5-O-SUBSTITUTED 3-N-PHENYL-1,3,4-OXADIAZOLONES FOR MEDICAL USE

The present invention relates to compounds having a 5-O-substituted 3-N-phenyl-1,3,4-oxadiazolone structural unit which have unexpectedly high level of inhibition of FAAH (fatty acid amide hydrolase).

FAAH is an integral membrane protein (IMP) that hydrolyzes bioactive amides, such as the endocannabinoid anandamide, which is an agonist of cannabinoid receptors and TRPV1 vanilloid receptors to free fatty acid and ethanolamine, see e.g. McKinney M.K., Cravatt B.F., *Ann. Rev. Biochem.* **74**:411 (2005).

Due to its ability to regulate anandamide levels, FAAH is currently viewed as an attractive drug target. Examples of inhibitors of FAAH include PMSF (phenylmethylsulfonylfluoride), MAFP (methoxyarachidonylfluorophosphonate), and ATMK (arachidonoyltrifluoromethylketone), while URB597 ([3-(3-carbamoylphenyl)phenyl] N-cyclohexylcarbamate) is widely regarded as the current "gold standard" FAAH inhibitor. In pre-clinical laboratory tests URB597 was found to increase the production of endocannabinoids resulting in measurable antidepressant and analgesic effects, see e.g. Russo R., et al, *J Pharmacol Exp Ther.* 322(1):236-42 (2007).

FAAH inhibition is considered to play an important role in a wide variety of medical consitions, see for example Pacher et al *Pharmacol. Rev.* 58:389-462 (2006) which is fully incorporated into the description by reference thereto.

FAAH inhibition has been implicated in the following conditions:

(i) pain, in particular acute or chronic neurogenic pain such as migraine and neuropathic pain (for example diabetic neuropathic pain, post-herpetic neuralgia, trigeminal neauralgia); acute or chronic pain associated with inflammatory diseases such as arthritis, rheumatoid arthritis, osteoarthritis, spondylitis, gout, vasculitis, Crohn's disease, and irritable bowel syndrome; acute or chronic peripheral pain;

(ii) dizziness, vomiting, and nausea, in particular resulting from chemotherapy;

(iii) eating disorders, in particular anorexia and cachexia of various natures;

(iv) neurological and psychiatric pathologies such as tremors, dyskinesias, dystonias, spasticity, obsessive-compulsive behaviour, Tourette's syndrome, all forms of depression and anxiety of any nature and origin, mood disorders, and psychoses;

(v) acute and chronic neurodegenerative diseases such as Parkinson's disease, Alzheimer's disease, senile dementia, Huntington's chorea, lesions related to celebral ischaemia and to cranial and medullary trauma;

(vi) epilepsy;

(vii) sleep disorders, including sleep apnoea;

(viii) cardiovascular diseases such as heart failure, hypertension, cardiac arrhythmias, arteriosclerosis, heart attack, cardiac ischaemia, and renal ischaemia;

(ix) cancers, for example benign skin tumours, brain tumours and papillomas, prostate tumours, and cerebral tumours (glioblastomas, medulloepitheliomas, medulloblastomas, neuroblastomas, tumours of embryonic origin, astrocytomas, astroblastomas, ependymomas, oligodendrogliomas, plexus tumour, neuroepitheliomas, epiphyseal tumour, ependymoblastomas, malignant meningiomas, sarcomatosis, malignant melanomas, and schwannomas);

(x) disorders of the immune system, in particular autoimmune diseases, such as psoriasis, lupus erythematosus, diseases of the connective tissue or collagen diseases, Sjögren's syndrome, ankylosing spondylitis, undifferentiated spondylitis, Behcet's disease, autoimmune haemolytic anaemia, multiple sclerosis, amylotrophic lateral sclerosis, amyloidosis, graft rejection, diseases affecting the plasmacytic line, allergic diseases; immediate or delayed hypersensitivity, allergic rhinitis or conjunctivitis, contact dermatitis;

(xi) parasitic, viral or bacterial infectious diseases such as AIDS, and meningitis;

(xii) inflammatory diseases, in particular joint diseases such as arthritis, rheumatoid arthritis, osteoarthritis, spondylitis, gout, vasculitis, Crohn's disease, irritable bowel syndrome;

(xiii) osteoporosis;

(xiv) eye conditions such as ocular hypertension, and glaucoma;

(xv) pulmonary conditions including diseases of the respiratory tracts, bronchospasm, coughing, asthma, chronic bronchitis, chronic obstruction of the respiratory tract, and emphysema;

(xvi) gastrointestinal diseases such as irritable bowel syndrome, inflammatory intestinal disorders, ulcers, diarrhoea, urinary incontinence and bladder inflammation.

It was found that compounds having a 5-O-substituted 3-N-phenyl-1,3,4-oxadiazolone structural unit have unexpectedly high level of inhibition of FAAH, making these compounds promising candidates for medicaments for the treatment or prevention of FAAH-related medical conditions. Furthermore, it was confirmed that this activity was also present in *in vivo* tests.

Additionally in these *in vivo* tests, it was surprisingly found that compounds having a 5-O-substituted 3-N-phenyl-1,3,4-oxadiazolone structural unit show a FAAH inhibitory activity that is peripherally selective over activity in the CNS. Administration of these compounds is therefore expected to reduce the central nervous side effects seen with FAAH inhibitors that are not selective for the perhiphery.

Thus, the compounds of the present invention may be used to treat the above-mentioned conditions as well as in the preparation of medicaments to treat such methods. The invention also includes methods of treating such diseases comprising administering a

compound of the invention to a patient in need thereof, as well as pharmaceutical compositions containing a compound or compounds of the present invention.

The most preferred envisaged use for the compounds of the invention is the treatment of pain, in particular:

- the treatment of acute or chronic neurogenic pain, for example, migraine, and neuropathic pain, including diabetic neuropathic pain, post-herpetic neuralgia, trigeminal neauralgia;

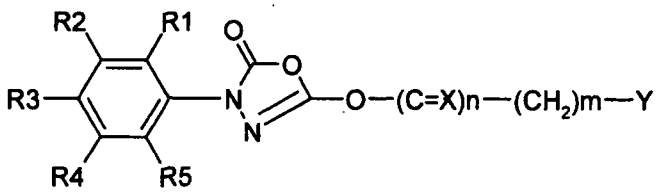
- acute or chronic pain associated with inflammatory diseases, such as arthritis, rheumatoid arthritis, osteoarthritis, spondylitis, gout, vasculitis, Crohn's disease, irritable bowel syndrome; and

- acute or chronic peripheral pain.

As used herein, the term treatment and variations such as 'treat' or 'treating' refers to any regime that can benefit a human or non-human animal. The treatment may be in respect of an existing condition or may be prophylactic (preventative treatment). Treatment may include curative, alleviation or prophylactic effects. Treatment may prevent or delay the onset, retard the progression or ameliorate the symptoms of the disease or condition.

5-O-substituted 3-N-phenyl-1,3,4-oxadiazolones are described in several publications such as US 5,093,343, US 5,236,939, US 4,076,824, WO 03/043997 A1, EP 1 263 745 B1, WO 03/072098 A1, WO 01/17981 A1, WO 03/072555 A1 and JP-A 48 58 140. However, none of these publications is concerned with inhibition of FAAH or the treatment of FAAH-related medical conditions.

In one embodiment, the present invention relates to a compound of formula (I),



(I),

wherein

R^1 to R^5 independently from each other represent:

hydrogen;

C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy, wherein each is optionally substituted once or several times by

C_1-C_6-alkyl; C_1-C_6-alkoxy; C_6-C_{10}-aryloxy; CO_2H; SO_3H; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3;

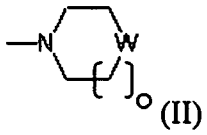
CO_2H;

SO_3H;

amino;

amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl;

a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

$CONH_2$;

SO_2NH_2;

$CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_6-alkyl and wherein in the case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings;

thiol;

hydroxyl;

nitro;

cyano;

fluorosulfonyl;

halogen selected from fluoro, chloro, bromo or iodo;

CF_3;

OCF_3; or

a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by

C_1-C_6-alkyl; C_1-C_6-alkoxy; COOH; SO_3H; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and

C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3;

and wherein any two or more of R^1 to R^5 may be combined to form anellated saturated, unsaturated or aromatic homo- or hetero-ring systems;

n represents 0 or 1; m represents 0, 1, 2, 3, 4, 5 or 6;

X represents O or S;

Y represents:

a) hydrogen;

b) C_1-C_{18}-alkyl, mono or polyunsaturated C_2-C_{18}-alkylene, C_3-C_8-cycloalkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy, or a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, wherein each is optionally substituted once or several times by:

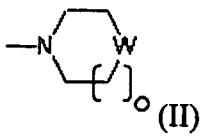
b1) C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy; wherein each is optionally substituted once or several times by C_1-C_6-alkyl; C_1-C_6-alkoxy; $CONH_2$, SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with C_1-C_6-alkyl; SO_3H; CO_2H; amino; amino substituted one or more times with residues

selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; or OCF_3;

wherein several of the substituents in b1) may be combined to form anellated saturated, unsaturated or aromatic homo- or hetero-ring systems;

or by

b2) hydroxy; thiol; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; CO_2H; SO_3H; OCF_3; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_6-alkyl and wherein in the case of a di-C_1-C_6-alkyl-substituted amino functionality, the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; or a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

or by

b3) a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by C_1-C_6-alkyl; C_1-C_6-alkoxy; COOH; SO_3H; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl,

C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3;

c) SO_3H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_6-alkyl and wherein in the case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; thiol; hydroxyl; nitro; cyano; fluorosulfonyl; halogen selected from fluoro, chloro, bromo or iodo; CF_3; or OCF_3;

or a stereoisomer, pharmaceutically acceptable salt or ester, or prodrug thereof.

A further embodiment relates to the use of the above-described compound for the inhibition of fatty acid amide hydrolase (FAAH) and also for the treatment of medical conditions which are positively influenced by the inhibition of FAAH. As inter alia indicated in the article by Pacher et al, *Pharmacol. Rev.* 58:389-462 (2006), the above compounds are in particular indicated for the treatment of the above-mentioned diseases and medical conditions.

The present invention relates also to a pharmaceutical composition comprising a compound of the above formula (I) or an enantiomer, pharmaceutically acceptable salt or a prodrug thereof, as well as to a method for treating the above-mentioned diseases and conditions by administering a pharmaceutically active amount of a compound of above formula (I), an enantiomer, pharmaceutically acceptable salt or a prodrug thereof.

Within the meaning of this application, the term C_1-C_4-alkyl represents preferably methyl, ethyl, n-propyl, isopropyl, n-butyl, sec-butyl, and tert-butyl.

Within the meaning of this application, the term C_1-C_6-alkyl represents preferably methyl, ethyl, n-propyl, isopropyl, n-butyl, sec-butyl, tert-butyl, pentyl or hexyl.

Within the meaning of this application, the term C_1-C_{18}-alkyl represents preferably methyl, ethyl, n-propyl, isopropyl, n-butyl, sec-butyl, tert-butyl, pentyl, hexyl, octyl, decyl, dodecyl, tetradecyl and octadecyl.

Within the meaning of this application, the term mono or polyunsaturated C_2-C_{18}-alkylene preferably represents ethenyl, n-propenyl, isopropenyl, n-butenyl, sec-butenyl, tert-butenyl, pentenyl, hexenyl, octenyl, decenyl, dodecenyl, tetradecenyl, octadecenyl, dodecdienyl, tetradecdienyl and octadecdienyl.

Within the meaning of this application, the term C_3-C_8-cycloalkyl preferably represents cyclopropyl, cyclobutyl, cyclopentyl or cyclohexyl.

Within the meaning of this application, the term C_6-C_{10}-aryl preferably represents phenyl, pentalenyl, indenyl, indanyl, isoindolinyl, chromanyl, naphthyl, fluorenyl, anthryl, phenanthryl or pyrenyl.

Within the meaning of this application, the terms C_6-C_{10}-aryl-C_1-C_8-alkyl, C_6-C_{10}-aryl-C_1-C_6-alkyl and C_6-C_{10}-aryl-C_1-C_4-alkyl preferably represent phenyl or naphthyl being substituted with methyl, ethyl, propyl or butyl. Particularly preferred residues are benzyl and phenethyl.

Within the meaning of this application, the term C_1-C_4-alkoxy preferably represents methoxy, ethoxy, n-propoxy, isopropoxy, n-butoxy, sec-butoxy, and tert-butoxy.

Within the meaning of this application, the term C_1-C_6-alkoxy preferably represents methoxy, ethoxy, n-propoxy, isopropoxy, n-butoxy, sec-butoxy, tert-butoxy, pentoxy or hexoxy.

Within the meaning of this application, the term C_6-C_{10}-aryloxy preferably represents phenoxy, naphthoxy, indenoxy, fluorenoxy or phenanthroxy.

Within the meaning of this application, the terms C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_6-C_{10}-aryl-C_1-C_6-alkoxy and C_6-C_{10}-aryl-C_1-C_4-alkoxy preferably represent benzoxy, phenethoxy, phenpropoxy, or phenbutoxy. Particularly preferred residues are benzoxy and phenethoxy.

Within the meaning of this application, the term C_1-C_6-alkoxycarbonyl preferably represents methoxycarbonyl, ethoxycarbonyl, n-propoxycarbonyl, isopropoxycarbonyl or butoxycarbonyl.

Within the meaning of this application, the term C_6-C_{10}-aryloxycarbonyl preferably represents phenoxycarbonyl or naphthoxycarbonyl.

Within the meaning of this application, the term C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl preferably represents represents benzoxycarbonyl or phenethoxycarbonyl.

Within the meaning of this application, the term C_1-C_6-alkylcarbonyl preferably represents methylcarbonyl, ethylcarbonyl, n-propylcarbonyl, isopropylcarbonyl or butylcarbonyl.

Within the meaning of this application, the term C_6-C_{10}-arylcarbonyl preferably represents phenylcarbonyl or naphthylcarbonyl.

Within the meaning of this application, the term C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl preferably represents benzylcarbonyl or phenethylcarbonyl.

Within the meaning of this application, the term C_1-C_6-alkylcarboxy preferably represents methylcarboxy, ethylcarboxy, n-propylcarboxy, isopropylcarboxy or butylcarboxy.

Within the meaning of this application, the term C_6-C_{10}-arylcarboxy preferably represents phenylcarboxy or naphthylcarboxy.

Within the meaning of this application, the term C_1-C_6-alkylmercaptyl preferably represents methylmercaptyl, ethylmercaptyl, n-propylmercaptyl, isopropylmercaptyl or butylmercaptyl.

Within the meaning of this application, the term C_6-C_{10}-arylmercaptyl preferably represents phenylmercaptyl or naphthylmercaptyl.

Within the meaning of this application, the term C_1-C_6-alkylmercaptocarbonyl preferably represents methylmercaptocarbonyl, ethylmercaptocarbonyl, n-propylmercaptocarbonyl, isopropylmercaptocarbonyl or butylmercaptocarbonyl.

Within the meaning of this application, the term C_3-C_8-cycloalkylmercaptocarbonyl preferably represents cyclopropylmercaptocarbonyl, cyclobutylmercaptocarbonyl, cyclopentylmercaptocarbonyl or cyclohexylmercaptocarbonyl.

Within the meaning of this application, the term C_6-C_{10}-arylmercaptocarbonyl preferably represents phenylmercaptocarbonyl or naphthylmercaptocarbonyl.

Within the meaning of this application, the term C_1-C_6-alkylmercaptocarboxy preferably represents methylmercaptocarboxy, ethylmercaptocarboxy, n-propylmercaptocarboxy, isopropylmercaptocarboxy or butylmercaptocarboxy.

Within the meaning of this application, the term C_6-C_{10}-arylmercaptocarboxy preferably represents phenylmercaptocarboxy or naphthylmercaptocarboxy.

Within the meaning of this application, the term C_1-C_6-alkylsulfonyl preferably represents methylsulfonyl, ethylsulfonyl, n-propylsulfonyl, n-butylsulfonyl, sec-butylsulfonyl, tert-butylsulfonyl, pentylsulfonyl or hexylsulfonyl.

Within the meaning of this application, the term C_6-C_{10}-arylsulfonyl preferably represents phenylsulfonyl or naphthylsulfonyl.

Within the meaning of this application, the term C_1-C_6-alkylsulfoxy preferably represents methylsulfoxy, ethylsulfoxy, n-propylsulfoxy, n-butylsulfoxy, sec-butylsulfoxy or tert-butylsulfoxy.

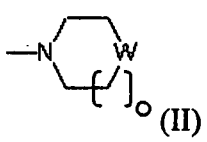
Within the meaning of this application, the term C_6-C_{10}-arylsulfoxy preferably represents phenylsulfoxy or naphthylsulfoxy.

Furthermore, it is preferred in alternative embodiments of the invention that the above-mentioned substituents are optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, CO_2H, $CONH_2$, SO_2NH_2, SO_3H, amino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3. In this definition of optional substituents, C_1-C_6-alkyl, C_1-C_6-alkoxy, and C_6-C_{10}-aryloxy preferably represent the same residues as mentioned above.

Within the meaning of this application, the term "optionally substituted once or several times by" is meant to include no substitution, single substitution or multiple substitution with one or more of the mentioned optional substituents. In case of a multiple substitution, the substituents can be selected independently from each other.

Within the meaning of this application, amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_6-C_{10}-aryl-C_1-C_8-alkyl ,C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl is preferably represented by an amino group that is once or twice and independently from each other substituted by methyl, ethyl, n-propyl, isopropyl, n-butyl, sec-butyl, tert-butyl, pentyl or hexyl in case of C_1-C_6-alkyl; by phenyl, benzyl or phenethyl in case of C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_6-C_{10}-aryl-C_1-C_6-alkyl, or C_6-C_{10}-aryl-C_1-C_8-alkyl; by methylcarbonyl, ethylcarbonyl, or phenylcarbonyl in case of C_1-C_6-alkylcarbonyl and C_6-C_{10}-arylcarbonyl; and by methylsulfonyl, ethylsulfonyl or phenylsulfonyl in case of C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl.

Within the meaning of this application, the term "disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro preferably represents piperidinyl, piperazinyl, pyrrolidinyl, morpholinyl, N-methyl piperazine or 2,2,6,6-tetramethyl piperidinyl.

Within the meaning of this application, $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl or C_6-C_{10}-aryl-C_1-C_6-alkyl and wherein in case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings is preferably represented by the respective residues derivable from N,N-dimethylamide, N-methylamide, N-ethylamide, N-phenylamide, N,N-dimethylsulfonamide, N-methylsulfonamide, N-ethylsulfonamide, and N-phenylsulfonamide. In case of an alkyl-disubstitution of the amino functionality, it is also a preferred alternative that both residues are combined to form 5 or 6-membered rings. Examples of such amino functionalities include but are not limited to pyrrolidin and piperidine.

Within the meaning of this application, the term "a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by C_1-C_6-alkyl; C_1-C_6-alkoxy; COOH; SO_3H; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3"

is preferably represented by a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms containing one to four heteroatoms selected from N, O or S. Examples of such preferred saturated, unsaturated or aromatic heterocycles of up to 10 atoms include but are not limited to benzimidazole, benzofuran, benzothiophene, benzoxazole,

benzothiazole, carbazole, cinnoline, dioxin, dioxane, dioxolane, dithiane, dithiazine, dithiazole, dithiolane, furan, imidazole, imidazoline, imidazolidine, indole, indoline, indolizine, indazole, isoindole, isoquinoline, isoxazole, isothiazole, morpholine, napthyridine, oxazole, oxadiazole, oxathiazole, oxathiazolidine, oxazine, oxadiazine, phenazine, phenothiazine, phenoxazine, phthalazine, piperazine, piperidine, pteridine, purine, pyran, pyrazine, pyrazole, pyrazoline, pyrazolidine, pyridazine, pyridine, pyrimidine, pyrrole, pyrrolidine, pyrroline, quinoline, quinoxaline, quinazoline, quinolizine, tetrahydrofuran, tetrazine, tetrazole, thiophene, thiadiazine, thiadiazole, thiatriazole, thiazine, thiazole, thiomorpholine, thianaphthalene, thiopyran, triazine, triazole, and trithiane in all their isomeric configurations. These heterocycles may be substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, COOH, SO_3H, $CONH_2$, SO_2NH_2, $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino, amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3. Particluarly preferred optional substituents are methyl, methoxy, amino, hydroxy, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 and OCF_3.

The most preferred saturated, unsaturated or aromatic heterocyclic ring systems of up to 10 atoms comprise 2-pyridine, 3-pyridine and 4-pyridine, all three optionally substituted with one or more residues selected from methyl, amino, fluoro, chloro or CF_3; and N-linked pyrrole, optionally substituted with one or more residues selected from methyl, amino, fluoro, chloro or CF_3.

In further embodiments of the invention, two or more of R^1 to R^5 may be combined to form anellated saturated, unsaturated or aromatic homo- or hetero-ring sytsems. Examples of such ring systems include but are not limited to benzimidazole, benzofuran, benzothiophene, benzoxazole, and benzothiazole.

It is preferred that, in the above formula (I), R^1 to R^5 independently from each other represent

hydrogen;

hydroxyl;

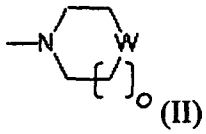
C_1-C_6-alkyl, C_6-C_{10}-aryl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_6-alkoxy, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, wherein each is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, hydroxy, fluoro, chloro, bromo, cyano, CF_3 or OCF_3;

amino;

amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl;

1-pyrrolyl, 2-pyrrolyl or 3-pyrrolyl, optionally substituted with one or more residues selected from C_1-C_6-alkyl, amino, fluoro, chloro or CF_3,

a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

$CONH_2$;

SO_2NH_2;

$CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with residues selected from C_1-C_6-alkyl or C_6-C_{10}-aryl;

fluoro;

chloro;

bromo;

CF_3; or

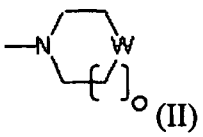
OCF_3.

