1195-1210.
- Silva, A.C., Lee, J.H., Aoki, I., and Koretsky, A.P. (2004). Manganese-enhanced magnetic resonance imaging (MEMRI): methodological and practical considerations. NMR in biomedicine 17, 532-543.
- Sokabe, T., Tsujiuchi, S., Kadowaki, T., and Tominaga, M. (2008). Drosophila painless is a Ca²⁺-requiring channel activated by noxious heat. J Neurosci 28, 9929-9938.
- Stuurman, N., Delbecq, J.P., Callaerts, P., and Aebi, U. (1999). Ectopic overexpression of Drosophila lamin C is stage-specific lethal. Experimental cell research 248, 350-357.
- Tegeder, I., Costigan, M., Griffin, R.S., Abele, A., Belfer, I., Schmidt, H., Ehner, C., Nejm, J., Marian, C., Scholz, J., et al. (2006). GTP cyclohydrolase and tetrahydrobiopterin regulate pain sensitivity and persistence. Nature medicine 12, 1269-1277.
- Thulborn, K.R., Waterton, J.C., Matthews, P.M., and Radda, G.K. (1982). Oxygenation dependence of the transverse relaxation time of water protons in whole blood at high field. Biochimica et biophysica acta 714, 265-270.
- Tracey, I., and Mantyh, P.W. (2007). The cerebral signature for pain perception and its modulation. Neuron 55, 377-391.
- Tracey, W.D., Jr., Wilson, R.I., Laurent, G., and Benzer, S.

(2003). painless, a *Drosophila* gene essential for nociception. *Cell* 113, 261-273.

Treede, R.D., Kenshalo, D.R., Gracely, R.H., and Jones, A.K.

(1999). The cortical representation of pain. *Pain* 79, 105-111.

Venken, K.J., Carlson, J.W., Schulze, K.L., Pan, H., He, Y., Spokony, R., Wan, K.H., Koriabine, M., de Jong, P.J., White, K.P., et al. (2009). Versatile P[acman] BAC libraries for transgenesis studies in *Drosophila melanogaster*. *Nature methods* 6, 431-434.

Xu, S.Y., Cang, C.L., Liu, X.F., Peng, Y.Q., Ye, Y.Z., Zhao, Z.Q., and Guo, A.K. (2006). Thermal nociception in adult *Drosophila*: behavioral characterization and the role of the painless gene. *Genes, brain, and behavior* 5, 602-613.

Atlas, S.J., Keller, R.B., Chang, Y., Deyo, R.A., and Singer, D.E. (2001). Surgical and nonsurgical management of sciatica secondary to a lumbar disc herniation: five-year outcomes from the Maine Lumbar Spine Study. *Spine* 26, 1179-1187.

Benzer, S. (1967). BEHAVIORAL MUTANTS OF *Drosophila* ISOLATED BY COUNTERCURRENT DISTRIBUTION. *Proceedings of the National Academy of Sciences of the United States of America* 58, 1112-1119.

Brody, T., Stivers, C., Nagle, J., and Odenwald, W.F. (2002). Identification of novel *Drosophila* neural precursor genes using a differential embryonic head cDNA screen. *Mechanisms of development* 113, 41-59.

Couto, A., Alenius, M., and Dickson, B.J. (2005). Molecular, anatomical, and functional organization of the *Drosophila* olfactory system. *Curr Biol* 15, 1535-1547.

Diatchenko, L., Slade, G.D., Nackley, A.G., Bhalang, K., Sigurdsson, A., Belfer, I., Goldman, D., Xu, K., Shabalina, S.A., Shagin, D., et al. (2005). Genetic basis for individual variations in pain perception and the development of a chronic pain condition. *Human molecular genetics* 14, 135-143.

Dietzl, G., Chen, D., Schnorrer, F., Su, K.C., Barinova, Y., Fellner, M., Gasser, B., Kinsey, K., Oppel, S., Scheiblaue, S., et al. (2007). A genome-wide transgenic RNAi library for conditional gene inactivation in *Drosophila*. *Nature* 448, 151-156.

Grigliatti, T.A., Hall, L., Rosenbluth, R., and Suzuki, D.T. (1973). Temperature-sensitive mutations in *Drosophila melanogaster*. XIV. A selection of immobile adults. *Mol Gen Genet* 120,

107-114.

Hayashi, S., Ito, K., Sado, Y., Taniguchi, M., Akimoto, A., Takeuchi, H., Aigaki, T., Matsuzaki, F., Nakagoshi, H., Tani-mura, T., *et al.* (2002). GETDB, a database compiling expression patterns and molecular locations of a collection of Gal4 enhancer traps. *Genesis* 34, 58-61.

Jourdan, D., Ardid, D., and Eschalier, A. (2001). Automated behavioural analysis in animal pain studies. *Pharmacol Res* 43, 103-110.

Kernan, M., Cowan, D., and Zuker, C. (1994). Genetic dissection of mechanosensory transduction: mechanoreception-defective mutations of *Drosophila*. *Neuron* 12, 1195-1206.

Knabl, J., Witschi, R., Hosl, K., Reinold, H., Zeilhofer, U.B., Ahmadi, S., Brockhaus, J., Sergejeva, M., Hess, A., Brune, K., *et al.* (2008). Reversal of pathological pain through specific spinal GABAA receptor subtypes. *Nature* 451, 330-334.

Ly, C.V., Yao, C.K., Verstreken, P., Ohyama, T., and Bellen, H.J. (2008). *straightjacket* is required for the synaptic stabilization of *cacophony*, a voltage-gated calcium channel α 1 subunit. *The Journal of cell biology* 181, 157-170.

Mummery-Widmer, J.L., Yamazaki, M., Stoeger, T., Novatchkova, M., Bhalerao, S., Chen, D., Dietzl, G., Dickson, B.J., and Knoblich, J.A. (2009). Genome-wide analysis of Notch signalling in *Drosophila* by transgenic RNAi. *Nature*.

Obreja, O., Biasio, W., Andratsch, M., Lips, K.S., Rathee, P.K., Ludwig, A., Rose-John, S., and Kress, M. (2005). Fast modulation of heat-activated ionic current by proinflammatory interleukin 6 in rat sensory neurons. *Brain* 128, 1634-1641.

Obreja, O., Rathee, P.K., Lips, K.S., Distler, C., and Kress, M. (2002). IL-1 beta potentiates heat-activated currents in rat sensory neurons: involvement of IL-1RI, tyrosine kinase, and protein kinase C. *Faseb J* 16, 1497-1503.

Siddiqi, O., and Benzer, S. (1976). Neurophysiological defects in temperature-sensitive paralytic mutants of *Drosophila melanogaster*. *Proceedings of the National Academy of Sciences of the United States of America* 73, 3253-3257.

Tegeder, I., Costigan, M., Griffin, R.S., Abele, A., Belfer, I., Schmidt, H., Ehner, C., Nejm, J., Marian, C., Scholz, J., *et al.* (2006). GTP cyclohydrolase and tetrahydrobiopterin regulate pain sensitivity and persistence. *Nature medicine* 12, 1269-1277.