It is further preferred that, in the above formula (I), one or more of R^1 to R^5 represent hydrogen, fluorine or chlorine. It is more preferred that either R^1 or R^5 represents hydrogen or fluorine. It is most preferred that either R^1 or R^5 represents fluorine.

It is further preferred that, in the above formula (I), one or more of R^1 to R^5 represent hydroxy; C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_6-alkoxy, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, each of which is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, amino, C_1-C_4-alkylamino, di-C_1-C_4-alkylamino, $CONH_2$ or SO_2NH_2 optionally substituted once or twice with C_1-C_6-alkyl or C_6-C_{10}-aryl, hydroxy, fluoro, chloro, bromo, cyano, CF_3 or OCF_3.

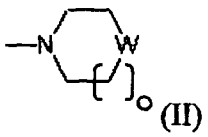
It is more preferred that one of R^2, R^3 or R^4 represents hydroxy; C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_6-alkoxy, each of which is optionally substituted once or several times by C_1-C_4-alkyl, C_1-C_4-alkoxy, amino, C_1-C_4-alkylamino, di-C_1-C_4-alkylamino, $CONH_2$ or SO_2NH_2 optionally substituted once or twice with C_1-C_6-alkyl or C_6-C_{10}-aryl, hydroxy, fluoro, chloro, or bromo.

It is further preferred that, in the above formula (I), one or more of R^1 to R^5 represent amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl; or a disubstituted amino of the following formula (II)


(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_4-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_4-alkyl, fluoro or chloro.

It is more preferred that one of R^2, R^3 or R^4 represents amino; amino substituted once or twice with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl; or a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_4-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_4-alkyl, fluoro or chloro.

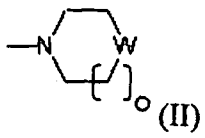
It is further preferred that, in the above formula (I), wherein n represents 0; m represents 0, 1, 2, 3, 4, 5 or 6; and Y represents C_3-C_6-cycloalkyl or C_6-C_{10}-aryl, each of which is optionally substituted once or several times by:

a) C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_4-alkoxy, wherein each is optionally substituted once or several times by;

C_1-C_6-alkyl; C_1-C_6-alkoxy; COOH; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 substituted once or twice with C_1-C_6-alkyl or C_6-C_{10}-aryl; SO_3H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3;

or by

b) hydroxy; thiol; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; OCF_3; CO_2H; SO_3H; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted once or several times with C_1-C_6-alkyl or phenyl; a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_4-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_4-alkyl, fluoro or chloro;

or by

c) a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by

C_1-C_6-alkyl; C_1-C_6-alkoxy; COOH; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 substituted once or twice with C_1-C_6-alkyl or C_6-C_{10}-aryl; SO_3H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3.

It is more preferred that n represents 0; m represents 0 or 1; and Y represents a phenyl, 1-naphthyl, 2-naphthyl, 2-pyridinyl, 3-pyridinyl, or 4-pyridinyl ring system.

It is even more preferred in this aspect that Y is substituted once or several times by C_1-C_4-alkyl; phenyl; C_1-C_4-alkoxy; hydroxy; fluoro; chloro; bromo; CF_3; OCF_3; $CONH_2$ or SO_2NH_2, optionally substituted once or twice with C_1-C_4-alkyl, wherein these optional C_1-C_4-alkyl residues may be combined to form 5 or 6-membered rings; or amino.

It is still more preferred in this aspect that m represents 0 and Y represents phenyl which is substituted once or twice by hydroxy, fluoro, chloro or bromo.

It is most preferred in this aspect that m represents 0 and Y represents phenyl which is substituted in the 4-position by fluoro, in the 4-position by chloro, in the 2- and 4-position by fluoro, in the 2- and 4-position by chloro, or in the 4-position by phenyl.

It is particularly preferred that, in the above formula (I), m is 0; n is 0; Y represents phenyl substituted once or twice by fluoro, chloro or bromo; and any one of R^2 to R^4 represents OR^7 wherein R^7 is selected from hydrogen and C_1-C_4-alkyl.

It is also very preferred that, in the above formula (I) m is 0; n is 0; Y represents phenyl which is substituted in the 4-position by fluoro, in the 4-position by chloro, in the 2- and 4-position by fluoro, or in the 2- and 4-position by chloro and that any one of R^2 to R^4 represents OR^7 wherein R^7 is selected from hydrogen and C_1-C_4-alkyl.

It is also very preferred that in the above formula (I) m is 0; n is 0; Y represents phenyl substituted once or twice by fluoro, chloro or bromo and that R^3 or R^3 and R^4 represent hydroxy.

It is also very preferred that in the above formula (I) m is 0; n is 0; Y represents phenyl which is substituted in the 4-position by fluoro, in the 4-position by chloro, in the 2- and 4-position by fluoro, or in the 2- and 4-position by chloro and that R^3 or R^3 and R^4 represent hydroxy.

It is particularly preferred that in the above formula (I), m is 0; n is 0; Y represents phenyl substituted once or twice by fluoro, chloro or bromo; any one of R^2 to R^4 represents OR^7 wherein R^7 is selected from hydrogen and C_1-C_4-alkyl; and R^1 represents hydrogen or fluorine.

It is particularly preferred that in the above formula (I) m is 0; n is 0; Y represents phenyl which is substituted in the 4-position by fluoro, in the 4-position by chloro, in the 2- and 4-position by fluoro, or in the 2- and 4-position by chloro; that any one of R^2 to R^4 represents OR^7 wherein R^7 is selected from hydrogen and C_1-C_4-alkyl; and that R^1 represents hydrogen or fluorine.

It is particularly preferred that in the above formula (I) m is 0; n is 0; Y represents phenyl substituted once or twice by fluoro, chloro or bromo; that R^3 or R^3 and R^4 represent hydroxyl; and that R^1 represents hydrogen or fluorine.

It is particularly preferred that in the above formula (I) m is 0; n is 0; Y represents phenyl which is substituted in the 4-position by fluoro, in the 4-position by chloro, in the 2- and 4-position by fluoro, or in the 2- and 4-position by chloro; that R^3 or R^3 and R^4 represent hydroxyl; and that R^1 represents hydrogen or fluorine.

Furthermore, it is also preferred that in the above formula (I), when n=0, m=0 or 1, Y represents C_6-C_{10}-aryl, preferably phenyl; benzyl, phenethyl, phenpropyl, phenbutyl or phenhexyl, which is optionally substituted once or several times by

a) C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, hydroxyl, CO_2H, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy;

each of which is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, COOH; $CONH_2$, optionally substituted once or twice with C_1-C_6-alkyl; SO_3H, amino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3;

wherein several of these optional substituents may be combined to form anellated saturated, unsaturated or aromatic homo- or hetero-ring systems; or

b) a saturated, unsaturated or aromatic heterocycle optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, COOH; $CONH_2$, optionally substituted once or twice

with C_1-C_6-alkyl; SO_3H, amino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3;

c) SO_3H, amino, amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; $CONH_2$, SO_2NH_2, $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl; thiol, hydroxyl, nitro, cyano, fluorosulfonyl, halogen selected from fluoro, chloro, bromo or iodo; CF_3, OCF_3.

It is also preferred that in the above formula (I) n=0 and m=0 or 1.

It is also preferred that R^1 to R^5 independently from each other represent hydrogen, hydroxyl, C_1-C_4-alkyl, C_6-C_{10}-aryl, C_1-C_4-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_4-alkoxy, COOH, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy, SO_3H, amino, amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl, thiol, hydroxyl, nitro, cyano, fluorosulfonyl; halogen selected from fluoro, chloro, bromo or iodo; CF_3, OCF_3; or a saturated, unsaturated or aromatic heterocycle optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, COOH, SO_3H, amino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3.

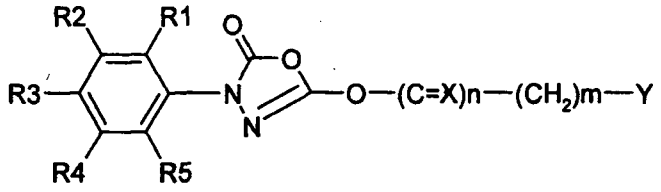
More preferably, R^1 to R^5 are selected from hydroxyl, methyl, tert-butyl, phenyl, methoxy, ethoxy, phenoxy, amino, thiol, hydroxyl, cyano, fluoro, chloro, bromo, nitro, CF_3, OCF_3, pyridine, $CONH_2$, SO_2NH_2, tetrazole or triazole.

It is also preferred that any one of R^1 to R^5 is phenyl further substituted once or several times by hydroxyl, C_1-C_6-alkoxy, COOH, SO_3H, amino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3.

It is also preferred that in formula (I), Y represents phenyl or benzyl which is substituted in ortho-, meta- and/or para-positions by C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, hydroxyl, nitro, amino, $CONH_2$, SO_2NH_2, fluoro, chloro or OCF_3. Even more preferably, Y represents phenyl which is substituted once, twice or three times in ortho- and/or para-positions with substituents independently selected from methoxy, ethoxy, tert-butoxy, phenoxy, hydroxy, nitro, $CONH_2$, SO_2NH_2, fluoro, chloro or OCF_3.

It is also preferred that in formula (I), when n=0 and m=0 or 1, R^1 to R^5 are selected from methyl, tert-butyl, phenyl, methoxy, ethoxy, phenoxy, amino, thiol, hydroxyl, cyano, fluoro, chloro, bromo, nitro, CF_3, OCF_3, pyridine, $CONH_2$, SO_2NH_2, tetrazole, triazole or phenyl further substituted once or several times by C_1-C_6-alkoxy, COOH, SO_3H, amino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3, and Y represents phenyl which is substituted in ortho- and/or para-positions by C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, hydroxyl, nitro, $CONH_2$, SO_2NH_2, fluoro, chloro or OCF_3.

In an alternative embodiment, the present invention relates to a compound of formula (I),



(I),

wherein

R^1 to R^5 independently from each other represent:

hydrogen;

C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy,

C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy, wherein each is optionally substituted once or several times by

C_1-C_6-alkyl; C_1-C_6-alkoxy; C_6-C_{10}-aryloxy; CO_2H; SO_3H; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3;

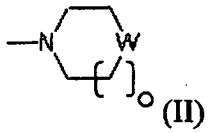
CO_2H;

SO_3H;

amino;

amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl;

a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

$CONH_2$;

SO_2NH_2;

$CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_6-alkyl and wherein in the case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings;

thiol;

hydroxyl;

nitro;

cyano;

fluorosulfonyl;

halogen selected from fluoro, chloro, bromo or iodo;

CF_3;

OCF_3; or

a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by

C_1-C_6-alkyl; C_1-C_6-alkoxy; COOH; SO_3H; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3;

and wherein any two or more of R^1 to R^5 may be combined to form anellated saturated, unsaturated or aromatic homo- or hetero-ring systems;

n represents 0; m represents 0;

Y represents phenyl which is optionally substituted once or several times by

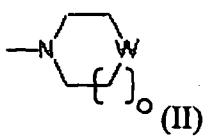
a) C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy;

each of which is optionally substituted once or several times by C_1-C_6-alkyl; C_1-C_6-alkoxy; $CONH_2$ or SO_2NH_2, optionally substituted once or twice with C_1-C_6-alkyl; SO_3H; CO_2H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3;

wherein several of these optional substituents may be combined to form anellated saturated, unsaturated or aromatic homo- or hetero-ring systems; or

b) a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by C_1-C_6-alkyl; C_1-C_6-alkoxy; COOH; $CONH_2$ or SO_2NH_2, optionally substituted once or twice with C_1-C_6-alkyl; SO_3H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3; or

c) hydroxy; thiol; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; OCF_3; CO_2H; SO_3H; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_4-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_4-alkyl, fluoro or chloro;

with the proviso that

a) R^2 or R^4 do not represent the substituent $C(=A)$-$N(B)$-SO_2-NR^6R^7, wherein A represents O or S, B represents hydrogen, cyano, C_1-C_6-alkyl, C_1-C_6-alkoxy-alkyl, C_3-C_7-cycloalkyl, C_3-C_6-alkenyl, C_3-C_6-alkynyl or optionally substituted benzyl derivatives, and R^6 and R^7 independently from each other represent hydrogen or an organic residue, or together an organic cyclic structure; that

b) R^1 to R^5 independently from each other do not represent hydrogen, fluoro, bromo, chloro, iodo or an alkyl radical when Y represents unsubstituted phenyl; that

c) R^2 or R^4 do not represent a pyrazol-3-yl-derivative; and that

d) the phenyl ring substituted with R^1 to R^5 and Y do not represent the following combinations:

phenyl ring substituted with R^1 to R^5	Y
2-chlorophenyl	4-chlorophenyl
2,3-dimethylphenyl	4-chlorophenyl
2,4-dichlorophenyl	4-chlorophenyl
2-chloro-3-methylphenyl	4-chlorophenyl
2,5-difluorophenyl	4-methylphenyl
2-methoxy-4-chlorophenyl	4-chlorophenyl
2-chlorophenyl	4-methylphenyl
2,6-dichlorophenyl	4-chlorophenyl
2-(trifluoromethylmercaptyl)phenyl	phenyl
2,3,4-trimethylphenyl	4-chlorophenyl
2,5-difluorophenyl	4-bromophenyl

2,4-dimethylphenyl	4-chlorophenyl
4-chlorophenyl	4-chlorophenyl
3-chlorophenyl	4-chlorophenyl
4-bromophenyl	4-chlorophenyl
2-chlorophenyl	4-bromophenyl
2,5-difluorophenyl	4-chlorophenyl
4-chlorophenyl	4-bromophenyl
3,5-dimethylphenyl	4-chlorophenyl
4-trifluormethoxyphenyl	4-octylphenyl
4-trifluormethoxyphenyl	3-phenoxyphenyl
2,3-dihydro-2,2-dimethyl-7-benzofuranyl	phenyl

It is preferred that in the above formula (I), R^1 to R^5 independently from each other represent hydrogen;

hydroxyl;

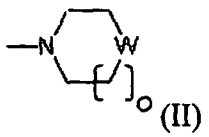
C_1-C_6-alkyl, C_6-C_{10}-aryl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_6-alkoxy, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, wherein each is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, hydroxy, fluoro, chloro, bromo, cyano, CF_3 or OCF_3;

amino;

amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl;

1-pyrrolyl, 2-pyrrolyl or 3-pyrrolyl, optionally substituted with one or more residues selected from C_1-C_6-alkyl, amino, fluoro, chloro or CF_3,

a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

$CONH_2$;

SO_2NH_2;

$CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with residues selected from C_1-C_6-alkyl or C_6-C_{10}-aryl;

fluoro;

chloro;

bromo;

CF_3; or

OCF_3.

It is further preferred that, in the above formula (I), one or more of R^1 to R^5 represent hydrogen, fluorine or chlorine. It is most preferred that either R^1 or R^5 represents hydrogen or fluorine.

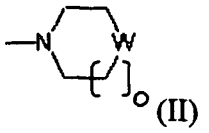
It is further preferred that, in the above formula (I), one or more of R^1 to R^5 represent hydroxy; or

C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_6-alkoxy, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, wherein each is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, $CONH_2$ or SO_2NH_2 optionally substituted once or twice with C_1-C_6-alkyl or C_6-C_{10}-aryl, hydroxy, fluoro, chloro, bromo, cyano, CF_3 or OCF_3.

It is more preferred that one of R^2, R^3 or R^4 represents hydroxy; or

C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, or C_6-C_{10}-aryl-C_1-C_6-alkoxy, each of which is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, $CONH_2$ or SO_2NH_2 optionally substituted once or twice with C_1-C_6-alkyl or C_6-C_{10}-aryl, hydroxy, fluoro, chloro, or bromo.

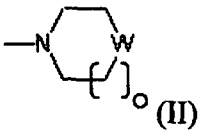
It is further preferred that, in the above formula (I), one or more of R^1 to R^5 represent amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl; or a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_4-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_4-alkyl, fluoro or chloro.

It is more preferred that one of R^2, R^3 or R^4 represents amino; amino substituted once or twice with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl; or a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_4-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_4-alkyl, fluoro or chloro.

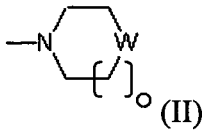
It is further preferred that, in the above formula (I), Y representing phenyl is substituted once or several times by:

a) C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_6-alkoxy, wherein each is optionally substituted once or several times by: C_1-C_6-alkyl; C_1-C_6-alkoxy; SO_3H; CO_2H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; $CONH_2$; SO_2NH_2; OCF_3; or $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with C_1-C_6-alkyl;

or by

b) hydroxy; thiol; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; OCF_3; CO_2H; SO_3H; $CONH_2$; SO_2NH_2; or $CONH_2$ or SO_2NH_2 wherein the amino functionality is

substituted once or twice with C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, wherein in the case of a di-C_1-C_6-alkyl substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted once or several times with C_1-C_6-alkyl or phenyl; a disubstituted amino of the following formula (II)


(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

or by

c) a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by C_1-C_6-alkyl; C_1-C_6-alkoxy; COOH; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with C_1-C_6-alkyl which may be combined to form 5 or 6-membered rings; SO_3H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; or OCF_3.

It is even more preferred that Y represents phenyl which is substituted once or several times by C_1-C_6-alkyl; phenyl; C_1-C_6-alkoxy; hydroxy; fluoro; chloro; bromo; CF_3; OCF_3; amino; or $CONH_2$ or SO_2NH_2 optionally substituted once or twice with C_1-C_6-alkyl wherein these optional C_1-C_6-alkyl residues may be combined to form 5 or 6-membered rings.

It is still more preferred that m represents 0 and Y represents phenyl which is substituted once or twice by hydroxy, fluoro, chloro or bromo.

It is most preferred that m represents 0 and Y represents phenyl which is substituted in the 4-position by fluoro, in the 4-position by chloro, in the 2- and 4-position by fluoro, in the 2- and 4-position by chloro, or in the 4-position by phenyl.

It is particularly preferred that, in the above formula (I), m is 0; n is 0; Y represents phenyl substituted once or twice by fluoro, chloro or bromo; and any one of R^2 to R^4 represents OR^7 wherein R^7 is selected from hydrogen and C_1-C_4-alkyl.

It is also very preferred that, in the above formula (I) m is 0; n is 0; Y represents phenyl which is substituted in the 4-position by fluoro, in the 4-position by chloro, in the 2- and 4-position by fluoro, or in the 2- and 4-position by chloro and that any one of R^2 to R^4 represents OR^7 wherein R^7 is selected from hydrogen and C_1-C_4-alkyl.

It is also very preferred that in the above formula (I) m is 0; n is 0; Y represents phenyl substituted once or twice by fluoro, chloro or bromo and that R^3 or R^3 and R^4 represent hydroxy.

It is also very preferred that in the above formula (I) m is 0; n is 0; Y represents phenyl which is substituted in the 4-position by fluoro, in the 4-position by chloro, in the 2- and 4-position by fluoro, or in the 2- and 4-position by chloro and that R^3 or R^3 and R^4 represent hydroxy.

It is particularly preferred that in the above formula (I), m is 0; n is 0; Y represents phenyl substituted once or twice by fluoro, chloro or bromo; any one of R^2 to R^4 represents OR^7 wherein R^7 is selected from hydrogen and C_1-C_4-alkyl; and R^1 represents fluorine.

It is particularly preferred that in the above formula (I) m is 0; n is 0; Y represents phenyl which is substituted in the 4-position by fluoro, in the 4-position by chloro, in the 2- and 4-position by fluoro, or in the 2- and 4-position by chloro; that any one of R^2 to R^4 represents OR^7 wherein R^7 is selected from hydrogen and C_1-C_4-alkyl; and that R^1 represents fluorine.

It is particularly preferred that in the above formula (I) m is 0; n is 0; Y represents phenyl substituted once or twice by fluoro, chloro or bromo; that R^3 or R^3 and R^4 represent hydroxyl; and that R^1 represents fluorine.

It is particularly preferred that in the above formula (I) m is 0; n is 0; Y represents phenyl which is substituted in the 4-position by fluoro, in the 4-position by chloro, in the 2- and 4-position by fluoro, or in the 2- and 4-position by chloro; that R^3 or R^3 and R^4 represent hydroxyl; and that R^1 represents fluorine.

Furthermore, it is also preferred that, in formula (I), R^1 to R^5 are selected from hydroxyl, methyl, tert-butyl, phenyl, methoxy, ethoxy, phenoxy, amino, thiol, hydroxyl, cyano, fluoro, chloro, bromo, nitro, CF_3, OCF_3, pyridine, $CONH_2$, SO_2NH_2, tetrazole or triazole.

It is also preferred that at least one of R^1 to R^5 is a saturated, unsaturated or aromatic heterocycle optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, COOH, SO_3H, amino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3 or phenyl further substituted once or several times by C_1-C_6-alkoxy, COOH, SO_3H, amino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3.

Alternatively, it is also preferred that at least one of R^1 to R^5 is $CONH_2$; SO_2NH_2; or $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl.

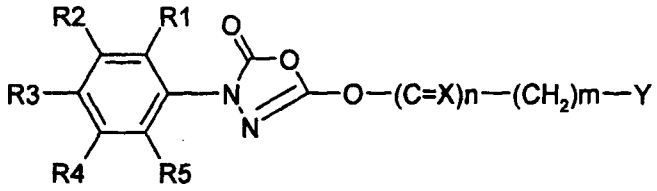
It is also preferred that, in formula (I), Y represents phenyl which is substituted in ortho- and/or para-positions by C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, hydroxyl, nitro, amino, $CONH_2$, SO_2NH_2, fluoro, chloro or OCF_3.