- Thibault, S.T., Singer, M.A., Miyazaki, W.Y., Milash, B., Dompe, N.A., Singh, C.M., Buchholz, R., Demsky, M., Fawcett, R., Francis-Lang, H.L., et al. (2004). A complementary transposon tool kit for *Drosophila melanogaster* using P and piggyBac. *Nature genetics* 36, 283-287.
- Tracey, W.D., Jr., Wilson, R.I., Laurent, G., and Benzer, S. (2003). *painless*, a *Drosophila* gene essential for nociception. *Cell* 113, 261-273.
- Venken, K.J., Carlson, J.W., Schulze, K.L., Pan, H., He, Y., Spokony, R., Wan, K.H., Koriabine, M., de Jong, P.J., White, K.P., et al. (2009). Versatile P[acman] BAC libraries for transgenesis studies in *Drosophila melanogaster*. *Nature methods* 6, 431-434.
- Verstreken, P., Koh, T.W., Schulze, K.L., Zhai, R.G., Hiesinger, P.R., Zhou, Y., Mehta, S.Q., Cao, Y., Roos, J., and Bellen, H.J. (2003). Synaptojanin is recruited by endophilin to promote synaptic vesicle uncoating. *Neuron* 40, 733-748.
- Vosshall, L.B., Wong, A.M., and Axel, R. (2000). An olfactory sensory map in the fly brain. *Cell* 102, 147-159.
- Zaykin, D.V., Westfall, P.H., Young, S.S., Karnoub, M.A., Wagner, M.J., and Ehm, M.G. (2002). Testing association of statistically inferred haplotypes with discrete and continuous traits in samples of unrelated individuals. *Human heredity* 53, 79-91.
- Kuzniar, R. C. van Ham, S. Pongor, J. A. Leunissen, *Trends Genet* 24, 539 (Nov, 2008).
- Sasaki et al., *Science* 287, 1040 (Feb 11, 2000).
- Patrucco et al., *Cell* 118, 375 (Aug 6, 2004).
- Racz et al., *J Neurosci* 28, 12125 (Nov 12, 2008).
- Dittert et al., *J Neurosci Methods* 82, 195 (Aug 1, 1998).
- L. Vyklicky et al., *J Physiol* 517 (Pt 1), 181 (May 15, 1999)
- Bennett G.J., Xie Y.K., (1988). *Pain*, 33, 87-107.
- Blackburn-Munro G, Erichsen H.K., (2005). *Current Pharm Des*, 11, 2961-2975.
- Butler, S.H., Godefroy, F., Besson, J.-M., Weil-Fugazza, J., (1992). *Pain*, 48; 73-81.
- Hegen, M., Keith, J.C., Collins, M., Nickerson-Nutter, C.L., (2008). *Ann Rheum Dis*, 67: 1505-1515.
- Hsieh, G.C., Chandran, P., Salyers, A.K., Pai, M., Zhu, C.Z., Wensink, E.J., Witte, D.G., Miller, T.R., Mikusa, J.P., Baker, S.J., Wetter, J.M., Marsh, K.C., Hancock, A.A., Cowart, M.D.,