Even more preferably, Y represents phenyl which is substituted once, twice or three times in ortho- and/or para-positions with substituents independently selected from methoxy, ethoxy, tert-butoxy, phenoxy, hydroxyl, nitro, $CONH_2$, SO_2NH_2, fluoro, chloro or OCF_3.

It is also preferred that Y represents phenyl which is substituted in ortho- and/or para-positions by C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, hydroxyl, nitro, $CONH_2$, SO_2NH_2, fluoro, chloro or OCF_3.

It is also preferred that, in formula (I), R^1 to R^5 are selected from methyl, tert-butyl, phenyl, methoxy, ethoxy, phenoxy, amino, thiol, hydroxyl, cyano, fluoro, chloro, bromo, nitro, CF_3, OCF_3, pyridine, $CONH_2$, SO_2NH_2, tetrazole, triazole or phenyl further substituted once or several times by C_1-C_6-alkoxy, COOH, SO_3H, amino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3, and Y represents phenyl which is substituted in ortho- and/or para-positions by C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, hydroxyl, nitro, $CONH_2$, SO_2NH_2, fluoro, chloro or OCF_3.

In still an alternative embodiment, the present invention relates to a compound of formula (I),



(I)

wherein

R^1 to R^5 independently from each other represent:
hydrogen;
C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy, wherein each is optionally substituted once or several times by

C_1-C_6-alkyl; C_1-C_6-alkoxy; C_6-C_{10}-aryloxy; CO_2H; SO_3H; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3;

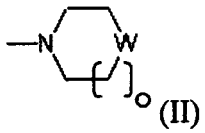
CO_2H;

SO_3H;

amino;

amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl;

a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

$CONH_2$;

SO_2NH_2;

$CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_6-alkyl and wherein in the case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings;

thiol;

hydroxyl;

nitro;

cyano;

fluorosulfonyl;

halogen selected from fluoro, chloro, bromo or iodo;

CF_3;

OCF_3; or

a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by

C_1-C_6-alkyl; C_1-C_6-alkoxy; COOH; SO_3H; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3;

and wherein any two or more of R^1 to R^5 may be combined to form anellated saturated, unsaturated or aromatic homo- or hetero-ring systems;

n represents 0; m represents 1;

Y represents phenyl which is optionally substituted once or several times by

a) C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy;

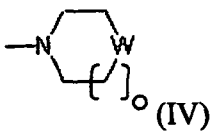
each of which is optionally substituted once or several times by C_1-C_6-alkyl; C_1-C_6-alkoxy; $CONH_2$ or SO_2NH_2, optionally substituted once or twice with C_1-C_6-alkyl; SO_3H; CO_2H; amino; amino substituted one or more times with residues

selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3;

wherein several of these optional substituents may be combined to form anellated saturated, unsaturated or aromatic homo- or hetero-ring systems; or

b) a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by C_1-C_6-alkyl; C_1-C_6-alkoxy; COOH; $CONH_2$ or SO_2NH_2, optionally substituted once or twice with C_1-C_6-alkyl; SO_3H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3; or

c) hydroxy; thiol; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; OCF_3; CO_2H; SO_3H; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; a disubstituted amino of the following formula (IV)



(IV)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_4-alkyl and wherein the methylene groups in formula (IV) may optionally be substituted once or twice with C_1-C_4-alkyl, fluoro or chloro;

with the proviso that Y does not represent unsubstituted phenyl if R^1, R^2 and R^5 represent hydrogen, R^4 represents hydrogen, trifluoromethoxy, trifluorobutoxy, 3,3,5,5-tetramethylcyclohexyloxy, benzyloxy, phenoxy, phenyl, 2-dimethylaminoethyloxy or 3-methylphenoxy-methyl and R^3 represents hydrogen, trifluoromethoxy, trifluorobutoxy, 3,3,5,5-tetramethylcyclohexyloxy, phenoxy, 4-chlorophenoxy, cyclohexyl, phenyl, morpholinosulfonyl, 3,3,5-trimethylcyclohexylaminosulfonyl, 2,2,6,6-tetramethylpiperidin-4-ylaminosulfonyl, 2-(diisopropylaminoethyl)aminosulfonyl, 4-methylpiperazin-1-yl-sulfonyl, 3,3-dimethylpiperidinocarbonyl or 3,5-dichlorophenoxy 2-dimethylaminoethyloxy or 3-methylphenoxy-methyl.

It is even more preferred that Y represents phenyl which is substituted once or several times by C_1-C_6-alkyl; phenyl; C_1-C_6-alkoxy; hydroxy; fluoro; chloro; bromo; CF_3; OCF_3; amino; or $CONH_2$ or SO_2NH_2 optionally substituted once or twice with C_1-C_6-alkyl wherein these optional C_1-C_6-alkyl residues may be combined to form 5 or 6-membered rings.

It is still more preferred that m represents 0 and Y represents phenyl which is substituted once or twice by hydroxy, fluoro, chloro or bromo.

It is most preferred that m represents 0 and Y represents phenyl which is substituted in the 4-position by fluoro, in the 4-position by chloro, in the 2- and 4-position by fluoro, in the 2- and 4-position by chloro, or in the 4-position by phenyl.

It is particularly preferred that, in the above formula (I), m is 0; n is 0; Y represents phenyl substituted once or twice by fluoro, chloro or bromo; and any one of R^2 to R^4 represents OR^7 wherein R^7 is selected from hydrogen and C_1-C_4-alkyl.

It is also very preferred that, in the above formula (I) m is 0; n is 0; Y represents phenyl which is substituted in the 4-position by fluoro, in the 4-position by chloro, in the 2- and 4-position by fluoro, or in the 2- and 4-position by chloro and that any one of R^2 to R^4 represents OR^7 wherein R^7 is selected from hydrogen and C_1-C_4-alkyl.

It is also very preferred that in the above formula (I) m is 0; n is 0; Y represents phenyl substituted once or twice by fluoro, chloro or bromo and that R^3 or R^3 and R^4 represent hydroxy.

It is also very preferred that in the above formula (I) m is 0; n is 0; Y represents phenyl which is substituted in the 4-position by fluoro, in the 4-position by chloro, in the 2- and 4-position by fluoro, or in the 2- and 4-position by chloro and that R^3 or R^3 and R^4 represent hydroxy.

It is particularly preferred that in the above formula (I), m is 0; n is 0; Y represents phenyl substituted once or twice by fluoro, chloro or bromo; any one of R^2 to R^4 represents OR^7 wherein R^7 is selected from hydrogen and C_1-C_4-alkyl; and R^1 represents fluorine.

It is particularly preferred that in the above formula (I) m is 0; n is 0; Y represents phenyl which is substituted in the 4-position by fluoro, in the 4-position by chloro, in the 2- and 4-position by fluoro, or in the 2- and 4-position by chloro; that any one of R^2 to R^4 represents OR^7 wherein R^7 is selected from hydrogen and C_1-C_4-alkyl; and that R^1 represents fluorine.

It is particularly preferred that in the above formula (I) m is 0; n is 0; Y represents phenyl substituted once or twice by fluoro, chloro or bromo; that R^3 or R^3 and R^4 represent hydroxyl; and that R^1 represents fluorine.

It is particularly preferred that in the above formula (I) m is 0; n is 0; Y represents phenyl which is substituted in the 4-position by fluoro, in the 4-position by chloro, in the 2- and 4-position by fluoro, or in the 2- and 4-position by chloro; that R^3 or R^3 and R^4 represent hydroxyl; and that R^1 represents fluorine.

Furthermore, it is also preferred that, in formula (I), R^1 to R^5 are selected from methyl, tert-butyl, phenyl, methoxy, ethoxy, phenoxy, amino, thiol, hydroxyl, cyano, fluoro, chloro, bromo, nitro, CF_3, OCF_3, pyridine; $CONH_2$, SO_2NH_2, wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl; tetrazole or triazole.

It is also preferred that any one of R^1 to R^5 is phenyl further substituted once or several times by C_1-C_6-alkoxy, COOH, SO_3H, amino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3.

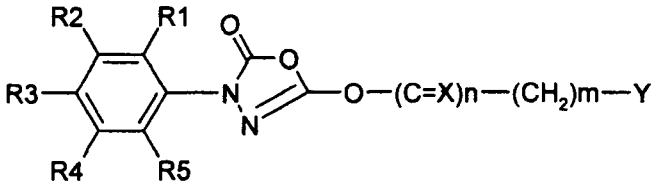
It is also preferred that, in formula (I), Y represents phenyl which is substituted in ortho- and/or para-positions by C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, hydroxyl, nitro, amino, $CONH_2$, SO_2NH_2, fluoro, chloro or OCF_3.

Even more preferably, Y represents phenyl which is substituted once, twice or three times in ortho- and/or para-positions with substituents independently selected from methoxy, ethoxy, tert-butoxy, phenoxy, hydroxyl, nitro, $CONH_2$, SO_2NH_2, fluoro, chloro or OCF_3.

It is also preferred that, in formula (I), Y represents phenyl which is substituted in ortho- and/or para-positions by C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, hydroxyl, nitro, $CONH_2$, SO_2NH_2, fluoro, chloro or OCF_3.

It is also very preferred that, in formula (I), R^1 to R^5 are selected from methyl, tert-butyl, phenyl, methoxy, ethoxy, phenoxy, amino, thiol, hydroxyl, cyano, fluoro, chloro, bromo, nitro, CF_3, OCF_3, pyridine, $CONH_2$, SO_2NH_2, tetrazole, triazole or phenyl further substituted once or several times by C_1-C_6-alkoxy, COOH, SO_3H, amino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3, and Y represents phenyl which is substituted in ortho- and/or para-positions by C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, hydroxyl, nitro, $CONH_2$, SO_2NH_2, fluoro, chloro or OCF_3.

In first very preferred embodiment, the present invention relates to a compound of formula (I),



(I),

wherein R^1 or R^5 is hydrogen or fluorine;

any one of R^2 to R^4 represents hydroxyl and remaining R residues are hydrogen;

C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy, wherein each is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, CO_2H, SO_3H, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3;

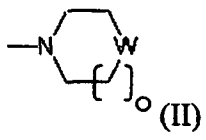
CO_2H;

SO_3H;

amino;

amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl;

a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

$CONH_2$;

SO_2NH_2;

$CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_6-alkyl and wherein in

the case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings;

thiol;

hydroxyl;

nitro;

cyano;

fluorosulfonyl;

halogen selected from fluoro, chloro, bromo or iodo;

CF_3;

OCF_3; or

a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, COOH, SO_3H, amino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3;

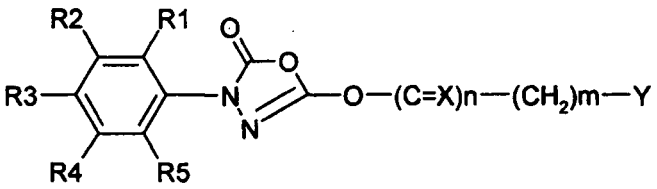
and wherein two or more of R^2 to R^4 may be combined to form anellated saturated, unsaturated or aromatic homo- or hetero-ring systems;

n and m are 0; and

Y is phenyl substituted once or several times by C_1-C_6-alkyl; phenyl; C_1-C_6-alkoxy; hydroxy; fluoro; chloro; bromo; CF_3; OCF_3; amino; or $CONH_2$ optionally substituted once or twice with C_1-C_6-alkyl wherein these optional C_1-C_6-alkyl residues may be combined to form 5 or 6-membered rings;

or a stereoisomer, pharmaceutically acceptable salt or ester, or prodrug thereof.

In a second very preferred embodiment, the present invention relates to a compound of formula (I),



(I),

wherein R^1 or R^5 is hydrogen or fluorine;

any one of R^2 to R^4 represents amino and remaining R residues are hydrogen;

C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy, wherein each is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, CO_2H, SO_3H, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3;

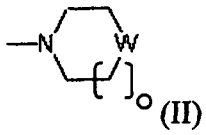
CO_2H;

SO_3H;

amino;

amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl;

a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

$CONH_2$;

SO_2NH_2;

$CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_6-alkyl and wherein in

the case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings;

thiol;

hydroxyl;

nitro;

cyano;

fluorosulfonyl;

halogen selected from fluoro, chloro, bromo or iodo;

CF_3;

OCF_3; or

a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, COOH, SO_3H, amino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3;

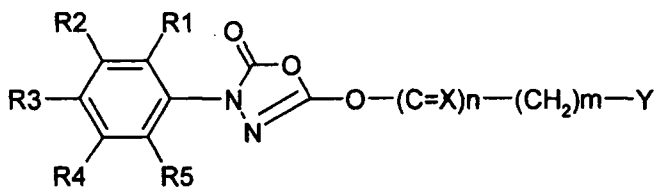
and wherein any two or more of R^2 to R^4 may be combined to form anellated saturated, unsaturated or aromatic homo- or hetero-ring systems;

n and m are 0; and

Y is phenyl substituted once or several times by C_1-C_6-alkyl; phenyl; C_1-C_6-alkoxy; hydroxy; fluoro; chloro; bromo; CF_3; OCF_3; amino; or $CONH_2$ optionally substituted once or twice with C_1-C_6-alkyl wherein these optional C_1-C_6-alkyl residues may be combined to form 5 or 6-membered rings,

or a stereoisomer, pharmaceutically acceptable salt or ester, or prodrug thereof.

In a third very preferred embodiment, the present invention relates to a compound of formula (I),



(I),

wherein R^1 or R^5 is hydrogen or fluorine;

one of R^3 or R^4 is C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy, wherein each is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, CO_2H, SO_3H, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3;

the other of R^3 or R^4 is amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl;

and R^2 is:

hydrogen;

C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy, wherein each is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, CO_2H, SO_3H, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3;

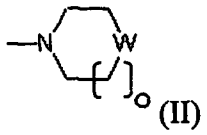
CO_2H;

SO_3H;

amino;

amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl;

a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

$CONH_2$;

SO_2NH_2;

$CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_6-alkyl and wherein in the case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings;

thiol;

hydroxyl;

nitro;

cyano;

fluorosulfonyl;

halogen selected from fluoro, chloro, bromo or iodo;

CF_3;

OCF_3; or

a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, COOH, SO_3H, amino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3;

n and m are 0; and

Y is phenyl substituted once or several times by C_1-C_6-alkyl; phenyl; C_1-C_6-alkoxy; hydroxy; fluoro; chloro; bromo; CF_3; OCF_3; amino; or $CONH_2$ optionally substituted once or twice with C_1-C_6-alkyl wherein these optional C_1-C_6-alkyl residues may be combined to form 5 or 6-membered rings,

or a stereoisomer, pharmaceutically acceptable salt or ester, or prodrug thereof.

In all these three preferred embodiments, it is further preferred that Y is phenyl substituted once or several times by C_1-C_6-alkyl; phenyl; C_1-C_6-alkoxy; hydroxy; fluoro; chloro; bromo; CF_3; OCF_3; amino; or $CONH_2$ optionally substituted once or twice with C_1-C_6-alkyl, wherein these optional C_1-C_6-alkyl residues may be combined to form 5 or 6-membered rings.

In all these three preferred embodiments, it is still further preferred that Y is phenyl substituted once or twice by hydroxy, fluoro, chloro or bromo.

In all these three preferred embodiments, it is still further preferred that Y is phenyl substituted in the 4-position by fluoro or by chloro, in the 2- and 4-position by fluoro, in the 2- and 4-position by chloro, or in the 4-position by phenyl.

In all aspects of the invention relating to the compounds *per-se*, the following applies:

In the embodiments of the invention directed to the compounds *per-se*, the following compounds of formula (I) are excluded:

5-Dodecyloxy-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one
5-Hexadecyloxy-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one
5-Octyloxy-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one
5-Hexadecyloxy-3- (3-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one
5-Hexadecyloxy-3-(4-(4-chlorphenoxy)-phenyl)-3H-(1,3,4)-oxadiazol-2-one
5-Octyloxy-3-phenyl-3H- (1,3,4)-oxadiazol-2-one
5-Octyloxy-3- (3-fluor-phenyl)-3H- (1,3,4)-oxadiazol-2-one
5-Hexadecyloxy-3- (3-fluor-phenyl)-3H- (1,3,4)-oxadiazol-2-one
5-Hexadecyloxy-3- (3-benzyloxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one
5-Hexadecyloxy-3-phenyl-3H- (1,3,4)-oxadiazol-2-one
5-Hexadecyloxy-3- (4-nitro-phenyl)-3H- (1,3,4)-oxadiazol-2-one
5-Hexadecyloxy-3- (4-methoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one
5-Hexadecyloxy-3- (4-benzyloxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one
5-Decyloxy-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one
5-Undecyloxy-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one

5-Tetradecyloxy-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one

5-Tridecyloxy-3-(4-trifluoromethoxy-phenyl)-3H-(1,3,4)-oxadiazol-2-one

5- (2- (2-Hexyloxy-ethoxy)-ethoxy)-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2- one

5- ((Z)-Octadec-9-enyloxy)-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one 5-(Dodecyloxy-ethoxy)-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one

5- (2- (4-Fluorphenyl)-ethoxy)-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one

5-((3ss-Cholestan-3-yl)-oxy)--3-(4-trifluoromethoxy-phenyl)-3H-(1,3,4)-oxadiazol-2-one

5-(2-Butoxy-ethoxy)-3-(4-trifluormethoxy-phenyl)-3H-(1,3,4)-oxadiazol-2-one

5- (7-Phenyl-heptyloxy)-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one

5- (Docosyloxy-ethoxy)-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one

5- (2- (1-Naphthloxy)-ethoxy)-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one

5-(4-Octylphenoxy)-3-(4-trifluormethoxy-phenyl)-3H-(1,3,4)-oxadiazol-2-one

5- (3-Phenoxy-phenoxy)-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one

5- (Dodecyloxy)-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one

5- (Dodecyloxy)-3- (3, 4-dichlor-phenyl)-3H- (1,3,4)-oxadiazol-2-one

5- (Dodecyloxy)-3- (3, 5-dichlor-phenyl)-3H- (1,3,4)-oxadiazol-2-one

5- (Dodecyloxy)-3- (3-methoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one

5- (Dodecyloxy)-3- (4-methoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one

In the embodiments of the invention directed to the compounds *per-se*, Y does not represent C_1-C_4-alkyl when m=0 and n=0.

Furthermore, when m=0 and n=0, and Y an optionally substituted phenyl ring, R^2 or R^4 do not represent the substituent C(=A)-N(B)-SO_2-NR^6R^7, wherein A represents O or S, B represents hydrogen, cyano, C_1-C_6-alkyl, C_1-C_6-alkoxy-alkyl, C_3-C_7-cycloalkyl, C_3-C_6-alkenyl, C_3-C_6-alkynyl or optionally substituted benzyl derivatives, and R^6 and R^7 independently from each other represent hydrogen or an organic residue, or together an organic cyclic structure; R^1 to R^5 independently from each other do not represent hydrogen, fluoro, bromo, chloro, iodo or an alkyl radical when Y represents unsubstituted phenyl; R^2 or R^4 do not represent a pyrazol-3-yl-derivative; and the phenyl ring substituted with R^1 to R^5 and Y do not represent the following combinations:

phenyl ring substituted with R^1 to R^5	Y
2-chlorophenyl	4-chlorophenyl
2,3-dimethylphenyl	4-chlorophenyl
2,4-dichlorophenyl	4-chlorophenyl
2-chloro-3-methylphenyl	4-chlorophenyl
2,5-difluorophenyl	4-methylphenyl
2-methoxy-4-chlorophenyl	4-chlorophenyl
2-chlorophenyl	4-methylphenyl
2,6-dichlorophenyl	4-chlorophenyl
2-(trifluoromethylmercaptyl)phenyl	phenyl
2,3,4-trimethylphenyl	4-chlorophenyl
2,5-difluorophenyl	4-bromophenyl
2,4-dimethylphenyl	4-chlorophenyl
4-chlorophenyl	4-chlorophenyl
3-chlorophenyl	4-chlorophenyl
4-bromophenyl	4-chlorophenyl
2-chlorophenyl	4-bromophenyl
2,5-difluorophenyl	4-chlorophenyl
4-chlorophenyl	4-bromophenyl
3,5-dimethylphenyl	4-chlorophenyl
4-trifluormethoxyphenyl	4-octylphenyl
4-trifluormethoxyphenyl	3-phenoxyphenyl
2,3-dihydro-2,2-dimethyl-7-benzofuranyl	phenyl

Furthermore, when m=1, n=0, and Y is an optionally substituted phenyl ring, Y does not represent unsubstituted phenyl if R^1, R^2 and R^5 represent hydrogen, R^4 represents hydrogen, trifluoromethoxy, trifluorobutoxy, 3,3,5,5-tetramethylcyclohexyloxy, benzyloxy, phenoxy, phenyl, 2-dimethylaminoethyloxy or 3-methylphenoxy-methyl and R^3 represents hydrogen, trifluoromethoxy, trifluorobutoxy, 3,3,5,5-tetramethylcyclohexyloxy, phenoxy, 4-chlorophenoxy, cyclohexyl, phenyl, morpholinosulfonyl, 3,3,5-trimethylcyclohexylaminosulfonyl, 2,2,6,6-tetramethylpiperidin-4-ylaminosulfonyl, 2-(diisopropylaminoethyl)aminosulfonyl,

4-methylpiperazin-1-yl-sulfonyl, 3,3-dimethylpiperidinocarbonyl or 3,5-dichlorophenoxy 2-dimethylaminoethyloxy or 3-methylphenoxy-methyl.

Furthermore, when m=1, n=0 and R^3 is trifluoromethoxy, Y does not represent unsubstituted phenyl.