- Esbenshade, T.A., Brioni, J.D., Honore, P., (2010). *Pharmacol Biochem Behav*, 95; 41-50.
- Kontinen V.K., and Meert T.F., (2003). In: eds Dostrovsky J.O., Carr D.B., and Koltzenburg, M., *Prog in Pain Res Management* 24, pp489-498, IASP press, Seattle.
- LaBuda, C.J., and Little, P., (2005) *J Neurosci Meths*, 144, 175-181.
- Meotti, F.C., Missau, F.C., Ferreira, J., Pizzolatti, M.G., Mizuzaki, C., Nogueira, C.W., Santos, A.R.S., (2006). *Biochem Pharmacol*, 72; 1707-17134.
- Millan, M.J., Czlonkowski, A., Morris, B., Stein, C., Arendt, R., Huber, A., et al., (1988). *Pain*, 35, 299-312.
- Schafers, M., Marziniak, M., Sorkin, L.S., Yaksh, T.L., Sommer C., (2004) *Exp Neurol* ., 185, 160-168.
- Staton, P.C., Wilson, A.W., Bountra, C., Chessell, I.P., Day, N.C., (2007). *Eur J Pain'* 11; 283-289.
- Takahashi M., Kawaguchi, M., Shimada, K., Konishi, N., Furuya H., Nakashima, T., (2004). *Neurosci Letts*, 356, 37-40.
- Whiteside, G.T., Adedoyin, A., Leventhal, L., (2008). *Neuropharmacology*, 54, 767-775.
- Jett, M.F., Ramesha, C.S., Brown, C.D., Chiu, S., Emmett, C., Voronin, T., Sun, T., O'Yang, C., Hunter, J.C., Eglen, R.M., Johnson, R.M., (1999). Characterization of the analgesic and anti-inflammatory activities of ketorolac and its enantiomers in the rat. *J Pharmacol Exp Ther*, 288(3):1288-97.
- da Silva Filho A.A., Andrade e Silva M.L., Carvalho J.C., Bastos J.K., (2004). Evaluation of analgesic and anti-inflammatory activities of *Nectandra megapotamica* (Lauraceae) in mice and rats. *J Pharm Pharmacol.*, 56(9):1179-84.
- Card, G.L., England, B.P., Suzuki, Y., Fong, D., Powell, B., Lee, B., Luu, C., Tabrizizad, M., Gillette, S., Ibrahim, P.N., Artis, D.R., Bollag, G., Milburn, M.V., Kim, S.H., Schlessinger, J., Zhang, K.Y., (2004). Structural Basis for the Activity of Drugs that Inhibit Phosphodiesterases. *Structure*, 12(12):2233-47.
- Mehats, C., Andersen, C.B., Filopanti, M., Jin, S.L., and Conti, M. (2002). Cyclic nucleotide phosphodiesterases and their role in endocrine cell signaling. *Trends Endocrinol. Metab.* 13, 29-35.
- Arezzo, J.C., Rosenstock, J., LaMoreaux, L., Pauer, L., (2008),

Efficacy and safety of pregabalin 600 mg/d for treating painful diabetic peripheral neuropathy: a double-blind placebo-controlled trial. *BMC Neurology*, 16;8:33.

Karaman, M.W., Herrgard, S., Treiber, D.K., Gallant, P., Atteridge, C.E., Campbell, B.T., Chan, K.W., Ciceri, P., Davis, M.I., Edeen, P.T., Faraoni, R., Floyd, M., Hunt, J.P., Lockhart, D.J., Milanov, Z.V., Morrison, M.J., Pallares, G., Patel, H.K., Pritchard, S., Wodicka, L.M., Zarrinkar, P.P., (2008). A quantitative analysis of kinase inhibitor selectivity. *Nat Biotechnol*, Jan;26(1):127-32.

Neely et al., (2010). A genome-wide *Drosophila* screen for heat nociception identifies $\alpha 2\delta 3$ as an evolutionarily conserved pain gene. *Cell*. 2010 Nov 12;143(4):628-38.

Claims:

1. FMO3 inhibitor for use in the treatment of pain.
2. FMO3 inhibitor for use according to claim 1, wherein the FMO3 inhibitor is selected from Tenofovir and Methimazole.
3. FMO3 inhibitor for use according to claim 1, wherein the FMO3 inhibitor is selected from a compound comprising a phosphoric acid or ester group and/or a purine radical, the compound being Tenofovir.
4. FRK inhibitor selected from dasatinib, motesanib, Doramapimod, Pelitinib, sorafenib, Vandetanib and Canertinib for use in the treatment of pain.
5. FRK inhibitor for use according to claim 4, wherein the inhibitor is selected from compounds with a K_d of lower than 3000 nM, preferably lower than 2000 nM, especially preferred lower than 1000 nM, selected from dasatinib, motesanib, Doramapimod, Pelitinib, sorafenib and Vandetanib.
6. FRK inhibitor for use according to claim 4, wherein the inhibitor is selected from compounds comprising a substituted pyridine, quinoline, isoquinoline or pyrimidine group, selected from motesanib (AMG-706), Pelitinib (EKB-569), sorafenib (sorafenib), Vandetanib (Vandetanib) and canertinib (CI-1033).
7. FRK inhibitor for use according to claim 4 or 5, wherein the inhibitor is selected from compounds comprising a substituted aniline group with a K_d value less than 1000 nM, selected from dasatinib (dasatinib), motesanib (AMG-706), Doramapimod (BIRB 796), Pelitinib (EKB-569), sorafenib (sorafenib), Vandetanib (Vandetanib).
8. FRK inhibitor for use according to claim 4, wherein the inhibitor is selected from compounds comprising a chlor-, fluor- or chlor- and fluor- substituted aniline group selected from dasatinib, Pelitinib, sorafenib, Vandetanib and canertinib.

9. FRK inhibitor selected from compounds comprising a substituted aniline group, selected from dasatinib (dasatinib), motesanib (AMG-706), doramapimod (BIRB 796), pelitinib (EKB-569), sorafenib (sorafenib), vandetanib (vandetanib), canertinib (CI-1033) and imatinib (STI-571) for use in the treatment of neuropathic pain, preferably trigeminal neuralgia, post-herpetic neuralgia, painful diabetic neuropathy, painful diabetic peripheral neuropathy, diabetic polyneuropathy, such as sciatic pain, radiculopathy, radicular pain, non-inflammatory neuropathic pain or a combination thereof.

10. LPAR3 modulator for use in the treatment of pain.

11. LPAR3 modulator for use according to claim 10, wherein the modulator is selected from compounds comprising N6-Benzyladenosine-5'-phosphate, p-Aminobenzoyl PAB-J acid, NSC161613 and NSC47091.

12. LPAR3 modulator for use according to claim 10, wherein the LPAR3 modulator is an LPAR3 inhibitor.

13. LPAR3 inhibitor for use according to claim 12, wherein the inhibitor is selected from compounds comprising p-Aminobenzoyl PAB-J acid, NSC161613 and NSC47091.

14. PDE4D inhibitor selected from cilomilast, Roflumilast, Filaminast, Piclamilast, V11294, Apremilast, Arofylline, Atizoram, Catramilast, Cimpifylline, Daxalipram, Doxofylline, drotaverin, Efloxate, Etamiphylline, Etazolate, Etofylline, Broncholytine, Irimilast, oglemilast, Choline theophyllinate, Pumafentrine, Revamilast, Ronomilast, Tofimilast, Tolafentrine, Trapidil, GW 842470 (AWD 12-281), CDP-840, YM-976, CI-1018, D-4418, Lirimilast, SCH-351591, RPL-554, IPL-455903 (HT-0712), GSK256066, Zardaverine, Vardenafil, Tetomilast, IC485, L-826,141, ONO-6126, CI-1044, MK-0873, T-2585, R1533 (MEM-1414), Ronomilast, UK-500,001, AN2728, DE-103, Tofisopam, Dextofisopam, Levotofisopam (USAN) for use in the treatment of pain.

15. PDE4D inhibitor of claim 14 comprising a 1,2-dioxy-aryl group with IC50 value of 1100 nM or less, preferably 1050 nM or

less, preferably 1000 nM or less, preferably 950 nM or less, preferably 950 nM or less, preferably 900 nM or less, for use in the treatment of pain, wherein the PDE4D inhibitor is selected from cilomilast (cilomilast), Roflumilast (Roflumilast), Filaminast (Filaminast), Piclamilast (Piclamilast), (V11294), Apremilast (CC-10004), Atizoram (CP80633), Catramilast (Catramilast), Daxalipram (Daxalipram/mesopram), drotaverin (Drotaverine), broncholytine (Glaucine Hydrobromide), oglemilast (GRC3886), Pumafentrine (Pumafentrine), Revamilast (Revamilast), Tolafentrine (Tolafentrine), (CDP-840), (RPL-554), (IPL-455903 (HT-0712)), Zardaverine (Zardaverine), Tetomilast (OPC-6535), (L-826,141), Ronomilast (ELB353), Tofisopam (Tofisopam).