In some alternative embodiments of the invention directed to the compounds *per-se*, R^2 to R^5 do not represent 2-oxo-pyrrolidin-1-yl, 2,5-dimethylpyrrol-1-yl or a substituent connected to the phenyl ring by a non-aromatic nitrogen when n =0 and m=0 and when Y is represented by C_1-C_6-alkyl, C_3-C_9-cycloalkyl, wherein both groups are optionally substituted one or more times by phenyl, C_1-C_4-alkyloxy, S-C_1-C_4-alkyl, N(C_1-C_4-alkyl)$_2$, and wherein phenyl is optionally substituted one or more times by halogen, C_1-C_4-alkyl, C_1-C_4-alkyloxy, nitro, or CF_3.

In some alternative embodiments of the invention directed to the compounds *per-se*, in case n represents 0 and m represents 0, R^1 or R^5 does not represent a substituent selected from halogen, in particular F, Cl, NO_2, CH_3, OCH_3 or CF_3 or CN, when at least one of the remainder of the substituents R^1 to R^5 represents a substituent selected from halogen, in particular F, Cl, Br, CH_3, OCH_3, NO_2, CN and when the phenyl ring representing Y is substituted with F, Cl, Br, CH_3, OCH_3, NO_2 or CN.

In some alternative embodiments of the invention directed to the compounds *per-se*, in case n represents 0 and m represents 0, Y does not represent phenyl which is substituted by phenoxy or C_6-C_{12}-alkyl.

In some alternative embodiments of the invention directed to the compounds *per-se*, in case n represents 0 and m represents 1, Y does not represent unsubstituted phenyl.

In some additional alternative embodiments of the invention directed to the compounds *per-se*, in case m=0 and n=0, Y does not represent phenyl or lower alkyl radical when R^1 to R^5 represent a hydrogen or halogen atom or a methyl radical.

In some alternative embodiments of the invention directed to the compounds *per-se*, R^2 to R^5 do not represent hydrogen, halogen, nitro, C_1-C_4-alkyl, C_1-C_9-alkyloxy, trifluoromethyl, trifluoromethoxy or C_6-C_{10}-aryl-C_1-C_4-alkyloxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl, C_3-C_8-cycloalkyl or O-C_3-C_8-cycloalkyl when n =0 and m=0 and when Y is represented by C_7-C_{22} alkyl, C_2-C_4 alkyl that is substituted by C_4-C_{20}-alkoxy, C_6-C_{10}-aryl, C_6-C_{10}-aryloxy or C_4-C_{12}-alkoxy-C_2-C_4-alkoxy, and represents C_7-C_{20} alkenyl, 3 beta-cholestan-3-yl or is represented by phenyl which is substituted with phenoxy or C_6-C_{12}-alkyl. In still alternative embodiments of the invention directed to the compounds *per-se*, all of these compounds can be substituted once or several times by C_1-C_9 alkyl, C_1-C_9 alkyloxy, halogen, and trifluoromethyl in case of aryl; and by C_1-C_4 alkyl or C_6-C_{10} aryl in case of cycloalkyl; and by hydroxyl, di-C_1-C_4 alkylamino and fluoro in case of alkyl.

In some additional alternative embodiments of the invention directed to the compounds *per-se*, in case m=0 and n=0, Y does not represent phenyl substituted by alkyl having 1 to 4 carbon atoms; alkoxy having 1 to 4 carbon atoms; alkylthio having 1 to 4 carbon atoms; halogenoalkyl having 1 to 4 carbon atoms and 1 to 5 halogen atoms, the halogen atoms being identical or different; halogenoalkoxy having 1 to 4 carbon atoms and 1 to 5 halogen atoms, the halogen atoms being identical or different; or halogenoalkylthio having 1 to 4 carbon atoms and 1 to 5 halogen atoms, the halogen atoms being identical or different; alkylenedioxy having 1 or 2 carbon atoms; halogensubstituted alkylenedioxy having 1 or 2 carbon atoms and 1 to 4 halogen atoms, the halogen atoms being identical or different; cyano; nitro; alkylcarbonyl having 2 to 4 carbon atoms; carbalkoxy having 2 to 4 carbon atoms; alkylsulphonyl having 1 to 4 carbon atoms; arylsulphonyl having 6 or 10 aryl carbon atoms; phenyl, naphthyl, phenoxy, naphthoxy, phenylthio or naphthylthio, when R^1 or R^5 represent halogen; alkyl having 1 to 4 carbon atoms; alkoxy having 1 to 4 carbon atoms; alkylthio having 1 to 4 carbon atoms; halogenoalkyl having 1 to 4 carbon atoms and 1 to 5 halogen atoms, the halogen atoms being identical or different; halogenoalkoxy having 1 to 4 carbon atoms and 1 to 5 halogen atoms, the halogen atoms being identical or different; or halogenoalkylthio having 1 to 4 carbon atoms and 1 to 5 halogen atoms, the halogen atoms being identical or different; and when one or more of the remaining R^1 to R^5 represent hydrogen; alkyl having 1 to 4 carbon atoms; alkoxy having 1 to 4 carbon atoms; alkylthio having 1 to 4 carbon atoms; halogenoalkyl having 1 to 4 carbon atoms and 1 to 5 halogen atoms, the halogen atoms being identical or different; halogenoalkoxy having 1 to

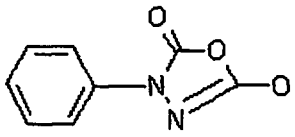
4 carbon atoms and 1 to 5 halogen atoms, the halogen atoms being identical or different; or halogenoalkylthio having 1 to 4 carbon atoms and 1 to 5 halogen atoms, the halogen atoms being identical or different; alkylenedioxy having 1 or 2 carbon atoms; halogen-substituted alkylenedioxy having 1 or 2 carbon atoms and 1 to 4 halogen atoms, the halogen atoms being identical or different; halogen; cyano; nitro; amino; mono- and dialkylamino having 1 to 4 carbon atoms per alkyl group; alkylcarbonyl having 2 to 4 carbon atoms; carbalkoxy having 2 to 4 carbon atoms; alkylsulphonyl having 1 to 4 carbon atoms; arylsulphonyl having 6 or 10 aryl carbon atoms; phenyl, naphthyl, phenoxy, naphthoxy, phenylthio or naphthylthio.

In some additional alternative embodiments of the invention directed to the compounds *per-se*, in case n represents 0 and m represents 0, R^1 or R^5 does not represent a substituent selected from halogen, in particular F, Cl, NO_2, CH_3, OCH_3 or CF_3 or CN, when at least one of the remainder of the substituents R^1 to R^5 represents a substituent selected from halogen, in particular F, Cl, Br, CH_3, OCH_3, NO_2, CN and when the phenyl ring representing Y is substituted with F, Cl, Br, CH_3, OCH_3, NO_2 or CN.

In some alternative embodiments of the invention directed to the compounds *per-se*, when R^1, R^2 and R^5 represent hydrogen or when R^1, R^4 and R^5 represent hydrogen, and when and m=1 and n=0, Y does not represent C_1-C_6-alkyl or C_3-C_9-cycloalkyl, optionally substituted once or several times by phenyl which in turn may be substituted once or several times by halogen, C_1-C_4-alkyl, C_1-C_4-alkyloxy, nitro, CF_3; or by O-C_1-C_4-alkyl, S-C_1-C_4-alkyl, N(C_1-C_4-alkyl)$_2$.

In some alternative embodiments of the invention directed to the compounds *per-se*, when R^1 or R^5 represent hydrogen and when and m=1 and n=0, Y does not represent C_1-C_6-alkyl or C_3-C_9-cycloalkyl, optionally substituted once or several times by phenyl which in turn may be substituted once or several times by halogen, C_1-C_4-alkyl, C_1-C_4-alkyloxy, nitro, CF_3; or by O-C_1-C_4-alkyl, S-C_1-C_4-alkyl, N(C_1-C_4-alkyl)$_2$.

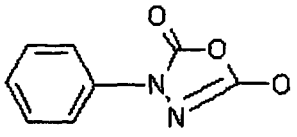
In another aspect, the present invention also relates to the use of a pharmacophore of the following structure (III),



(III),

for the preparation of a compound for the inhibition of FAAH, and the treatment of a disorder which is positively influenced by the inhibition of fatty acid amide hydrolase (FAAH), in particular for the treatment of the above mentioned medical indications.

In still another aspect, the present invention also relates to compounds comprising a pharmacophore of the following structure (III),

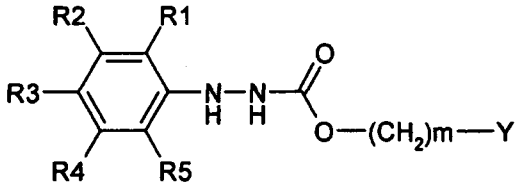


(III),

for the inhibition of FAAH, and the treatment of a disorder which is positively influenced by the inhibition of fatty acid amide hydrolase (FAAH), in particular for the treatment of the above mentioned medical indications.

Within the meaning of the application, the term "pharmacophore" is to be understood as a molecular sub-unit, or substructure or part of the molecule which is essential for the interaction with the FAAH enzyme. It is to be understood that the pharmacophore of formula (III) may be further substituted.

In another aspect, the present invention also relates to a process for the preparation of a compound according to any one of claims 1 to 17, and 24 to 79 wherein a compound of formula (IV),



(IV),

wherein

R^1 to R^5 independently from each other represent:

hydrogen;

C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy, wherein each is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, CO_2H, SO_3H, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3;

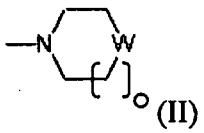
CO_2H;

SO_3H;

amino;

amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl;

a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

$CONH_2$;

SO_2NH_2;

$CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_6-alkyl and wherein in the case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings;

thiol;

hydroxyl;

nitro;

cyano;

fluorosulfonyl;

halogen selected from fluoro, chloro, bromo or iodo;

CF_3;

OCF_3; or

a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, COOH, SO_3H, amino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3;

and wherein any two or more of R^1 to R^5 may be combined to form anellated saturated, unsaturated or aromatic homo- or hetero-ring systems;

m represents 0, 1, 2, 3, 4, 5 or 6;

Y represents:

a) hydrogen;

b) C_1-C_{18}-alkyl, mono or polyunsaturated C_2-C_{18}-alkylene, C_3-C_8-cycloalkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy, or a

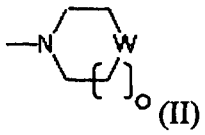
saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, wherein each is optionally substituted once or several times by:

b1) C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy; wherein each is optionally substituted once or several times by C_1-C_6-alkyl; C_1-C_6-alkoxy; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with C_1-C_6-alkyl; SO_3H; CO_2H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; or OCF_3;

wherein several of the substituents in b1) may be combined to form anellated saturated, unsaturated or aromatic homo- or hetero-ring systems;

or by

b2) hydroxy; thiol; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; CO_2H; SO_3H; OCF_3; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_6-alkyl and wherein in the case of a di-C_1-C_6-alkyl-substituted amino functionality, the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; or a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

or by

b3) a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by C_1-C_6-alkyl; C_1-C_6-alkoxy; COOH; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with C_1-C_6-alkyl; SO_3H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; or OCF_3;

c) SO_3H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in the case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; thiol; hydroxyl; nitro; cyano; fluorosulfonyl; halogen selected from fluoro, chloro, bromo or iodo; CF_3; or OCF_3;

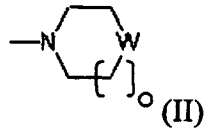
is cyclised to form an oxadiazolone ring system.

It is preferred that the cyclisation step to the oxadiazolone ring system is achieved by phosgene, carbonyldiimidazole, or a carbonic acid ester.

Suitable carbonic acid esters are in particular the C_1-C_4-alkyl carbonic acid esters.

Phosgene and carbonyldiimidazole are the most preferred reagents to achieve cyclization.

It is preferred that in the above formula (IV), R^1 to R^5 independently from each other represent hydrogen; hydroxyl; C_1-C_6-alkyl, C_6-C_{10}-aryl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_6-alkoxy, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, each of which is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, $CONH_2$ or SO_2NH_2 optionally substituted once or twice with C_1-C_6-alkyl or C_6-C_{10}-aryl; amino, C_1-C_4-alkylamino, di-C_1-C_4-alkylamino, hydroxy, fluoro, chloro, bromo, CF_3 or OCF_3; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl; a disubstituted amino of the following formula (II)


(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_4-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_4-alkyl, fluoro or chloro; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is optionally substituted one or more times with residues selected from C_1-C_6-alkyl or C_6-C_{10}-aryl; fluoro; chloro; bromo; CF_3; or OCF_3.

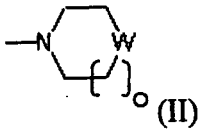
It is further preferred that, in the above formula (IV), one or more of R^1 to R^5 represent fluorine or chlorine. It is most preferred that either R^1 or R^5 represents fluorine.

It is further preferred that, in the above formula (IV), one or more of R^1 to R^5 represent hydroxy; C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_6-alkoxy, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, each of which is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, $CONH_2$ or SO_2NH_2 optionally substituted once or twice with C_1-C_6-alkyl or C_6-C_{10}-aryl; amino, C_1-C_4-alkylamino, di-C_1-C_4-alkylamino, hydroxy, fluoro, chloro, bromo, CF_3 or OCF_3.

It is more preferred that one of R^2, R^3 or R^4 represents hydroxy; C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_6-alkoxy, each of which is optionally substituted once or

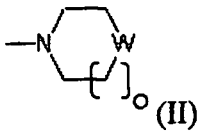
several times by C_1-C_4-alkyl, C_1-C_4-alkoxy, $CONH_2$ or SO_2NH_2 optionally substituted once or twice with C_1-C_6-alkyl or C_6-C_{10}-aryl; amino, C_1-C_4-alkylamino, di-C_1-C_4-alkylamino, hydroxy, fluoro, chloro, or bromo.

It is further preferred that, in the above formula (IV), one or more of R^1 to R^5 represent amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl; or a disubstituted amino of the following formula (II)


(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_4-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_4-alkyl, fluoro or chloro.

It is more preferred that one of R^2, R^3 or R^4 represents amino; amino substituted once or twice with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl; or a disubstituted amino of the following formula (II)


(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_4-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_4-alkyl, fluoro or chloro.

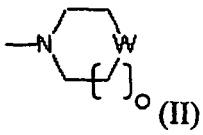
It is further preferred that, in the above formula (IV), n represents 0; m represents 0, 1, 2, 3, 4, 5 or 6; and Y represents C_3-C_6-cycloalkyl or C_6-C_{10}-aryl, each of which is optionally substituted once or several times by:

a) C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_4-alkoxy,

each of which is optionally substituted once or several times by C_1-C_6-alkyl; C_1-C_6-alkoxy; $CONH_2$ or SO_2NH_2, optionally substituted once or twice with C_1-C_6-alkyl; SO_3H; CO_2H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; or OCF_3;

or by

b) hydroxy; thiol; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; OCF_3; CO_2H; SO_3H; $CONH_2$ or SO_2NH_2, optionally substituted once or twice with C_1-C_6-alkyl, wherein these optional C_1-C_6-alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted once or several times with C_1-C_6-alkyl or phenyl; a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_4-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_4-alkyl, fluoro or chloro;

or by

c) a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by C_1-C_6-alkyl; C_1-C_6-alkoxy; COOH; $CONH_2$ or SO_2NH_2, optionally substituted once or twice with C_1-C_6-alkyl, wherein these optional C_1-C_6-alkyl residues may be combined to form 5 or 6-membered rings; SO_3H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl,

C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; or OCF_3.

It is more preferred that n represents 0; m represents 0 or 1; and Y represents a phenyl, naphthyl or pyridinyl ring system.

It is even more preferred that Y is substituted once or several times by C_1-C_4-alkyl; phenyl; C_1-C_4-alkoxy; hydroxy; fluoro; chloro; bromo; CF_3; OCF_3; $CONH_2$ or SO_2NH_2, optionally substituted once or twice with C_1-C_4-alkyl, wherein these optional C_1-C_4-alkyl residues may be combined to form 5 or 6-membered rings; or amino.

It is still more preferred that m represents 0 and Y represents phenyl which is substituted once or twice by hydroxy, fluoro, chloro or bromo.

It is most preferred that m represents 0 and Y represents phenyl which is substituted in the 4-position by fluoro, in the 4-position by chloro, in the 2- and 4-position by fluoro, in the 2- and 4-position by chloro, or in the 4-position by phenyl.

It is particularly preferred that, in the above formula (IV), m is 0; n is 0; Y represents phenyl substituted once or twice by fluoro, chloro or bromo; and any one of R^2 to R^4 represents OR^7 wherein R^7 is selected from hydrogen and C_1-C_4-alkyl.

It is also very preferred that, in the above formula (IV) m is 0; n is 0; Y represents phenyl which is substituted in the 4-position by fluoro, in the 4-position by chloro, in the 2- and 4-position by fluoro, or in the 2- and 4-position by chloro and that any one of R^2 to R^4 represents OR^7 wherein R^7 is selected from hydrogen and C_1-C_4-alkyl.

It is also very preferred that in the above formula (IV) m is 0; n is 0; Y represents phenyl substituted once or twice by fluoro, chloro or bromo and that R^3 or R^3 and R^4 represent hydroxy.

It is also very preferred that in the above formula (IV) m is 0; n is 0; Y represents phenyl which is substituted in the 4-position by fluoro, in the 4-position by chloro, in the 2- and

4-position by fluoro, or in the 2- and 4-position by chloro and that R^3 or R^3 and R^4 represent hydroxy.

It is particularly preferred that in the above formula (IV), m is 0; n is 0; Y represents phenyl substituted once or twice by fluoro, chloro or bromo; any one of R^2 to R^4 represents OR^7 wherein R^7 is selected from hydrogen and C_1-C_4-alkyl; and R^1 represents fluorine.

It is particularly preferred that in the above formula (IV) m is 0; n is 0; Y represents phenyl which is substituted in the 4-position by fluoro, in the 4-position by chloro, in the 2- and 4-position by fluoro, or in the 2- and 4-position by chloro; that any one of R^2 to R^4 represents OR^7 wherein R^7 is selected from hydrogen and C_1-C_4-alkyl; and that R^1 represents fluorine.

It is particularly preferred that in the above formula (IV) m is 0; n is 0; Y represents phenyl substituted once or twice by fluoro, chloro or bromo; that R^3 or R^3 and R^4 represent hydroxyl; and that R^1 represents fluorine.

It is particularly preferred that in the above formula (IV) m is 0; n is 0; Y represents phenyl which is substituted in the 4-position by fluoro, in the 4-position by chloro, in the 2- and 4-position by fluoro, or in the 2- and 4-position by chloro; that R^3 or R^3 and R^4 represent hydroxyl; and that R^1 represents fluorine.

In the following, the invention is illustrated by the following representative examples:

Example 1:

5-Phenoxy-3-(4-pyridin-3-yl)phenyl-1,3,4-oxadiazol-2(3*H*)-one

a) To an ice-cooled stirred solution of (4-bromophenyl)hydrazine (3.13 g, 14 mmol) in a mixture of NMP (20 mL) and pyridine (6.87 g, 87 mmol)) was added phenyl carbonochloridate (2.412 g, 15.41 mmol) dropwise under argon. The reaction was stirred at 0 °C for 30 min., and then was allowed to warm up to room temperature and stirred for 1 h. The reaction mixture was diluted with water and extracted with EtOAc. The organic phase was washed with water and brine respectively. After drying over $MgSO_4$ was filtered and

evaporated yielding 5.5 g of phenyl-2-(4-bromophenyl)hydrazinecarboxylate as yellow oil which was crystallized on standing.

b) To an ice-cooled mixture of the above intermediate (5.5 g) and pyridine (7.37 g, 83 mmol) was added 20 % solution of phosgene in toluene (22.6 mL, 43 mmol) dropwise. The reaction mixture was stirred for 30 min. in the cold, then for 1 hour at room temperature. Whereupon argon was bubbled through the reaction mixture and diluted with water at 0 °C. The two phases were separated and the organic phase was washed with 2 N HCl solution, water and brine respectively. The organic phase was stirred with charcoal for 30 min. then filtered through a short silica pad. After evaporation of the solvent the crude product was recrystallized from DCM/IPA mixture to give 1.938 g of 3-(4-bromophenyl)-5-phenoxy-1,3,4-oxadiazol-2(3*H*)-one as white solid. (yield 32.5 % for two steps)

c) To a stirred solution of 3-(4-bromophenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one (0.6 g, 1.8 mmol) in dimethoxy ethane (20 mL) and water (3 mL) was added pyridin-3-ylboronic acid (0.31 g, 2.52 mmol) and potassium carbonate (0.647 g, 4.68 mmol) Once a solution was obtained, $Pd(PPh_3)_4$ (0.104 g, 0.09 mmol) was added and the mixture was heated at 85 °C for 3 h and then allowed to cool to room temperature. The solvent was removed under reduced pressure and the residue was partitioned between 20 % iPrOH-DCM and water. The mixture was filtered to aid separation of the layers, and the organic phase was then washed with water and brine, then dried over $MgSO_4$, and filtered onto activated carbon. After stirring for 10 min., the mixture was filtered through a short silica gel/celite plug and the filtrate was evaporated to leave greenish oil that solidified on standing. Recrystallisation from ethanol gave 5-Phenoxy-3-(4-pyridin-3-yl)phenyl-1,3,4-oxadiazol-2(3*H*)-one as greyish powder (0.165 g, 27.7%) of melting point (m.p.) 146-147°C.

Example 2:

5-(Benzyloxy)-3-(3-bromophenyl)-1,3,4-oxadiazol-2(3*H*)-one

a) To an ice-cooled stirred solution of (3-bromophenyl)hydrazine hydrochloride (5.00 g, 22.37 mmol) and pyridine (8.85 g, 112 mmol) in 40 mL of NMP was added 50 % solution of benzyl chloroformate (8.40 g, 24.61 mmol) in toluene dropwise under argon.

The reaction was stirred at 0 °C for 30 min., and then was allowed to warm up to room temperature and stirred for 1 h. The reaction mixture was poured into ice-water; the precipitate was filtered off, washed with water and dried in EtOAc over $MgSO_4$. Evaporation of the solvent afforded 6.77 g of benzyl-2-(3-bromophenyl)hydrazinecarboxylate as yellow solid (yield: 94%).

b) To an ice-cooled mixture of benzyl-2-(3-bromophenyl)hydrazinecarboxylate (6.77 g) and pyridine (8.57 g, mL, 110 mmol) was added 20 % solution of phosgene in toluene (26.6 mL, 50.6 mmol) dropwise. The reaction mixture was stirred for 30 min. in the cold, then for 1 hour at room temperature. Whereupon argon was bubbled through the reaction mixture and diluted with water at 0 °C. The two phases were separated and the organic phase was washed with 2 N HCl solution, water and brine respectively. The organic phase was stirred with charcoal for 30 min. then filtered through a short silica pad. After evaporation of the solvent the crude product was recrystallized from ethanol to give 4.76 g of 5-benzyloxy-3-(3-bromophenyl)-1,3,4-oxadiazol-2(3*H*)-one as beige solid of melting point (m.p.) 89-90°C. (Yield 65 %.)

Example 3:

5-(2-bromopyridin-3-yloxy)-3-(4-methoxyphenyl)-1,3,4-oxadiazol-2(3*H*)-one

a) To an ice-cooled solution of phosgene (52.6 mL, 100 mmol) (20% solution in toluene) in DCM (25 mL) was added a mixture of 2-bromopyridin-3-ol (3.48 g, 20 mmol) and pyridine (2.108 g, 26.7 mmol)) in DCM (50 mL)) portion wise over a period of 1 hour under nitrogen. The reaction was allowed to warm up to room temperature and stirred for additional two hours, then nitrogen was bubbled through the reaction mixture for 30 min. It was evaporated to dryness under vacuum, azeotroped with 100 mL of toluene and dried under vacuum. 2-Bromopyridin-3-yl carbonochloridate was obtained as grey hygroscopic powder (6.59 g, 93 %)

b) To an ice-cooled stirred solution of (4-methoxyphenyl)hydrazine hydrochloride (1.746 g, 10.0 mmol) and pyridine (3.95 g, 50 mmol) in 15 mL of NMP was added portion wise 2-Bromopyridin-3-yl carbonochloridate (4.23 g, 12.0 mmol) under nitrogen. The reaction was stirred at 0 °C for 30 min., and then was allowed to warm up to room

temperature and stirred for 1 h. The reaction mixture was poured into ice-water; the mixture was extracted with EtOAc and dried over $MgSO_4$. After evaporation of the solvent yellow oil was obtained that was purified by column chromatography in petroleumether:EtOAc = 2:1 mixture to give 1.09 g of 2-bromopyridin-3-yl 2-(4-methoxyphenyl)hydrazinecarboxylate as white solid (yield: 32.2 %)

c) To an ice-cooled mixture of 2-bromopyridin-3-yl 2-(4-methoxyphenyl)hydrazinecarboxylate (1.071 g, 3.17 mmol) and pyridine (1.303 g, 16.47 mmol) was added 20 % solution of phosgene in toluene (4.0 mL, 7.6 mmol) dropwise. The reaction mixture was stirred for 30 min. in the cold, then for 1.5 hours at room temperature. Whereupon nitrogen was bubbled through the reaction mixture and diluted with water at 0 °C. The two phases were separated and the aqueous phase was extracted with DCM. The combined organic phases were dried over $MgSO_4$ and filtered. After evaporation the crude 5-(2-bromopyridin-3-yloxy)-3-(4-methoxyphenyl)-1,3,4-oxadiazol-2(3*H*)-one was purified by column chromatography in petroleumether:EtOAc =-2:1 mixture. Yield 75 mg beige powder 6.50 %.); m.p. 116.5-117.5°C

Example 4:

5-(4-Bromo-2-methoxyphenoxy)-3-phenyl-1,3,4-oxadiazol-2(3*H*)-one

a) To an ice-cooled stirred solution of 4-bromo-2-methoxyphenol (4.06 g, 20 mmol) and phosgene (11.58 mL, 22.00 mmol) was added dropwise N,N-dimethylaniline (2.424 g, 20.00 mmol) dissolved in Toluene (9 mL). The reaction was stirred at room temperature for 3 hours. Whereupon nitrogen was bubbled through the reaction mixture for 30 min; and quenched with ice. The organic phase was washed with 1N HCl solution and water respectively. After drying over $MgSO_4$ toluene was removed by vacuum and 4-bromo-2-methoxyphenyl carbonochloridate was obtained as oil. Yield: 4.10 g, 77%.

b) To an ice-cooled stirred solution of phenylhydrazine (1.081 g, 10.0 mmol) and pyridine (3.95 g, 50 mmol) in 15 mL of NMP was added portion wise 4-bromo-2-methoxyphenyl carbonochloridate (3.19 g, 12.0 mmol). The reaction was stirred at room temperature for 1 hour. Then, it was poured into ice-1N HCl mixture; the precipitate was

filtered off, washed with water and dried under vacuum. 4-Bromo-2-methoxyphenyl 2-phenylhydrazinecarboxylate was obtained as white powder by triturating with petroleumether. Yield: 3.38 g.

c) To an ice-cooled mixture of 4-Bromo-2-methoxyphenyl 2-phenylhydrazinecarboxylate (3.20 g, 9.49 mmol) and pyridine (3.90 g, 49.4 mmol) was added 20 % solution of phosgene in toluene (11.98 mL, 22.78 mmol) dropwise. The reaction mixture was stirred for 15 min. in the cold, then for 45 min. at room temperature. Whereupon nitrogen was bubbled through the reaction mixture and diluted with water at 0 °C. The two phases were separated and the organic phase was washed with 1N HCl and water respectively. After drying over $MgSO_4$ the solvent was removed by vacuum. 5-(4-Bromo-2-methoxyphenoxy)-3-phenyl-1,3,4-oxadiazol-2(3*H*)-one was purified by column chromatography in petroleum ether:EtOAc = 10:1 mixture. Yield: 1.198 g white powder 34.8 %.); m.p. 77-78°C

Example 5:

5-(4-chlorophenoxy)-3-(4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one

a) To a stirred solution of 4-methoxyphenylhydrazine hydrochloride (6 g, 34.4 mmol in N-methyl-2-pyrrolidinone (48 mL) at room temperature was added pyridine (13.89 mL, 172 mmol) dropwise and the resulting solution was cooled to 0 °C. Thereupon 4-chlorophenyl carbonochloridate (5.29 mL, 37.8 mmol) was added dropwise. The resulting solution was stirred at 0 °C for 30 min and then allowed to warm to room temperature and stirred for 1 h. The reaction mixture was poured into ice/water and stirred for 1 h. The precipitate was filtered off, washed with water and dried. Recrystallisation from isopropanol gave 4-chlorophenyl 2-(4-methoxyphenyl)hydrazinecarboxylate as a white solid, (5.74 g, 57 %).

b) To a stirred solution of 4-chlorophenyl 2-(4-methoxyphenyl)hydrazinecarboxylate (5.74 g, 19.61 mmol) in dichloromethane (150 mL) at room temperature was added pyridine (8.25 mL, 102 mmol) and the resulting solution was cooled to 0 °C. A 20 % solution of phosgene (24.76 mL, 47.1 mmol) in toluene was then added dropwise. The mixture was stirred at 0 °C for 30 min and then allowed to warm to room temperature and

stirred for 1 h. Nitrogen was bubbled through the mixture for 30 min, which was then cooled to 0° C and diluted with water. The phases were separated and organic phase was washed with 2 N hydrochloric acid, water and brine, then dried ($MgSO_4$) and filtered onto activated carbon. After stirring for 15 min, the suspension was filtered through a short pad of silica and celite. The filtrate was evaporated and the resulting yellow solid was crystallized twice from isopropanol to give 5-(4-chlorophenoxy)-3-(4-methoxyphenyl)-1,3,4-oxadiazol-2(3H)-one as a white solid, (3.14 g, 50 %).

c) A stirred solution of 5-(4-chlorophenoxy)-3-(4-methoxyphenyl)-1,3,4-oxadiazol-2(3H)-one (3.14 g, 9.85 mmol) in dichloromethane (30 mL) under nitrogen was cooled to - 80 °C (suspension) and boron tribromide (1.863 mL, 19.70 mmol) was added dropwise. The resulting pale pink solution was stirred at -80 °C for 5 min and then allowed to warm to room temperature and stirred for 2 h. The reaction mixture was cooled to 0 °C and ice/water was carefully added. The resulting precipitate was filtered, washed with water and dried. Recrystallisation from isopropanol gave 5-(4-chlorophenoxy)-3-(4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one as a white solid, (2.2 g, 73 %) of m.p. 163.5-164.5 °C.

Example 6:

3-(3-aminophenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one

a) To a stirred solution of 3-nitrophenylhydrazine hydrochloride (1 g, 5.27 mmol) in N-methyl-2-pyrrolidinone (8 mL) at room temperature was added pyridine (2.13 mL, 26.4 mmol) dropwise. The resulting mixture was cooled to 0 °C and 2,4-difluorophenyl carbonochloridate (1.22 g, 6.33 mmol) was added dropwise. The resulting mixture was stirred at 0 °C for 30 min and then at room temperature for 1 h, whereupon it was poured onto ice/water. The mixture was extracted with ethyl acetate and the organic extracts were washed with 2 N hydrochloric acid, water and brine, then dried ($MgSO_4$) filtered and evaporated to give 2,4-difluorophenyl 2-(3-nitrophenyl)hydrazinecarboxylate as a yellow oil, (1.6 g, 100%).

b) To a solution of 2,4-difluorophenyl 2-(3-nitrophenyl)hydrazinecarboxylate (1.7 g, 5.50 mmol) in dichloromethane (30 mL) at room temperature was added pyridine

(2.312 mL, 28.6 mmol) dropwise and the solution was cooled to 0 °C. A 20 % solution of phosgene (6.94 mL, 13.19 mmol) in toluene was added dropwise. The resulting pink suspension was stirred at 0 °C for 30 min and then allowed to warm to room temperature and stirred for 1 h. Nitrogen was bubbled through the mixture for 30 min, which was then cooled to 0 °C and diluted with water. The phases were separated and organic phase was washed with 2 N hydrochloric acid, water and brine, then dried ($MgSO_4$), filtered and evaporated. The resulting yellow oil was purified by chromatography (petroleum ether/ethyl acetate, 6/1 to 4/1). Fractions with pure product were pooled and evaporated to give a pink oil that solidified on standing. This was crystallized from heptane and diethyl ether to give 5-(2,4-difluorophenoxy)-3-(3-nitrophenyl)-1,3,4-oxadiazol-2(3H)-one as a white solid, (260 mg, 14 %).

c) To a stirred suspension of 5-(2,4-difluorophenoxy)-3-(3-nitrophenyl)-1,3,4-oxadiazol-2(3H)-one (251 mg, 0.749 mmol) in methanol (20 mL) at room temperature under nitrogen, was added 10% palladium on carbon (25 mg). Hydrogen gas was then bubbled through the reaction mixture for 1 h. The reaction mixture was filtered through a short pad of celite and the filtrate was evaporated. The resulting yellow solid was purified by column chromatography (petroleum ether/ethyl acetate 6/1 to 4/1). Homogeneous fractions were pooled and evaporated and the resulting pale yellow solid was crystallized from isopropanol to give 3-(3-aminophenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one as a pale yellow solid, (128 mg, 56 %) of m.p. 122-123°C.

Example 7:

3-(4-(1H-pyrrol-1-yl)phenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one

A stirred solution of 3-(4-aminophenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one (203 mg, 0.665 mmol) and 2,5-dimethoxytetrahydrofuran (0.108 mL, 0.832 mmol) in acetic acid (10 mL) was heated at 95 °C for 1 h becoming a deep red solution. The mixture was allowed to cool to room temperature and the solvent was evaporated. Toluene was added to the residue and re-evaporated. The residue was triturated with boiling ethanol, filtered while hot and washed with ethanol. After drying, there was obtained 3-(4-(1H-pyrrol-1-yl)phenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one as a reddish-brown solid, (109 mg, 46 %), of m.p. 181-182°C.

Example 8:

3-(3'-methoxybiphenyl-4-yl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one

To a stirred suspension of 3-(4-bromophenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one (526 mg, 1.58 mmol), 3-methoxyphenylboronic acid (336 mg, 2.21 mmol) and potassium carbonate (567 mg, 4.10 mmol) in dimethoxyethane (20 mL) and water (10 mL) under nitrogen was added tetrakis(triphenylphosphine)palladium(0) (91 mg, 0.079 mmol). The resulting mixture was stirred at 85 °C for 3 h and then allowed to cool to room temperature. The solvent was evaporated and the residue partitioned between dichloromethane and water. The organic phase was separated, washed with water and brine, then dried ($MgSO_4$) and filtered onto activated carbon. After stirring for 10 minutes, the suspension was filtered through a short silica gel/celite pad and the filtrate evaporated to leave an oil that solidified on standing. Recrystallisation from dichloromethane/ethanol gave 3-(3'-methoxybiphenyl-4-yl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one as white crystals (182 mg, 32 %) of m.p. 102-103 °C.

Example 9:

5-(2,4-difluorophenoxy)-3-(4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one

a) To a stirred solution of 4-methoxyphenylhydrazine hydrochloride (6 g, 34.4 mmol) in N-methyl-2-pyrrolidinone (48 mL) at room temperature was added pyridine (13.89 mL, 172 mmol) dropwise and the resulting solution cooled to 0 °C. 2,4-difluorophenyl carbonochloridate (7.94 g, 41.2 mmol) was then added dropwise. The solution was stirred at 0 °C for 30 min and then allowed to warm to room temperature and stirred for 2 h. The reaction mixture was poured into ice/water and stirred for 1 h. The mixture was extracted with ethyl acetate and the organic extracts were washed with 2 N hydrochloric acid, water and brine, then dried ($MgSO_4$) and filtered onto activated carbon. After stirring for 15 mins, the suspension was filtered through a short pad of silica gel and celite. The filtrate was evaporated and the resulting yellow oil was crystallized from isopropanol to give 2,4-difluorophenyl 2-(4-methoxyphenyl)hydrazinecarboxylate as a white solid, (3.82 g, 38 %).

b) To a stirred solution of 2,4-difluorophenyl 2-(4-methoxyphenyl)hydrazinecarboxylate (3.82 g, 12.98 mmol) in dichloromethane (120 mL) at room temperature was added pyridine dropwise (5.46 mL, 67.5 mmol) and the resulting solution was cooled to 0 °C. Thereupon, a 20 % solution of phosgene (16.39 mL, 31.2 mmol) in toluene was added dropwise. The resulting orange solution was stirred at 0 °C for 30 min, then allowed to warm to room temperature and stirred for 1 h. Nitrogen was bubbled through the mixture for 30 min, then cooled to 0 °C and diluted with water. The phases were separated and the organic phase was washed with 2N hydrochloric acid, water and brine, then dried ($MgSO_4$), and filtered onto activated carbon. After stirring for 30 min, the suspension was filtered through short pad of silica gel and celite. The filtrate was evaporated and the resulting pale yellow solid was crystallized from isopropanol to give 5-(2,4-difluorophenoxy)-3-(4-methoxyphenyl)-1,3,4-oxadiazol-2(3H)-one as a white solid (1.77 g, 43 %).

c) A stirred solution of 5-(2,4-difluorophenoxy)-3-(4-methoxyphenyl)-1,3,4-oxadiazol-2(3H)-one (241 mg, 0.753 mmol) in dichloromethane (5 mL) under nitrogen was cooled to -80 °C, whereupon boron tribromide (0.142 mL, 1.505 mmol) was added dropwise. The solution was stirred at -80 °C for 5 minutes and then allowed to warm to room temperature and stirred for 1 h. The reaction mixture was then cooled to 0 °C and carefully quenched by the addition of water. The mixture was extracted with 30% isopropanol in dichloromethane and the combined organic layers were washed with water and brine, then dried ($MgSO_4$), filtered and evaporated. The resulting off white solid was crystallized from isopropanol to give 5-(2,4-difluorophenoxy)-3-(4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one as a white solid, (158 mg, 69 %) of m.p. 174.5-176 °C.

Example 10:

5-(4-chlorophenoxy)-3-(2-fluoro-4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one

a) To a stirred solution of 3-fluoro-4-nitrophenol (5 g, 31.8 mmol) in acetone (100 mL) at room temperature was added potassium carbonate (15.40 g, 111 mmol) in one portion followed by dimethyl sulphate (6.04 mL, 63.7 mmol) dropwise. The resulting yellow suspension was stirred at reflux for 2 h. The reaction mixture was then cooled to room temperature, filtered and the filtrate was evaporated. The resulting yellow liquid was

purified by column chromatography (petroleum ether/ethyl acetate, 9/1). Homogeneous fractions were pooled and evaporated and the resulting yellow oil was crystallized from diethyl ether/petroleum ether to give 2-fluoro-4-methoxy-1-nitrobenzene as pale yellow crystals, (2.81 g, 52 %).

b) To a stirred solution of 2-fluoro-4-methoxy-1-nitrobenzene (2.76 g, 16.13 mmol) in methanol (50 mL) at room temperature under nitrogen was added 10% palladium on carbon (276 mg). Hydrogen gas was bubbled through the reaction mixture for 1 h, whereupon the suspension was filtered through a short pad of celite. The filtrate was evaporated and the resulting red oil was triturated with petroleum ether. The resulting orange solid was filtered off and dried to give 2-fluoro-4-methoxyaniline, (2.2 g, 97 %).

c) To a stirred solution of 2-fluoro-4-methoxyaniline (2.13 g, 15.09 mmol) in concentrated hydrochloric acid (13.97 mL) at -10 °C was added a solution of sodium nitrite (1.121 g, 16.25 mmol) in water (6.96 mL) dropwise whilst maintaining the temperature below -10 °C. The resulting mixture was stirred at -10 °C for 1 h. Thereupon a solution of tin(II) chloride dihydrate (2.90 mL, 34.8 mmol) in concentrated hydrochloric acid (11.61 mL) was added dropwise whilst maintaining the temperature below -5 °C. The reaction mixture was stirred at -5 °C for 1 h and then allowed to warm to room temperature. The beige suspension was filtered, the filter cake was dissolved in water and the resulting solution was made basic by the addition of 3 N aqueous sodium hydroxide solution. The mixture was then extracted with dichloromethane and the combined extracts washed with water and brine, then dried ($MgSO_4$), filtered and evaporated. The resulting dark red-brown solid was was crystallized from diethyl ether/petroleum ether to afford (2-fluoro-4-methoxyphenyl)hydrazine as a dark pink solid (1.24 g, 53 %).

d) To a stirred solution of (2-fluoro-4-methoxyphenyl)hydrazine (1.22 g, 7.81 mmol) in N-methyl-2-pyrrolidinone (10 mL) at room temperature was added pyridine (3.16 mL, 39.1 mmol) dropwise and the resulting solution was cooled to 0 °C. Thereupon 4-chlorophenyl carbonochloridate (1.640 mL, 11.72 mmol) was added dropwise. The solution was then stirred at 0 °C for 30 minutes and then allowed to warm to room temperature and stirred for 1 h. The reaction mixture was poured into ice/water and stirred for 1 h. The precipitate was filtered off, washed with water and dried to give

4-chlorophenyl 2-(2-fluoro-4-methoxyphenyl)hydrazinecarboxylate as a beige solid, (2.5 g, 100 %).

e) To a stirred solution of 4-chlorophenyl 2-(2-fluoro-4-methoxyphenyl)hydrazinecarboxylate (2.5 g, 8.05 mmol) in dichloromethane (40 mL) at room temperature was added pyridine (3.38 mL, 41.8 mmol) dropwise and the resulting solution was cooled to 0 °C. A 20 % solution of phosgene in toluene (10.16 mL, 19.31 mmol) was then added dropwise. The resulting red suspension was stirred at 0 °C for 30 minutes and then allowed to warm to room temperature and stirred for 1 h. Nitrogen was bubbled through the mixture for 30 minutes before cooling to 0 °C and diluting with water. The phases were separated and the organic phase was washed with 2 N hydrochloric acid, water and brine. The organic layer was dried ($MgSO_4$), filtered onto activated carbon and stirred for 30 min. The suspension was filtered through a short pad of silica gel and celite. The filtrate was evaporated and the resulting yellow solid was crystallized twice from isopropanol to give 5-(4-chlorophenoxy)-3-(2-fluoro-4-methoxyphenyl)-1,3,4-oxadiazol-2(3H)-one as a pale beige solid, (1.2 g, 44 %).

f) A stirred solution of 5-(4-chlorophenoxy)-3-(2-fluoro-4-methoxyphenyl)-1,3,4-oxadiazol-2(3H)-one (1.2 g, 3.56 mmol) in dichloromethane (40 mL) under nitrogen was cooled to -80 °C and boron tribromide (0.674 mL, 7.13 mmol) was added dropwise. The solution was stirred at -80 °C for 5 min, then was allowed to warm to room temperature and stirred for 5 h. The reaction mixture was then cooled to 0 °C and carefully quenched by the addition of water. A mixture of 30 % isopropanol in dichloromethane was added and the phases were separated. The aqueous phase was extracted with dichloromethane and the combined extracts were washed with water and brine. The organic layer was dried ($MgSO_4$), filtered and evaporated. The resulting green solid was dissolved in hot isopropanol and insoluble material filtered off. The filtrate was evaporated and the residue crystallized from dichloromethane/petroleum ether to give a dark pink solid. This solid was dissolved in dichloromethane and activated carbon was added. After stirring for 15 minutes, the suspension was filtered through a short pad of silica gel and celite. The filtrate was evaporated to small volume and PE was added. The resulting solid was filtered off, washed with petroleum ether and dried to give 5-(4-chlorophenoxy)-3-(2-fluoro-4-

hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one as an off-white solid (379 mg, 33 %) of m.p. 180-182 °C.