16. PDE4D inhibitor of claim 14 comprising a 1,2-dioxy-aryl group substituted with an alkyl or flour-alkyl group, or 1,2-dioxy-aryl group condensed in a furan ring containing oxygen selected from cilomilast (cilomilast), Roflumilast (Roflumilast), Filaminast (Filaminast), Piclamilast (Piclamilast), (V11294), Apremilast (CC-10004), Daxalipram (Daxalipram/mesopram), drotaverin (Drotaverine), broncholytine (Glaucine Hydrobromide), oglemilast (GRC3886), Pumafentrine (Pumafentrine), Revamilast (Revamilast), Tolafentrine (Tolafentrine), (RPL-554), Zardaverine (Zardaverine), Tetomilast (OPC-6535), (L-826,141), Ronomilast (ELB353), Tofisopam (Tofisopam) for use in the treatment of pain.

17. PDE4D inhibitor of claim 14 comprising a 3,5-dichloropyridine group or a pyridine group that is not condensed in a 2 ring structure, selected from Roflumilast (Roflumilast), Piclamilast (Piclamilast), oglemilast (GRC3886), Revamilast (Revamilast), GW 842470 (AWD 12-281), D-4418, SCH-351591 for use in the treatment of pain.

18. PDE4D inhibitor of claim 14 comprising a quinoline, isoquinoline or pyrimidine group selected from drotaverine (Drotaverine), Pumafentrine (Pumafentrine), Tolafentrine (Tolafentrine), Trapidil (Seoanin), D-4418, SCH-351591, RPL-554, GSK256066, T-2585, Ronomilast (ELB353) for use in the treatment of pain.

19. PDE4D inhibitor of claim 14 comprising an aniline group, preferably carbonyl- or chlor-substituted aniline, selected from Apremilast (CC-10004), Arofylline (LAS31025), CI-1044, T-2585 for use in the treatment of pain.

20. PDE4D inhibitor comprising a purine ring, selected from V11294, Arofylline (LAS31025), Cimpifylline (BRL-61063), Doxofylline (Doxofylline), Etamiphylline (Etamiphylline), Etofylline (Etofylline), Choline theophyllinate (oxtriphyllin), Theophylline (Theophylline) for the treatment of neuropathic pain, especially non-inflammatory neuropathic pain.

21. CAMK1D inhibitor selected from Bosutinib (SKI-606), Pelitinib (EKB-569), EKB-568, midostaurin (PKC-412), tozasertib (MK-0457, VX 680), SU-14813, Ruboxistaurin (LY-333531), CGP-52421, for use in the treatment of pain.

22. CAMK1D inhibitor for use according to claim 21, the inhibitor comprising a chlor-substituted aniline group and is selected from Bosutinib (SKI-606) and Pelitinib (EKB-569).

23. CAMK1D inhibitor selected from bosutinib (SKI-606), pelitinib (EKB-569), EKB-568 and CGP-52421 for use in the treatment of pain.

24. Compound comprising a quinoline or isoquinoline group, selected from Bosutinib, Pelitinib (EKB-569), drotaverin (Drotaverine), Pumafentrine (Pumafentrine), Tolafentrine (Tolafentrine), (D-4418), (SCH-351591), (RPL-554), (GSK256066), (T-2585), Ronomilast (ELB353), preferably the compound being an inhibitor of FRK, PDE4D or CAMK1D, for use in the treatment of pain, preferably neuropathic pain, more preferably non-inflammatory neuropathic pain.

25. Compound comprising a chlor-substituted aniline group, selected from dasatinib (dasatinib), Pelitinib (EKB-569), sorafenib (sorafenib), Canertinib (CI-1033), Arofylline (LAS31025), (T-2585), bosutinib (SKI-606), preferably the compound being an inhibitor of FRK, PDE4D or CAMK1D, for use in the

treatment of pain, preferably neuropathic pain, more preferably non-inflammatory neuropathic pain.