Example 11:

3-(4-amino-3-methoxyphenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one hydrochloride

a) Methyl iodide (11.94 mL, 191 mmol) was added dropwise to a stirred suspension of 5-fluoro-2-nitrophenol (10 g, 63.7 mmol) and potassium carbonate (17.59 g, 127 mmol) in acetone (318 mL) at room temperature. The reaction mixture was allowed to stir at room temperature for 4 days, whereupon the acetone was evaporated under reduced pressure and the residue was partitioned between water and ethyl acetate. The aqueous layer was neutralised with concentrated hydrochloric acid. The organic layer was separated, washed with water and brine, dried ($MgSO_4$), filtered and evaporated to give an off-white solid that was recrystallised from isopropanol/dichloromethane to give 4-fluoro-2-methoxy-1-nitrobenzene as an off-white solid (9.6 g, 88%).

b) Hydrazine hydrate (5.96 mL, 123 mmol) was added dropwise to a stirred solution of 4-fluoro-2-methoxy-1-nitrobenzene (7g, 40.9 mmol) in ethanol (84 mL) at room temperature. The solution became yellow then bright orange. The reaction mixture was allowed to stir at 100 °C for 2 h and then cooled down to 0 °C. The yellow precipitate was separated by filtration and washed with cold ethanol. The mother liquor was evaporated to half the volume, then it was cooled down to 0 °C and more precipitate formed. The precipitate was collected and washed with cold ethanol. The precipitates were combined to give (3-methoxy-4-nitrophenyl)hydrazine (4.18 g, 56%).

c) 2,4-Difluorophenyl carbonochloridate (4.63 g, 24.02 mmol) was added dropwise to a stirred solution of (3-methoxy-4-nitrophenyl)hydrazine (4 g, 21.84 mmol) and pyridine (8.83 mL, 109 mmol) NMP (40 mL) at 0 °C. The reaction mixture was allowed to stir at 0 °C for 15 min and then at room temperature for 45 min. The solution was then poured into a mixture of ice/1 N hydrochloric acid solution. The product was extracted with ethyl acetate and then with dichloromethane/isopropanol. The combined organic layers were washed with brine, dried ($MgSO_4$), filtered and evaporated to give an orange oil. Column

chromatography (silica, petroleum ether/ethyl acetate 2:1 then 1:1) gave 2,4-difluorophenyl 2-(3-methoxy-4-nitrophenyl)hydrazinecarboxylate as an orange oil/solid (5.84g, 79%).

d) A 20 % solution of phosgene in toluene (21.74 mL, 41.3 mmol) was added dropwise to a stirred solution of 2,4-difluorophenyl 2-(3-methoxy-4-nitrophenyl)hydrazinecarboxylate (5.84 g, 17.21 mmol) and pyridine (7.24 mL, 90 mmol) in dichloromethane (115 mL) at 0 °C. The solution became dark red and was allowed to stir at 0 °C for 15 min and then at room temperature for 45 min. Air was bubbled through the solution for 10 min and then water was added at 0 °C. The organic layer was separated and washed with 1 N hydrochloric acid, followed by water and brine, then dried ($MgSO_4$), filtered and evaporated to give a dark red oil. Column chromatography (petroleum ether/dichloromethane 2:1 then 1:1) gave a yellow solid that was recrystallised from isopropanol/dichloromethane to give 5-(2,4-difluorophenoxy)-3-(3-methoxy-4-nitrophenyl)-1,3,4-oxadiazol-2(3H)-one (722 mg, 11.5%).

e) 10 % Palladium on carbon (18.5 mg) was added to a stirred solution of 5-(2,4-difluorophenoxy)-3-(3-methoxy-4-nitrophenyl)-1,3,4-oxadiazol-2(3H)-one (200 mg, 0.548 mmol) in methanol (15 mL) at room temperature. The reaction mixture was allowed to stir at room temperature under an atmosphere of hydrogen gas for 3 h. Further 10 % palladium on charcoal catalyst (9 mg) was added and the reaction mixture was allowed to stir at room temperature under hydrogen for a further 2 h. The solution was then filtered through a short celite pad and the celite was washed with ethyl acetate. The filtrate was evaporated to give a brown solid that was recrystallised from isopropanol to give a beige solid (124 mg). This was taken up in ethyl acetate (5 mL) and cooled to 0 °C before 2N hydrogen chloride in ether (2 mL) was added dropwise. The precipitate that formed was filtered off, washed with ethyl acetate and dried to give 3-(4-amino-3-methoxyphenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one hydrochloride as a beige solid (120 mg, 90%) of m.p. 186-188 °C.

Example 12:

3-(4-amino-3-(2-methoxyethoxy)phenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol- 2(3H)-one

a) Sodium iodide (0.191 g, 1.273 mmol) was added to a stirred suspension of 5-fluoro-2-nitrophenol (4 g, 25.5 mmol), potassium carbonate (10.56 g, 76 mmol) and 1-chloro-2-methoxyethane (5.10 mL, 56.0 mmol) in DMF (102 mL) at room temperature. The reaction mixture was allowed to stir at 80 °C overnight. Further 1-chloro-2-methoxyethane (6.38 mL, 70.0 mmol) was added and the reaction mixture was allowed to stir at 80 °C for 4 h. Water and ethyl acetate were added and the organic layer was separated. The aqueous layer was neutralised with 1 N hydrochloric acid and extracted with ethyl acetate. The combined organic layers were washed with water, dried ($MgSO_4$), filtered and evaporated to give a yellow oil. Column chromatography (petroleum ether/ethyl acetate 6:1) gave 4-fluoro-2-(2-methoxyethoxy)-1-nitrobenzene as a clear oil (2.26g, 39%).

b) Hydrazine hydrate (1.531 mL, 31.5 mmol) was added to a stirred solution of 4-fluoro-2-(2-methoxyethoxy)-1-nitrobenzene (2.26 g, 10.50 mmol) in ethanol (21.43 mL) at room temperature. The reaction mixture was allowed to stir at 85 °C for 3 h. The solution was then cooled down to 0 °C causing formation of a precipitate. The solid was separated by filtration and washed with cold ethanol. The mother liquors were evaporated to half the original volume and cooled down to 0 °C. The precipitate that formed that was separated by filtration and washed with cold ethanol. The combined precipitates of (3-(2-methoxyethoxy)-4-nitrophenyl)hydrazine (1.75 g, 73%) were used in the next step without further purification.

c) 2,4-difluorophenyl carbonochloridate (1.631 g, 8.47 mmol) was added dropwise to a stirred solution of (3-(2-methoxyethoxy)-4-nitrophenyl)hydrazine (1.75 g, 7.70 mmol) and pyridine (3.11 mL, 38.5 mmol) in NMP (14 mL) at 0 °C. The reaction mixture was allowed to stir for 20 min at 0 °C and then for 1 h at room temperature. The solution was poured onto a 1 N hydrochloric acid/ice mixture. After stirring for 30 min, ethyl acetate was added and the organic layer was separated, washed with 1 N hydrochloric acid, water and brine. The organic layer was then dried ($MgSO_4$) and evaporated to leave an orange oil. Column chromatography (petroleum ether/ethyl acetate 2:1 then 1:1 then 1:2) gave an orange oil.

The oil was dissolved in ethyl acetate and was washed with water. The organic layer was dried ($MgSO_4$), filtered and evaporated to give 2,4-difluorophenyl 2-(3-(2-methoxyethoxy)-4-nitrophenyl)hydrazinecarboxylate as an orange foam (1.54 g, 52%).

d) A 20 % toluene solution of phosgene (5.07 mL, 9.64 mmol) was added dropwise to a stirred solution of 2,4-difluorophenyl 2-(3-(2-methoxyethoxy)-4-nitrophenyl)hydrazinecarboxylate (1.54 g, 4.02 mmol) and pyridine (1.690 mL, 20.89 mmol) in dichloromethane (27 mL) at 0 °C. The deep red solution was allowed to stir at 0 °C for 15 min and at room temperature for 1 h. Water was added at 0 °C and the organic layer was separated and washed with 1 N hydrochloric acid followed by water and brine. The organic layer was dried ($MgSO_4$), filtered and evaporated to leave a red oil. Column chromatography (petroleum ether/ethyl acetate 6:1 then 4:1) gave a brown solid that was recrystallised from isopropanol/dichloromethane to give 5-(2,4-difluorophenoxy)-3-(3-(2-methoxyethoxy)-4-nitrophenyl)-1,3,4-oxadiazol-2(3H)-one as a beige solid (539 mg, 33%).

e) 10 % Palladium on charcoal (35 mg) was added to a stirred solution of 5-(2,4-difluorophenoxy)-3-(3-(2-methoxyethoxy)-4-nitrophenyl)-1,3,4-oxadiazol-2(3H)-one (267 mg, 0.652 mmol) in methanol (18 mL) at room temperature. The reaction mixture was allowed to stir at room temperature under an atmosphere of hydrogen gas for 1 h. The mixture was then filtered through a short celite pad and the celite was washed with ethyl acetate. The filtrate was evaporated to give an orange oil. Column chromatography (petroleum ether/ethyl acetate 4:1 then 2:1) gave an orange oil that crystallised at room temperature. This was recrystallised from isopropanol/dichloromethane to give 3-(4-amino-3-(2-methoxyethoxy)phenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one as a beige solid (118 mg, 45%) of m.p. 74-75 °C.

Example 13:

3-(3-amino-4-methoxyphenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one

a) To vigorously stirred fuming nitric acid (5 mL) cooled to 0 °C was added 5-(2,4-difluorophenoxy)-3-(4-methoxyphenyl)-1,3,4-oxadiazol-2(3H)-one (500 mg, 1.561 mmol) in portions. The yellow suspension was stirred at 0 °C for 5 min, then was allowed to warm

to room temperature and stirred for 30min. The reaction mixture was poured into ice/water and the resulting precipitate was filtered off, washed with water, and dried to give 5-(2,4-difluorophenoxy)-3-(4-methoxy-3-nitrophenyl)-1,3,4-oxadiazol-2(3H)-one as a pale yellow solid (533 mg, 93 %).

b) To a stirred suspension of 5-(2,4-difluorophenoxy)-3-(4-methoxy-3-nitrophenyl)-1,3,4-oxadiazol-2(3H)-one (520 mg, 1.424 mmol) in methanol (20 mL) at room temperature was added 10 % palladium on carbon (52 mg).Hydrogen gas was bubbled through the mixture for 2 h, whereupon the catalyst was removed by filtration through short pad of celite. The filtrate was evaporated and the resulting pale brown solid was dissolved in dichloromethane. Activated carbon was added and the suspension was stirred for 15 min before filtration through a short pad of silica gel and celite. The filtrate was evaporated and the resulting yellow solid was crystallized from isopropanol to give 3-(3-amino-4-methoxyphenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one as an orange solid, (280 mg, 59 %) of m.p. of 101°C.

Example 14:

5-(2,4-difluorophenoxy)-3-(4-methoxy-3-(1H-pyrrol-1-yl)phenyl)-1,3,4-oxadiazol-2(3H)-one

A stirred solution of 3-(3-amino-4-methoxyphenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one (162 mg, 0.483 mmol) and 2,5-dimethoxytetrahydrofuran (0.077 mL, 0.598 mmol) in acetic acid (5 mL) was heated at 90 °C for 1 h and then cooled to room temperature. The solvent was removed under reduced pressure and toluene was added to the residue and re-evaporated. The residue was taken up in dichloromethane and stirred for 30 mins with activated carbon before filtration through a short silica/celite pad. The filtrate was evaporated to leave an oil that solidified after addition of ether. Recrystallisation from isopropanol gave 5-(2,4-difluorophenoxy)-3-(4-methoxy-3-(1H-pyrrol-1-yl)phenyl)-1,3,4-oxadiazol-2(3H)-one as a pale orange solid, (137 mg, 73 %) of m.p. 136°C.

Table 1 shows further compounds that were prepared in a similar manner. For solid materials, the melting point is given. For oils, the NMR data is given in Table 2.

Table 1

Name	m.p. (°C)
5-(benzyloxy)-3-(3-chlorophenyl)-1,3,4-oxadiazol-2(3H)-one	79-80
3-(4-bromophenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	109-110
3-(3'-methoxybiphenyl-4-yl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	102-103
5-(benzyloxy)-3-p-tolyl-1,3,4-oxadiazol-2(3H)-one	85
5-(benzyloxy)-3-(4-methoxyphenyl)-1,3,4-oxadiazol-2(3H)-one	79-80
5-(benzyloxy)-3-(2-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	61-62
5-(benzyloxy)-3-(4-cyanophenyl)-1,3,4-oxadiazol-2(3H)-one	118-119
3-(4-cyanophenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	100
5-(benzyloxy)-3-(2,5-dimethylphenyl)-1,3,4-oxadiazol-2(3H)-one	oil
5-(benzyloxy)-3-(3-nitrophenyl)-1,3,4-oxadiazol-2(3H)-one	108-109
3-(3-nitrophenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	117
3-(4-methoxyphenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	75-76
5-(benzyloxy)-3-phenyl-1,3,4-oxadiazol-2(3H)-one	86-87
3-(4-hydroxyphenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	159-160
5-phenoxy-3-phenyl-1,3,4-oxadiazol-2(3H)-one	93
5-phenoxy-3-(4-(pyridin-3-yl)phenyl)-1,3,4-oxadiazol-2(3H)-one	146-147
3-(biphenyl-4-yl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	110-111

3-(3',4'-dimethoxybiphenyl-4-yl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	149-150
5-(benzyloxy)-3-(4-tert-butylphenyl)-1,3,4-oxadiazol-2(3H)-one	59
5-(benzyloxy)-3-(4-bromophenyl)-1,3,4-oxadiazol-2(3H)-one	149-150
3-(4-bromophenyl)-5-(4-nitrophenoxy)-1,3,4-oxadiazol-2(3H)-one	185-186
3-(3-chlorophenyl)-5-(4-nitrophenoxy)-1,3,4-oxadiazol-2(3H)-one	171-172
5-(4-chlorophenoxy)-3-phenyl-1,3,4-oxadiazol-2(3H)-one	105-106
3-(3-bromophenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	83-84
3-(biphenyl-3-yl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	77-78
5-phenoxy-3-(3-(pyridin-3-yl)phenyl)-1,3,4-oxadiazol-2(3H)-one	81-82
5-(4-methoxyphenoxy)-3-phenyl-1,3,4-oxadiazol-2(3H)-one	61-62
5-(benzyloxy)-3-(3-bromophenyl)-1,3,4-oxadiazol-2(3H)-one	89-90
5-(4-(benzyloxy)phenoxy)-3-phenyl-1,3,4-oxadiazol-2(3H)-one	99-100
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3-(3-amino-4-methoxyphenyl)-5-(cyclohexyloxy)-1,3,4-oxadiazol-2(3H)-one hydrochloride	185
5-(2,4-difluorophenoxy)-3-(4-methoxy-3-(1H-pyrrol-1-yl)phenyl)-1,3,4-oxadiazol-2(3H)-one	136
3-(5-amino-2-fluoro-4-methoxyphenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one hydrochloride	191-192 dec.
5-(2,4-difluorophenoxy)-3-(2-fluoro-4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	135
3-(4-amino-3-methoxyphenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one	104-105

The NMR-data for the obtained oils are indicated in Table 2 below. The NMR spectra were recorded on a Bruker Avance DPX400 spectrometer with solvent used as internal standard. Data are reported in the following order: approximate chemical shift (ppm), number of protons, multiplicity (br, broad; d, doublet; m, multiplet; s, singlet, t; triplet) and coupling constant (Hz).

Table 2

Compound	NMR data
5-(benzyloxy)-3-(2,5-dimethylphenyl)-1,3,4-oxadiazol-2(3H)-one	(1H NMR, CDCl3, 400 MHz) δ: 7.49-7.40 (5H, m), 7.19 (2H, m), 7.13 (1H, dd, J=1.5 and 7.8), 5.34 (2H, s), 2.35 (3H, s), 2.28 (3H, s) (13C NMR, CDCl3, 100 MHz) δ: 154.9, 149.5, 136.5, 133.3, 133.1, 131.7, 131.0, 129.9, 129.1, 128.6, 128.5, 126.7,72.6, 20.9, 17.8
3-(2-fluorophenyl)-5-(4-methoxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	(1H NMR, CDCl3, 400 MHz) δ: 7.48, (1H, dt, J=1.7, 7.6), 7.38 (1H, m), 7.30 (2H, m, J=9.3), 7.21 (2H, m), 6.94 (2H, m, J=9.3), 3.84 (3H, s) (13C NMR, CDCl3, 100 MHz) δ: 157.6, 156.2 (d, J=254), 154.9, 148.8, 144.7, 130.2 (d, J=8), 127.0, 124.4 (d, J=4), 122.6 (d, J=12), 120.6, 116.8 (d, J=19), 114.7, 55.7
3-(2,4-difluorophenyl)-5-(3-(trifluoromethyl)phenoxy)-1,3,4-oxadiazol-2(3H)-one	(1H NMR, CDCl3, 400 MHz) δ: 7.68 (1H, m), 7.62 (3H, m), 7.50 (1H, m), 6.99 (2H, m) (13C NMR, CDCl3, 100 MHz) δ: 162.5 (dd, J=11 and 252), 156.8 (dd, J=13 and 257), 153.8, 151.1, 148.6, 132.4 (q, J=34), 130.6, 128.2 (dd, J=1 and 10), 123.5 (q, J=3.5), 122.9 (q, J=271), 122.8, 118.8 (dd, J=4 and 12), 116.8 (q, J=4), 111.9 (dd, J= 4 and 23), 105.4 (dd, J=23 and 26)
3-(2-chlorophenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	(1H NMR, CDCl3, 400 MHz) δ: 7.50-7.30 (8H, m), 7.27 (m, 1H) (13C NMR, CDCl3, 100 MHz) δ: 154.1, 151.3, 149.0, 132.0 (2 sig.), 130.7, 130.5, 129.8, 128.9, 127.5, 126.6, 119.3

5-(2,4-di-tert-butylphenoxy)-3-(2-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	(1H NMR, CDCl3, 400 MHz) δ: 7.48 (1H, m, J=2 and 8), 7.43 (1H, d, J=2.5), 7.37 (1H, m), 7.26 (1H, dd, J=2.5 and 8.6), 7.24-7.16 (3H, m), 1.42 (9H, s), 1.32 (9H, s) (13C NMR, CDCl3, 100 MHz) δ: 156.5 (d, J=255), 154.8, 149.3, 149.2, 148.2, 139.6, 130.4 (d, J=7.5), 127.1, 124.7, 124.5 (d, J=4), 124.3, 120.3, 117.0 (d, J=19.5), 34.9, 34.7, 31.4, 31.3
3-(2-fluorophenyl)-5-isobutoxy-1,3,4-oxadiazol-2(3H)-one	(1H NMR, CDCl3, 400 MHz) δ: 7.54 (1H, m, J=2 and 8.3), 7.41 (1H, m), 7.25 (2H, m), 4.15 (2H, d, J=6.6), 2.18 (1H, m), 1.06 (6H, d, J=6.6) (13C NMR, CDCl3, 100 MHz) δ: 156.4 (d, J=254), 155.9, 149.3, 130.2 (d, J=7.5), 126.9, 124.6 (d, J=4), 122.9 (d, J=11.5), 117.0 (d, J=19.5), 77.2, 27.7, 18.6
3-(2-fluorophenyl)-5-(4-phenylbutoxy)-1,3,4-oxadiazol-2(3H)-one	(1H NMR, CDCl3, 400 MHz) δ: 7.53 (1H, m), 7.41 (1H, m), 7.33 (2H, t, J=7.5), 7.29-7.19 (5H, m), 4.39 (2H, t, J=6.3), 2.72 (2H, t, J=7.3), 1.90 (2H, m), 1.80 (2H, m) (13C NMR, CDCl3, 100 MHz) δ: 156.4 (d, J=255), 155.8, 149.3, 141.5, 130.2 (d, J=8), 128.4 (2 sig.), 126.9, 126.0, 124.6 (d, J=4), 123.0 (d, J=11.5), 117.0 (d, J=20), 71.4, 35.2, 27.8, 27.1
3-(2-fluorophenyl)-5-(5-phenylpentyloxy)-1,3,4-oxadiazol-2(3H)-one	(1H NMR, CDCl3, 400 MHz) δ: 7.51 (1H, m, J=2 and 7.8), 7.39 (1H, m), 7.30 (2H, m, J=7.5), 7.27-7.15 (5H, m), 4.35 (2H, t, J=6.6), 2.66 (2H, t, J=7.3), 1.86 (2H, m), 1.70 (2H, m), 1.50 (2H, m) (13C NMR, CDCl3, 100 MHz) δ: 156.4 (d, J=255), 155.8, 149.3, 142.1, 130.2 (d, J=8), 128.4, 128.3, 126.9, 125.8, 124.6 (d, J=4), 123.0 (d, J=11.5), 117.0 (d, J=19.3), 71.5, 35.7, 30.9, 28.2, 25.1