26. dasatinib (dasatinib) for use in the treatment of pain.
27. AMG-706 (motesanib) for use in the treatment of pain.
28. BIRB 796 (Doramapimod) for use in the treatment of pain.
29. EKB-569 (Pelitinib) for use in the treatment of pain.
30. sorafenib (sorafenib) for use in the treatment of pain.
31. Vandetanib (Vandetanib) for use in the treatment of pain.
32. CI-1033 (Canertinib) for use in the treatment of pain.
33. imatinib (STI-571) for use in the treatment of pain.
34. N6-Benzyladenosine-5'-phosphate for use in the treatment of pain.
35. p-Aminobenzoyl PAB-J acid for use in the treatment of pain.
36. NSC161613 for use in the treatment of pain.
37. NSC47091 for use in the treatment of pain.
38. cilomilast (cilomilast) for use in the treatment of pain.
39. Nicotinamide (Nicotinamide) for use in the treatment of pain.
40. Roflumilast (Roflumilast) for use in the treatment of pain.
41. Filaminast (Filaminast) for use in the treatment of pain.
42. Piclamilast (Piclamilast) for use in the treatment of pain.
43. V11294 for use in the treatment of pain.
44. CC-10004 (Apremilast) for use in the treatment of pain.
45. LAS31025 (Arofylline) for use in the treatment of pain.
46. CP80633 (Atizoram) for use in the treatment of pain.
47. Catramilast/Atopik (Catramilast) for use in the treatment of pain.
48. BRL-61063 (Cimpfylline) for use in the treatment of pain.
49. Daxalipram/mesopram (Daxalipram) for use in the treatment of pain.
50. Doxofylline (Doxofylline) for use in the treatment of pain.
51. Drotaverine (drotaverin) for use in the treatment of pain.
52. Efloxate (Efloxate) for use in the treatment of pain.
53. Etamiphylline (Etamiphylline) for use in the treatment of pain.
54. Etazolate (Etazolate) for use in the treatment of pain.

55. Etofylline (Etofylline) for use in the treatment of pain.
56. Glaucine Hydrobromide (Broncholytine) for use in the treatment of pain.
57. GRC3886 (oglemilast) for use in the treatment of pain.
58. oxtriphyllin (Choline theophyllinate) for use in the treatment of pain.
59. Pumafentrine (Pumafentrine) for use in the treatment of pain.
60. Revamilast (Revamilast) for use in the treatment of pain.
61. ronamilast (ELB-353) for use in the treatment of pain.
62. Tofimilast (Tofimilast) for use in the treatment of pain.
63. Tolafentrine (Tolafentrine) for use in the treatment of pain.
64. Seoanin (Trapidil) for use in the treatment of pain.
65. GW 842470 (AWD 12-281) for use in the treatment of pain.
66. CDP-840 for use in the treatment of pain.
67. YM-976 for use in the treatment of pain.
68. CI-1018 for use in the treatment of pain.
69. D-4418 for use in the treatment of pain.
70. Lirimilast (Lirimilast) for use in the treatment of pain.
71. SCH-351591 for use in the treatment of pain.
72. RPL-554 for use in the treatment of pain.
73. IPL-455903 (HT-0712) for use in the treatment of pain.
74. GSK256066 for use in the treatment of pain.
75. Zardaverine (Zardaverine) for use in the treatment of pain.
76. Vardenafil (Vardenafil) for use in the treatment of pain.
77. OPC-6535 (Tetomilast) for use in the treatment of pain.
78. IC485 for use in the treatment of pain.
79. L-826,141 for use in the treatment of pain.
80. ONO-6126 for use in the treatment of pain.
81. CI-1044 for use in the treatment of pain.
82. MK-0873 for use in the treatment of pain.
83. T-2585 for use in the treatment of pain.
84. R1533 (MEM-1414) for use in the treatment of pain.
85. UK-500,001 for use in the treatment of pain.
86. AN2728 for use in the treatment of pain.
87. DE-103 for use in the treatment of pain.
88. Tofisopam (Tofisopam) for use in the treatment of pain.
89. (R)-Tofisopam (Dextofisopam) for use in the treatment of .

pain.