3-(2-chloro-5-fluorophenyl)-5-(5-phenylpentyloxy)-1,3,4-oxadiazol-2(3H)-one	(1H NMR, CDCl3, 400 MHz) δ: 7.53 (1H, dd, J=2.7 and 6.5), 7.33 (1H, m), 7.30 (2H, t, J=7.3), 7.23-7.16 (4H, m), 4.35 (2H, t, J=6.6), 2.65 (2H, t, J=7.8), 1.86 (2H, m), 1.70 (2H, m), 1.50 (2H, m) (13C NMR, CDCl3, 100 MHz) δ: 156.0, 154.6 (d, J=255), 148.8, 142.0, 129.8 (d, J=7.5), 129.5 (d, J=4), 128.4, 128.3, 126.3, 125.8, 124.0, 118.2 (d, J=21), 71.7, 35.7, 30.9, 28.2, 25.1
5-(4-(3,4-dimethoxyphenyl)butoxy)-3-(2-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	(1H NMR, CDCl3, 400 MHz) δ: 7.51 (1H, m, J=2 and 8), 7.39 (1H, m), 7.27-7.15 (2H, m), 6.81 (1H, d, J=8), 6.73 (1H, dd, J=2 and 8), 6.72 (1H, d, J=2), 4.37 (2H, t, J=6.5), 3.89 (3H, s), 3.87 (3H, s), 2.64 (2H, t, J=7.3), 1.86 (2H, m), 1.78 (2H, m) (13C NMR, CDCl3, 100 MHz) δ: 156.4 (d, J=255), 155.8, 149.3, 148.8, 147.2, 134.1, 130.2 (d, J=8), 126.8, 124.6 (d, J=4), 122.9 (d, J=12), 120.1, 117.0 (d, J=19), 111.5, 111.1, 71.4, 55.9, 55.8, 34.8, 27.8, 27.3
3-(2,4-difluorophenyl)-5-(4-(3,4-dimethoxyphenyl)butoxy)-1,3,4-oxadiazol-2(3H)-one	(1H NMR, CDCl3, 400 MHz) δ: 7.48 (1H, m, J=5.9 and 8.5), 7.03-6.94 (2H, m), 6.81 (1H, d, J=8), 6.72 (1H, dd, J=2 and 8), 6.71 (1H, d, J=2), 4.35 (2H, t, J=6.5), 3.88 (3H, s), 3.87 (3H, s), 2.63 (2H, t, J=7.3), 1.86 (2H, m), 1.77 (2H, m) (13C NMR, CDCl3, 100 MHz) δ: 162.5 (dd, J=10.5 and 252), 157.0 (dd, J=13 and 258), 155.8, 149.3, 148.8, 147.2, 134.0, 128.2 (dd, J=1.5 and 10.5), 120.1, 119.4 (dd, J=4 and 12), 111.9 (dd, J=4 and 23), 111.5, 111.1, 105.4 (dd, J=22.5 and 26.5), 71.4, 58.9, 58.8, 34.8, 27.8, 27.3

3-(4-chloro-2-fluorophenyl)-5-(4-(3,4-dimethoxyphenyl)butoxy)-1,3,4-oxadiazol-2(3H)-one	(1H NMR, CDCl3, 400 MHz) δ: 7.44 (1H, t, J=7.9), 7.25 (1H, d, J=10.5), 7.22 (1H, m), 6.80 (1H, d, J=7.9), 6.72 (1H, dd, J=2 and 7.9), 6.71 (1H, br), 4.35 (2H, t, J=6.5), 3.88 (3H, s), 3.86 (3H, s), 2.63 (2H, t, J=7.5), 1.85 (2H, m), 1.76 (2H, m) (13C NMR, CDCl3, 100 MHz) δ: 156.0 (d, J=258), 155.8, 149.0, 148.8, 147.2, 135.1 (d, J=9), 134.0, 127.3, 125.0 (d, J=4), 121.8 (d, J=12), 120.1, 117.8 (d, J=22.5), 111.5, 111.1, 71.5, 55.9, 55.8, 34.9, 27.8, 27.3
3-(3-chloro-2-fluorophenyl)-5-(4-(3,4-dimethoxyphenyl)butoxy)-1,3,4-oxadiazol-2(3H)-one	(1H NMR, CDCl3, 400 MHz) δ: 7.44 (2H, m), 7.18 (1H, dt, J=1.7 and 8.1), 6.81 (1H, d, J=8), 6.73 (1H, dd, J=2 and 8), 6.72 (1H, br), 4.37 (2H, t, J=6.3), 3.89 (3H, s), 3.87 (3H, s), 2.64 (2H, t, J=7.4), 1.87 (2H, m), 1.77 (2H, m) (13C NMR, CDCl3, 100 MHz) δ: 155.8, 152.3 (d, J=257), 149.0, 148.8, 147.2, 134.0, 130.5, 124.8, 124.5 (d, J=5), 124.3 (d, J=11, 122.8 (d, J=16), 120.1, 111.5, 111.1, 71.6, 55.9, 55.8, 34.8, 27.8, 27.3
3-(2-fluorophenyl)-5-(4-(4-fluorophenyl)butoxy)-1,3,4-oxadiazol-2(3H)-one	(1H NMR, CDCl3, 400 MHz) δ: 7.50 (1H, dt, J=2 and 8.3), 7.39 (1H, m), 7.27-7.19 (2H, m), 7.14 (2H, m, J=5.5 and 8.5), 6.98 (2H, m, J=8.7), 4.36 (2H, t, J=6.4), 2.66 (2H, t, J=7.5), 1.85 (2H, m), 1.77 (2H, m) (13C NMR, CDCl3, 100 MHz) δ: 161.3 (d, J=243), 156.4 (d, J=255), 155.7, 149.3, 137.1 (d, J=3), 130.2 (d, J=8), 129.7 (d, J=8), 126.8, 124.6 (d, J=4), 122.9 (d, J=11.5), 117.1 (d, J=19.5), 115.1 (d, J=21.5), 71.3, 34.4, 27.7, 27.3

3-(4-chloro-2-fluorophenyl)-5-(4-hydroxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	(1H NMR, CDCl3, 400 MHz) δ: 7.42 (1H, t, J=8), 7.25 (1H, dd, J=2.3 and 9.9), 7.23-7.18 (3H, m), 6.87 (2H, m, J=9), 5.16 (1H, s) (13C NMR, CDCl3, 100 MHz) δ: 156.1 (d, J=259), 155.3, 154.2, 148.9, 144.8, 135.5 (d, J=9.5), 127.6, 125.0 (d, J=4), 120.9, 117.8 (d, J=22.5), 116.4
3-(3-chloro-2-fluorophenyl)-5-(4-hydroxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	(1H NMR, CDCl3, 400 MHz) δ: 7.43 (1H, m), 7.40 (1H, m), 7.23 (2H, m, J=9), 7.15 (1H, dt, J=1.5 and 8), 6.86 (2H, m, J=9), 5.36 (1H, s) (13C NMR, CDCl3, 100 MHz) δ: 155.3, 154.2, 152.5 (d, J=257), 148.9, 144.9, 130.9, 125.2, 124.5 (d, J=5), 124.0 (d, J=12), 122.7 (d, J=16), 120.9, 116.4

In-vitro FAAH activity was determined accordingly to the following method:

Frozen brains (without cerebellum) from Wistar rats were used, and each brain was homogenized in 15 mL 1 mM $MgCl_2$, 20nM HEPES pH 7.0 with Potter Elvejhem (8 strokes at 500 rpm). Homogenates were centrifuged for 20 min at 36000*g* at 4°C (Beckman, 70Ti rotor). Pellets were resuspended in 15 mL of the same buffer and centrifuged under the same conditions. Pellets were resuspended in 15 mL of the same buffer and incubated for 15 min at 37°C after which they were centrifuged for 20 min at 36000*g* at 4°C. Each pellet was then resuspended in 15 mL 3 mM $MgCl_2$, 1 mM EDTA, 50 mM Tris pH 7.4 and protein determined with BioRad Protein Assay (BioRad) using a standard curve of BSA (50-250 µg/ml). The membrane suspensions were aliquoted and stored at -80°C.

The FAAH activity was determined using AEA (labelled with ^3H in the ethanolamine part of the molecule) as substrate and measuring the ^3H-ethanolamine formed. Reaction mix (total volume of 200 µl) contained: 2 µM AEA (2 µM AEA + 5 nM ^3H-AEA), 0.1 % fatty acid free BSA, 5 µg protein, in 1 mM EDTA, 10 mM Tris pH 7.6 and 10 µM or 100 mM

compounds. Stock solutions of the compounds to test (10mM) were prepared in 100 % DMSO and the DMSO concentration in the assay was 0.1 %. After a 15 min preincubation period at 37°C, reaction was started by the addition of the substrate solution (cold EAE + radiolabelled EAE + BSA). Reaction was carried out for 10 min before termination by the addition of 400 µl activated charcoal suspension (8 g charcoal in 32 mL 0.5 M HCl in continuous agitation). After a 30 min incubation period at room temperature with agitation, charcoal was sedimented by centrifugation in microfuge (10 min at 13000 rpm). 200 µl of the supernatant were added to 800 µl Optiphase Supermix scintillation cocktail previously distributed in 24-well plates. Counts per minute (cpm) were dertermined in Microbeta TriLux scintillation counter (10 min counting or until σ=2).

In each assay blanks (no protein, usually below 200 cpm) and controls (no compound) were present. The results are reported in Table 3 as % of control after blank subtraction.

Table 3

Compound	**FAAHi activity (% Control at dosage of 100nM)**
5-(benzyloxy)-3-(3-chlorophenyl)-1,3,4-oxadiazol-2(3H)-one	8.6
3-(4-bromophenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	24.81
3-(3'-methoxybiphenyl-4-yl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	11.63
5-(benzyloxy)-3-p-tolyl-1,3,4-oxadiazol-2(3H)-one	44.47
5-(benzyloxy)-3-(4-methoxyphenyl)-1,3,4-oxadiazol-2(3H)-one	12.67
5-(benzyloxy)-3-(2-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	3.52
5-(benzyloxy)-3-(4-cyanophenyl)-1,3,4-oxadiazol-2(3H)-one	19.3
3-(4-cyanophenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	95.63
5-(benzyloxy)-3-(2,5-dimethylphenyl)-1,3,4-oxadiazol-2(3H)-one	59.02
5-(benzyloxy)-3-(3-nitrophenyl)-1,3,4-oxadiazol-2(3H)-one	21.28
3-(3-nitrophenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	78.36

3-(4-methoxyphenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	18.49
5-(benzyloxy)-3-phenyl-1,3,4-oxadiazol-2(3H)-one	21.19
3-(4-hydroxyphenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	28.39
5-phenoxy-3-phenyl-1,3,4-oxadiazol-2(3H)-one	55.64
5-phenoxy-3-(4-(pyridin-3-yl)phenyl)-1,3,4-oxadiazol-2(3H)-one	12.2
3-(biphenyl-4-yl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	16.59
3-(3',4'-dimethoxybiphenyl-4-yl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	12.68
5-(benzyloxy)-3-(4-tert-butylphenyl)-1,3,4-oxadiazol-2(3H)-one	34.6
5-(benzyloxy)-3-(4-bromophenyl)-1,3,4-oxadiazol-2(3H)-one	8.01
3-(4-bromophenyl)-5-(4-nitrophenoxy)-1,3,4-oxadiazol-2(3H)-one	7.3
3-(3-chlorophenyl)-5-(4-nitrophenoxy)-1,3,4-oxadiazol-2(3H)-one	9.1
5-(4-chlorophenoxy)-3-phenyl-1,3,4-oxadiazol-2(3H)-one	30.9
3-(3-bromophenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	62.21
3-(biphenyl-3-yl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	32.01
5-phenoxy-3-(3-(pyridin-3-yl)phenyl)-1,3,4-oxadiazol-2(3H)-one	19.52
5-(4-methoxyphenoxy)-3-phenyl-1,3,4-oxadiazol-2(3H)-one	7.44
5-(benzyloxy)-3-(3-bromophenyl)-1,3,4-oxadiazol-2(3H)-one	8.67
5-(4-(benzyloxy)phenoxy)-3-phenyl-1,3,4-oxadiazol-2(3H)-one	18.24
3-(5'-methoxybiphenyl-3-yl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	27.58
5-(benzyloxy)-3-(biphenyl-3-yl)-1,3,4-oxadiazol-2(3H)-one	12.74
5-(benzyloxy)-3-(3'-methoxybiphenyl-3-yl)-1,3,4-oxadiazol-2(3H)-one	9.41
5-(4-chlorophenoxy)-3-(2-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	0.64
3-(4'-cyanobiphenyl-3-yl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	6.27
3-(2-fluorophenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	3.37

3-(3'-cyanobiphenyl-3-yl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	19.29
3-(4'-cyanobiphenyl-4-yl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	13.52
5-(4-chlorophenoxy)-3-(2,4-difluorophenyl)-1,3,4-oxadiazol-2(3H)-one	1.75
5-(benzyloxy)-3-(2,5-difluorophenyl)-1,3,4-oxadiazol-2(3H)-one	1.12
3-(2,5-difluorophenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	2.35
3-(2-fluorophenyl)-5-(4-methoxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	0.29
5-(benzyloxy)-3-(2,4-difluorophenyl)-1,3,4-oxadiazol-2(3H)-one	4.4
3-(2-fluorophenyl)-5-(4-nitrophenoxy)-1,3,4-oxadiazol-2(3H)-one	4.48
5-(4-chlorophenoxy)-3-(2,5-difluorophenyl)-1,3,4-oxadiazol-2(3H)-one	5.57
5-(4-chlorophenoxy)-3-(3',4'-dimethoxybiphenyl-3-yl)-1,3,4-oxadiazol-2(3H)-one	0.3
3-(3-bromophenyl)-5-(4-chlorophenoxy)-1,3,4-oxadiazol-2(3H)-one	11.11
3-(2,4-difluorophenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	3.08
3-(2,4-difluorophenyl)-5-(naphthalen-1-yloxy)-1,3,4-oxadiazol-2(3H)-one	4.77
5-(2-chlorophenoxy)-3-(2-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	1.82
3-(2,4-difluorophenyl)-5-(3-(trifluoromethyl)phenoxy)-1,3,4-oxadiazol-2(3H)-one	13.35
5-(4-bromophenoxy)-3-(2,5-difluorophenyl)-1,3,4-oxadiazol-2(3H)-one	10.87
3-(2,5-difluorophenyl)-5-(4-fluorophenoxy)-1,3,4-oxadiazol-2(3H)-one	1.85
5-(4-chlorophenoxy)-3-(2-methoxyphenyl)-1,3,4-oxadiazol-2(3H)-one	70.37
3-(2-chlorophenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	32.63
3-(4-bromophenyl)-5-(4-chlorophenoxy)-1,3,4-oxadiazol-2(3H)-one	11.34
5-(4-chlorophenoxy)-3-(4'-cyanobiphenyl-3-yl)-1,3,4-oxadiazol-2(3H)-one	6.26
5-(2,4-difluorophenoxy)-3-phenyl-1,3,4-oxadiazol-2(3H)-one	1.29
3-(3-chlorophenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one	8.98

5-(2,4-difluorophenoxy)-3-(4-methoxyphenyl)-1,3,4-oxadiazol-2(3H)-one	0.26
5-(4-chlorophenoxy)-3-(3',4'-dimethoxybiphenyl-4-yl)-1,3,4-oxadiazol-2(3H)-one	28.79
3-(5-bromo-2-fluorophenyl)-5-(4-methoxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	0.71
3-(4-fluoro-4',5'-dimethoxybiphenyl-3-yl)-5-(4-methoxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	0.54
3-(3-bromophenyl)-5-(4-methoxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	17.69
3-(4-bromophenyl)-5-(4-methoxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	8.28
3-(4-fluorophenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	23.33
5-(4-chlorophenoxy)-3-(4-fluoro-4',5'-dimethoxybiphenyl-3-yl)-1,3,4-oxadiazol-2(3H)-one	2.43
3-(2-fluoro-4-(pyridin-3-yl)phenyl)-5-(4-methoxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	0.73
3-(3-fluoro-4',5'-dimethoxybiphenyl-4-yl)-5-(4-methoxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	0.6
3-(3-fluoro-4'-cyanobiphenyl-4-yl)-5-(4-methoxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	2.23
3-(4-fluorophenyl)-5-(4-methoxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	2.57
3-(4-chloro-2-fluorophenyl)-5-(4-methoxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	1.07
5-(4-methoxyphenoxy)-3-(4-methoxyphenyl)-1,3,4-oxadiazol-2(3H)-one	1.19
5-(4-chlorophenoxy)-3-(4-methoxyphenyl)-1,3,4-oxadiazol-2(3H)-one	1.04
3-(4'-(dimethylamino)-3-fluorobiphenyl-4-yl)-5-(4-methoxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	5.55
5-(4-chlorophenoxy)-3-(4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	0.56
3-(4-bromophenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one	4.41
5-(4-bromo-2-methoxyphenoxy)-3-phenyl-1,3,4-oxadiazol-2(3H)-one	1.43

5-(3,5-dimethoxyphenoxy)-3-(2-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	5.99
5-(4-cyanophenoxy)-3-(2-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	1.88
3-(2-fluorophenyl)-5-(naphthalen-2-yloxy)-1,3,4-oxadiazol-2(3H)-one	3.03
3-phenyl-5-(pyridin-3-yloxy)-1,3,4-oxadiazol-2(3H)-one	46.52
3-(5-bromo-2-fluorophenyl)-5-(4-chlorophenoxy)-1,3,4-oxadiazol-2(3H)-one	11.63
5-(4-fluorophenoxy)-3-(4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	2.32
5-(3,4-dimethoxyphenoxy)-3-(2-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	14.12
5-(2,4-difluorophenoxy)-3-(4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	0.31
3-(2-fluoro-4-(methylsulfonyl)phenyl)-5-(4-methoxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	0.21
5-(4-fluorophenoxy)-3-(4-methoxyphenyl)-1,3,4-oxadiazol-2(3H)-one	2.08
5-(biphenyl-4-yloxy)-3-(2-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	1.03
3-(2-fluorophenyl)-5-(3,4,5-trimethoxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	69.17
3-(4-methoxyphenyl)-5-(3-(trifluoromethyl)phenoxy)-1,3,4-oxadiazol-2(3H)-one	3.49
3-(4-methoxyphenyl)-5-(p-tolyloxy)-1,3,4-oxadiazol-2(3H)-one	4.24
3-(4-hydroxyphenyl)-5-(p-tolyloxy)-1,3,4-oxadiazol-2(3H)-one	1.23
3-(3-chloro-2-fluorophenyl)-5-(4-methoxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	0.67
3-(4-hydroxyphenyl)-5-(3-(trifluoromethyl)phenoxy)-1,3,4-oxadiazol-2(3H)-one	1.07
5-(benzyloxy)-3-(3-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	12.15
3-(3-fluorophenyl)-5-(4-methoxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	10.52
5-(3,5-dihydroxyphenoxy)-3-(2-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	1.08
3-(4-methoxyphenyl)-5-(pyridin-3-yloxy)-1,3,4-oxadiazol-2(3H)-one	28.19

5-(2-chloro-4-hydroxyphenoxy)-3-(2-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	1.93
3-(5-chloro-2-fluorophenyl)-5-(4-methoxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	0.92
3-(4-hydroxyphenyl)-5-(4-nitrophenoxy)-1,3,4-oxadiazol-2(3H)-one	0.42
5-(2,4-dichlorophenoxy)-3-(4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	0.38
3-(2-fluorophenyl)-5-(3-hydroxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	11.39
3-(2-fluorophenyl)-5-(pyridin-3-yloxy)-1,3,4-oxadiazol-2(3H)-one	38.39
3-(2,4-difluorophenyl)-5-(pyridin-3-yloxy)-1,3,4-oxadiazol-2(3H)-one	48.57
3-(2-fluoro-4-(methylsulfonyl)phenyl)-5-(pyridin-3-yloxy)-1,3,4-oxadiazol-2(3H)-one	15.98
5-(2-bromopyridin-3-yloxy)-3-(4-methoxyphenyl)-1,3,4-oxadiazol-2(3H)-one	3.36
5-(cyclohexyloxy)-3-(2-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	2.58
3-(3-chloro-2-fluorophenyl)-5-(cyclohexyloxy)-1,3,4-oxadiazol-2(3H)-one	13.54
5-(cyclohexyloxy)-3-(4-methoxyphenyl)-1,3,4-oxadiazol-2(3H)-one	45.11
5-(cyclohexyloxy)-3-(3-fluoro-4',5'-dimethoxybiphenyl-4-yl)-1,3,4-oxadiazol-2(3H)-one	30.3
3-(3-hydroxyphenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	14.04
5-(cyclohexyloxy)-3-(3-fluoro-3'-(trifluoromethoxy)biphenyl-4-yl)-1,3,4-oxadiazol-2(3H)-one	35.39
5-(4-chlorophenoxy)-3-(3-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	1.21
5-(4-fluorophenoxy)-3-(3-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	2.95
3-(4-chloro-2-fluorophenyl)-5-phenethoxy-1,3,4-oxadiazol-2(3H)-one	10.49
3-(4-hydroxyphenyl)-5-phenethoxy-1,3,4-oxadiazol-2(3H)-one	24.03
3-(2-fluorophenyl)-5-isobutoxy-1,3,4-oxadiazol-2(3H)-one	11.63
3-(4-hydroxyphenyl)-5-(3-phenylpropoxy)-1,3,4-oxadiazol-2(3H)-one	21.68
3-(4-hydroxyphenyl)-5-(4-phenylbutoxy)-1,3,4-oxadiazol-2(3H)-one	5.49