90. (S)-Tofisopam (Levotofisopam (USAN)) for use in the treatment of pain.

91. EKB-568 for use in the treatment of pain.

92. midostaurin (PKC-412) for use in the treatment of pain.

93. tozasertib (MK-0457, VX 680) for use in the treatment of pain.

94. SU-14813 for use in the treatment of pain.

95. lestaurtinib (CEP-701) for use in the treatment of pain.

96. LY-333531 (Ruboxistaurin) for use in the treatment of pain.

97. CGP-52421 for use in the treatment of pain.

98. SKI-606 (Bosutinib) for use in the treatment of pain.

99. Roscovitine (Roscovitine) for use in the treatment of pain.

100. Tenofovir (PMPA) (Tenofovir) for use in the treatment of pain.

101. Methimazole (Methimazole) for use in the treatment of pain.

102. Remofovir (Pradefovir) for use in the treatment of pain.

103. Adefovir dipivoxil (Bis-POM PMEA) (Adefovir) for use in the treatment of pain.

104. Acetazolamide (Acetazolamide) for use in the treatment of pain.

105. Luteolin for use in the treatment of pain.

106. Method of treating or reducing pain in a subject comprising administering a compound of any one of claims 1 to 105 to a subject suffering from pain.

107. Method of preventing pain in a subject comprising administering a compound of any one of claims 1 to 105 to a subject suffering from pain.

108. Use of a compound, modulator or inhibitor as defined in any one of claims 1 to 105 for the manufacture of an analgesic or a medicament for the treatment of pain.

109. The method or use of any one of claims 1 to 108, characterized in that the compound is administered topically, enterally

or parenterally, in particular preferred orally or rectally, intravenously, intraarterially, intramuscularly, subcutaneously, intradermally, intraperitoneally, transdermally, transmucosally or by inhalation.

110. The method or use of any one of claims 1 to 109, characterized in that the subject to be treated is a mammal, preferably a human.

111. The method or use of any one of claims 1 to 110, characterized in that the compound, modulator or inhibitor is provided in a medicament.

112. The method or use of any one of claims 1 to 111, characterized in that the compound, modulator or inhibitor is provided together with a pharmaceutically acceptable carrier or buffer.

113. The method or use of any one of claims 1 to 112, characterized in that the compound, modulator or inhibitor is administered in a therapeutically effective dosage, preferably a dosage of between 0.01 mg/kg and 1 g/kg.

114. Method or use according to any one of claims 1 to 113, wherein pain is selected from or associated with chronic or acute pain or hyperalgesia pain, somatogenic pain, neuropathic pain, psychogenic pain, heat induced pain, physical pain, nociception, hyperalgesia, rheumatic pain, headache, low back pain, pelvic pain, myofascial pain, vascular pain, migraine, wound associated pain, inflammatory pain, arthritic pain, diabetic pain, pain from cancer, somatic visceral pain, fibromyalgia, postoperative pain, phantom pain, trigeminal neuralgia, post-herpetic neuralgia, painful diabetic neuropathy, painful diabetic peripheral neuropathy, diabetic polyneuropathy, sciatic pain, radiculopathy, radicular pain, lumbar pain or any combination thereof.

115. Method or use according to claim 114, wherein pain is chronic pain.

116. Method or use according to claim 114 or 115, wherein pain is neuropathic pain.

117. Method or use according to claim 114, wherein pain is inflammatory pain.

118. Method or use according to claim 114, 115 or 116, wherein pain is non-inflammatory pain.