3-(4-hydroxyphenyl)-5-(5-phenylpentyloxy)-1,3,4-oxadiazol-2(3H)-one	3.3
3-(4-hydroxyphenyl)-5-(6-phenylhexyloxy)-1,3,4-oxadiazol-2(3H)-one	13.56
3-(4-aminosulfonylphenyl)-5-(4-fluorophenoxy)-1,3,4-oxadiazol-2(3H)-one	5.16
3-(4-aminosulfonylphenyl)-5-(4-methoxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	8.32
3-(4-hydroxyphenyl)-5-(2-phenoxyethoxy)-1,3,4-oxadiazol-2(3H)-one	33.2
5-(2-chlorophenethoxy)-3-(4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	2.54
3-(4-aminosulfonylphenyl)-5-(4-chlorophenoxy)-1,3,4-oxadiazol-2(3H)-one	5.89
3-(4-aminosulfonylphenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	7.61
3-phenyl-5-(5-phenylpentyloxy)-1,3,4-oxadiazol-2(3H)-one	47.86
3-(2-fluorophenyl)-5-(4-phenylbutoxy)-1,3,4-oxadiazol-2(3H)-one	19.62
3-(4-aminosulfonylphenyl)-5-(5-phenylpentyloxy)-1,3,4-oxadiazol-2(3H)-one	0.09
3-(2-fluorophenyl)-5-(5-phenylpentyloxy)-1,3,4-oxadiazol-2(3H)-one	18.12
3-(2,4-difluorophenyl)-5-(5-phenylpentyloxy)-1,3,4-oxadiazol-2(3H)-one	43.31
5-(4-(3,4-dimethoxyphenyl)butoxy)-3-phenyl-1,3,4-oxadiazol-2(3H)-one	39.74
3-(2-chloro-5-fluorophenyl)-5-(5-phenylpentyloxy)-1,3,4-oxadiazol-2(3H)-one	9.94
5-(4-(3,4-dimethoxyphenyl)butoxy)-3-(2-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	3.85
5-(2-chlorophenethoxy)-3-(2-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	1.18
3-(2,4-difluorophenyl)-5-(4-(3,4-dimethoxyphenyl)butoxy)-1,3,4-oxadiazol-2(3H)-one	6.31
3-(4-chloro-2-fluorophenyl)-5-(4-(3,4-dimethoxyphenyl)butoxy)-1,3,4-oxadiazol-2(3H)-one	3.17
3-(3-chloro-2-fluorophenyl)-5-(4-(3,4-dimethoxyphenyl)butoxy)-1,3,4-oxadiazol-2(3H)-one	22.32

3-(4-aminocarbonylphenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	47.96
3-(4-aminosulfonylphenyl)-5-(4-(3,4-dimethoxyphenyl)butoxy)-1,3,4-oxadiazol-2(3H)-one	0.09
3-(2-fluorophenyl)-5-(4-(4-fluorophenyl)butoxy)-1,3,4-oxadiazol-2(3H)-one	12.7
3-(4-aminocarbonylphenyl)-5-(4-chlorophenoxy)-1,3,4-oxadiazol-2(3H)-one	9.62
3-(4-aminocarbonylphenyl)-5-(4-methoxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	18.41
3-(4-aminocarbonylphenyl)-5-(4-(4-fluorophenyl)butoxy)-1,3,4-oxadiazol-2(3H)-one	1.01
3-(4-aminocarbonylphenyl)-5-(5-(4-fluorophenyl)pentyloxy)-1,3,4-oxadiazol-2(3H)-one	0.07
3-(4-aminocarbonylphenyl)-5-(4-p-tolylbutoxy)-1,3,4-oxadiazol-2(3H)-one	0.06
3-(4-aminocarbonylphenyl)-5-(5-phenylpentyloxy)-1,3,4-oxadiazol-2(3H)-one	0.09
5-(biphenyl-4-yloxy)-3-(4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	0.97
5-(4-aminocarbonylphenoxy)-3-(2-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	14.5
5-(2-fluorophenoxy)-3-(4-methoxyphenyl)-1,3,4-oxadiazol-2(3H)-one	1.96
5-(3,4-difluorophenoxy)-3-(4-methoxyphenyl)-1,3,4-oxadiazol-2(3H)-one	0.37
5-(2-fluorophenoxy)-3-(4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	1.1
5-(3,4-difluorophenoxy)-3-(4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	0.46
3-(3-aminophenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	52.35
3-(3-aminophenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one	0.87
5-(2-(biphenyl-4-yl)ethoxy)-3-(4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	8.3
5-(2,4-difluorophenoxy)-3-(3,4-dimethoxyphenyl)-1,3,4-oxadiazol-2(3H)-one	1.18
5-(4-chlorophenoxy)-3-(3,4-dihydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	0.36

5-(2,4-difluorophenoxy)-3-(3,4-dihydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	0.1
5-(2,4-difluorophenoxy)-3-(3-methoxyphenyl)-1,3,4-oxadiazol-2(3H)-one	0.92
5-(3,4-dimethoxyphenoxy)-3-(4-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	13.95
5-(3,4-dihydroxyphenoxy)-3-(4-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	57.19
3-(3-fluorophenyl)-5-(4-hydroxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	46.83
5-(2,4-difluorophenoxy)-3-(3-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	0.22
5-(2-chlorophenoxy)-3-(3-methoxyphenyl)-1,3,4-oxadiazol-2(3H)-one	16.18
3-(4-chloro-2-fluorophenyl)-5-(4-hydroxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	8.06
3-(4-fluorophenyl)-5-(4-hydroxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	40.67
5-(3,5-difluorophenethoxy)-3-(4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	3.9
5-(2-chlorophenoxy)-3-(3-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	9.36
5-(4-chlorophenoxy)-3-(2'-hydroxybiphenyl-4-yl)-1,3,4-oxadiazol-2(3H)-one	2.77
3-(3-chloro-2-fluorophenyl)-5-(4-hydroxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	22.72
5-(4-chlorophenoxy)-3-(2'-methoxybiphenyl-4-yl)-1,3,4-oxadiazol-2(3H)-one	0.55
5-(3,4-dihydroxyphenoxy)-3-(2-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	36.2
5-(4-chlorophenoxy)-3-(3-fluoro-4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	1.05
5-(2,4-difluorophenoxy)-3-(2'-methoxybiphenyl-4-yl)-1,3,4-oxadiazol-2(3H)-one	1.86
5-(4-chlorophenoxy)-3-(2-fluoro-4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	0.01
5-(4-chlorophenoxy)-3-(2'-hydroxybiphenyl-3-yl)-1,3,4-oxadiazol-2(3H)-one	6.02
5-(2,4-difluorophenoxy)-3-(4-hydroxy-3-methylphenyl)-1,3,4-oxadiazol-2(3H)-one	0.09
5-(4-chlorophenoxy)-3-(4-hydroxy-3-methylphenyl)-1,3,4-oxadiazol-2(3H)-one	0.31

5-(2,4-difluorophenoxy)-3-(2'-hydroxybiphenyl-4-yl)-1,3,4-oxadiazol-2(3H)-one	1.48
5-(4-chlorophenoxy)-3-(2'-methoxybiphenyl-3-yl)-1,3,4-oxadiazol-2(3H)-one	4.91
5-(2,4-difluorophenoxy)-3-(4-hydroxy-3,5-dimethylphenyl)-1,3,4-oxadiazol-2(3H)-one	0.18
5-(4-chlorophenoxy)-3-(4-hydroxy-3,5-dimethylphenyl)-1,3,4-oxadiazol-2(3H)-one	0.51
5-(2,4-difluorophenoxy)-3-(4-(4-methoxybenzyloxy)phenyl)-1,3,4-oxadiazol-2(3H)-one	0.48
5-(2,4-difluorophenoxy)-3-(4-(3-methoxybenzyloxy)phenyl)-1,3,4-oxadiazol-2(3H)-one	0.2
5-(4-chlorophenoxy)-3-(3,5-dihydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	2.42
5-(2,4-difluorophenoxy)-3-(4-(2-methoxybenzyloxy)phenyl)-1,3,4-oxadiazol-2(3H)-one	0.27
3-(4-benzoyloxyphenyl)-5-(4-chlorophenoxy)-1,3,4-oxadiazol-2(3H)-one	8.13
3-(4-acetoxyphenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one	0.38
3-(4-benzoyloxyphenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one	0.79
3-(4-isobutyroyloxyphenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one	0.26
5-(2,4-difluorophenoxy)-3-(3-methoxy-4-nitrophenyl)-1,3,4-oxadiazol-2(3H)-one	52.39
5-(2,4-difluorophenoxy)-3-(3-hydroxy-4-nitrophenyl)-1,3,4-oxadiazol-2(3H)-one	51.6
5-(4-chlorophenoxy)-3-(3-hydroxy-4-nitrophenyl)-1,3,4-oxadiazol-2(3H)-one	56.4
5-(2,4-difluorophenoxy)-3-(7-hydroxynaphthalen-2-yl)-1,3,4-oxadiazol-2(3H)-one	5.45
3-(4-amino-3-hydroxyphenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one	13.6
3-(4-amino-3-methoxyphenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one hydrochloride	0.3
3-(4-amino-3-(2-methoxyethoxy)phenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one	0.5

3-(4-aminophenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one	0.04
3-(4-(1H-pyrrol-1-yl)phenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one	7.4
3-(4-aminophenyl)-5-(4-chlorophenoxy)-1,3,4-oxadiazol-2(3H)-one	0.51
3-(4-(1H-pyrrol-1-yl)phenyl)-5-(4-chlorophenoxy)-1,3,4-oxadiazol-2(3H)-one	9.33
3-(3-amino-4-methoxyphenyl)-5-(p-tolyloxy)-1,3,4-oxadiazol-2(3H)-one	37.03
3-(3-amino-4-methoxyphenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one	1.9
5-(2,4-difluorophenoxy)-3-(4-methoxy-3-(1H-pyrrol-1-yl)phenyl)-1,3,4-oxadiazol-2(3H)-one	0.35
3-(5-amino-2-fluoro-4-methoxyphenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one hydrochloride	0.35
5-(2,4-difluorophenoxy)-3-(2-fluoro-4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	0.04
3-(4-amino-3-methoxyphenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one	0.31

The in vivo FAAH inhibitory activity in tissues of animals administered with the compounds of the invention was determined accordingly to the following method:

Animal treatment

The animals used for experiments were male NMRI mice (weighing 27-44 g) obtained from Interfauna Ibérica (Spain). Mice were kept 5 per cage, under controlled environmental conditions (12 hr light/dark cycle and room temperature 22±1°C). Food and tap water were allowed *ad libitum* and the experiments were all carried out during daylight hours.

Animals were administered 30 mg/kg BIA compounds via oral route (8 mL/kg; compound suspended in 0.5 % carboxymethylcellulose (CMC) or solubilized in water) or 8ml/kg 0.5 % CMC (controls) using animal feeding stainless steel curve needles (Perfectum, U.S.A.). Fifteen minutes before sacrifice animal were anesthetized with pentobarbital 60 mg/kg administered intraperitoneally. A fragment of liver, left lung lobe and brain without cerebellum were removed and put in plastic vials containing membrane buffer

(3 mM $MgCl_2$, 1 mM EDTA, 50 mM Tris HCl pH 7.4). Tissues were stored at -30°C until analysis.

Animals were fasted overnight before administration of compounds except for time periods of >18h, where food was removed on the morning of the day of administration and the compound was administered in the afternoon of the same day. Animals were then given water but nothing else.

All animal procedures were conducted in the strict adherence to the European Directive for Protection of Vertebrate Animals Used for Experimental and Other Scientific Purposes (86/609CEE) and Portuguese legislation (Decreto-Lei 129/92, Portarias 1005/92 e 1131/97). The number of animals used was the minimum possible in compliance with current regulations and scientific integrity.

Reagents and Solutions

Anandamide [ethanolamine -1-^{3}H-] (40-60Ci/mmol) was obtained from American Radiochemicals. All other reagents were obtained from Sigma-Aldrich. Optiphase Supermix was obtained from Perkin Elmer and activated charcoal were obtained from Sigma-Aldrich.

Tissue Preparation

Tissues were thawed on ice and were homogenized in 10 volumes of membrane buffer (3 mM $MgCl_2$, 1 mM EDTA, 50 mM Tris HCl pH 7.4) with either Potter-Elvejhem (brains - 8 strokes at 500 rpm) or Heidolph Diax (livers - 2 strokes at position 5 for 20 sec with 30 sec pauses).

Total protein in tissues was determined with the BioRad Protein Assay (BioRad) using a standard curve of BSA (50-250 µg/ml).

Enzymatic assay

Reaction mix (total volume of 200 µl) contained: 2 µM AEA (2 µM AEA + 5 nM ^{3}H-AEA), 0.1 % fatty acid free BSA, 15 µg (brain), 5 µg (liver) or 50 µg (lung) protein, in 1 mM EDTA, 10 mM Tris pH 7.6. After a 15 min pre-incubation period at 37°C, reaction

was started by the addition of the substrate solution (cold AEA + radiolabelled AEA + BSA). Reaction was carried out for 10 min (brain and lung) or 7 min (liver) before termination by the addition of 400 µl activated charcoal suspension (8 g charcoal in 32 mL 0.5 M HCl in continuous agitation). After a 30 min incubation period at room temperature with agitation, charcoal was sedimented by centrifugation in microfuge (10 min at 13000 rpm). 200 µl of the supernatant were added to 800 µl Optiphase Supermix scintillation cocktail previously distributed in 24-well plates. Counts per minute (cpm) were determined in a MicrobetaTriLux scintillation counter.

In each assay blanks (without protein) were prepared.

The percentage of remaining enzymatic activity was calculated with respect to controls (no compound) and after blank subtraction.

The results are reported in Table 4:

Table 4

Compound	FAAHi activity (% control mouse liver (30mg kg 1h))	FAAHi activity (% control mouse brain (30mg kg 1h))
3-(3'-methoxybiphenyl-4-yl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	67.58	93.2
5-(benzyloxy)-3-(2-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	31.12	103.63
3-(3-nitrophenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	73.47	87.28
3-(4-hydroxyphenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	46.3	97.32
5-(benzyloxy)-3-(3-bromophenyl)-1,3,4-oxadiazol-2(3H)-one	70.43	96.92
5-(benzyloxy)-3-(biphenyl-3-yl)-1,3,4-oxadiazol-2(3H)-one	71.36	71.23
5-(4-chlorophenoxy)-3-(2-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	45.9	76.22

3-(2-fluorophenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	72.15	97
3-(2-fluorophenyl)-5-(4-methoxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	72.04	68.77
5-(benzyloxy)-3-(2,4-difluorophenyl)-1,3,4-oxadiazol-2(3H)-one	69.86	79.94
5-(4-chlorophenoxy)-3-(2,5-difluorophenyl)-1,3,4-oxadiazol-2(3H)-one	70.5	77.59
3-(2,4-difluorophenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	65.24	86.48
3-(2,4-difluorophenyl)-5-(naphthalen-1-yloxy)-1,3,4-oxadiazol-2(3H)-one	78.72	94.69
5-(2-chlorophenoxy)-3-(2-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	67.76	106.7
5-(2,4-difluorophenoxy)-3-phenyl-1,3,4-oxadiazol-2(3H)-one	39.07	93.97
5-(2,4-difluorophenoxy)-3-(4-methoxyphenyl)-1,3,4-oxadiazol-2(3H)-one	52.81	94.15
3-(4-chloro-2-fluorophenyl)-5-(4-methoxyphenoxy)-1,3,4-oxadiazol-2(3H)-one	75.9	90.87
5-(4-chlorophenoxy)-3-(4-methoxyphenyl)-1,3,4-oxadiazol-2(3H)-one	75.22	92.94
5-(4-chlorophenoxy)-3-(4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	19.56	37.69
5-(3,5-dimethoxyphenoxy)-3-(2-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	76.19	87.43
5-(4-cyanophenoxy)-3-(2-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	74.33	85.02
5-(4-fluorophenoxy)-3-(4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	30.89	81.63
5-(2,4-difluorophenoxy)-3-(4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	11.94	85.59
5-(biphenyl-4-yloxy)-3-(2-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	60.42	99.51
3-(4-hydroxyphenyl)-5-(3-(trifluoromethyl)phenoxy)-1,3,4-oxadiazol-2(3H)-one	69.9	95.5
5-(3,5-dihydroxyphenoxy)-3-(2-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	39.57	72.49
3-(4-hydroxyphenyl)-5-(4-nitrophenoxy)-1,3,4-oxadiazol-2(3H)-one	45	96.3
5-(2,4-dichlorophenoxy)-3-(4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	9.17	59.18
5-(cyclohexyloxy)-3-(2-fluorophenyl)-1,3,4-oxadiazol-2(3H)-one	56.98	77.59

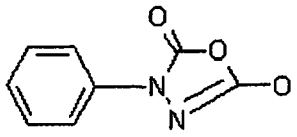
3-(3-hydroxyphenyl)-5-phenoxy-1,3,4-oxadiazol-2(3H)-one	33.01	94.66
5-(4-chlorophenoxy)-3-(3-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	10.26	100.2
5-(4-fluorophenoxy)-3-(3-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	24.27	99.06
3-(2-fluorophenyl)-5-isobutoxy-1,3,4-oxadiazol-2(3H)-one	26.55	83.52
3-(4-hydroxyphenyl)-5-(3-phenylpropoxy)-1,3,4-oxadiazol-2(3H)-one	38.45	85.58
3-(4-hydroxyphenyl)-5-(4-phenylbutoxy)-1,3,4-oxadiazol-2(3H)-one	65.84	95.66
3-(4-hydroxyphenyl)-5-(6-phenylhexyloxy)-1,3,4-oxadiazol-2(3H)-one	51.19	96.15
5-(2-chlorophenethoxy)-3-(4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	31.37	92.16
3-(4-aminosulfonylphenyl)-5-(5-phenylpentyloxy)-1,3,4-oxadiazol-2(3H)-one	45.73	74.76
3-(4-aminocarbonylphenyl)-5-(4-(4-fluorophenyl)butoxy)-1,3,4-oxadiazol-2(3H)-one	59.61	106.79
3-(4-aminocarbonylphenyl)-5-(5-(4-fluorophenyl)pentyloxy)-1,3,4-oxadiazol-2(3H)-one	71.77	105.07
3-(4-aminocarbonylphenyl)-5-(4-p-tolylbutoxy)-1,3,4-oxadiazol-2(3H)-one	30.46	68.63
3-(4-aminocarbonylphenyl)-5-(5-phenylpentyloxy)-1,3,4-oxadiazol-2(3H)-one	56.07	84.41
5-(biphenyl-4-yloxy)-3-(4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	17.29	62.46
5-(2-fluorophenoxy)-3-(4-methoxyphenyl)-1,3,4-oxadiazol-2(3H)-one	44.98	88.26
5-(3,4-difluorophenoxy)-3-(4-methoxyphenyl)-1,3,4-oxadiazol-2(3H)-one	49.6	85.72
5-(2-fluorophenoxy)-3-(4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	44.44	93.98
5-(3,4-difluorophenoxy)-3-(4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	17.28	58.22
3-(3-aminophenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one	21.63	82.92
5-(4-chlorophenoxy)-3-(3,4-dihydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	4.94	83.36

5-(2,4-difluorophenoxy)-3-(3,4-dihydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	3.56	65.78
5-(2,4-difluorophenoxy)-3-(3-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	11.85	93.77
5-(4-chlorophenoxy)-3-(3-fluoro-4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	49.56	86.55
5-(4-chlorophenoxy)-3-(2-fluoro-4-hydroxyphenyl)-1,3,4-oxadiazol-2(3H)-one	3.8	64.34
5-(2,4-difluorophenoxy)-3-(4-hydroxy-3-methylphenyl)-1,3,4-oxadiazol-2(3H)-one	10.23	48.25
5-(4-chlorophenoxy)-3-(4-hydroxy-3-methylphenyl)-1,3,4-oxadiazol-2(3H)-one	37.45	50.01
5-(2,4-difluorophenoxy)-3-(4-hydroxy-3,5-dimethylphenyl)-1,3,4-oxadiazol-2(3H)-one	7.58	67.44
5-(2,4-difluorophenoxy)-3-(4-(3-methoxybenzyloxy)phenyl)-1,3,4-oxadiazol-2(3H)-one	45.86	96.03
3-(4-benzoyloxyphenyl)-5-(4-chlorophenoxy)-1,3,4-oxadiazol-2(3H)-one	108.8	94.4
3-(4-acetoxyphenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one	73.67	96.55
3-(4-isobutyroyloxyphenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one	55.9	90.41
5-(2,4-difluorophenoxy)-3-(7-hydroxynaphthalen-2-yl)-1,3,4-oxadiazol-2(3H)-one	79.41	86.37
3-(4-amino-3-methoxyphenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one hydrochloride	4.19	9.61
3-(4-amino-3-(2-methoxyethoxy)phenyl)-5-(2,4-difluorophenoxy)-1,3,4-oxadiazol-2(3H)-one	4.99	6.76

As is evident from the above tests, the compounds of the invention, all of which are characterized by a 5-O-substituted 3-N-phenyl-1,3,4-oxadiazolone structural unit, have unexpectedly high inhibition of FAAH, making these novel compounds promising candidates for medicaments for the treatment or prevention of FAAH-related medical conditions. Furthermore, the surprisingly high FAAH inhibition is evident not only *in-vitro* but also *in-vivo*.

Furthermore, a comparison of the *in-vivo* data also demonstrates that the FAAH inhibitory activity of compounds having a 5-O-substituted 3-N-phenyl-1,3,4-oxadiazolone structural unit is characterized by a peripheral selectivity when compared with activity in the central nervous system (CNS).

The above data for a wide range of highly active compounds shows that the 5-O-substituted 3-N-phenyl-1,3,4-oxadiazolone structural unit of the following structure (III),



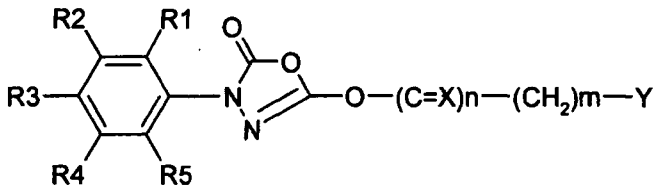
(III),

is a highly potent pharmacophore for FAAH inhibition and allows a high degree of variability with regard to the choice of the substituents present on this pharmacophore.

It will be appreciated that the invention may be modified within the scope of the appended claims.

CLAIMS

1. Compound of formula (I),



(I),

wherein

R^1 to R^5 independently from each other represent:

hydrogen;

C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy, wherein each is optionally substituted once or several times by

C_1-C_6-alkyl; C_1-C_6-alkoxy; C_6-C_{10}-aryloxy; CO_2H; SO_3H; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3;

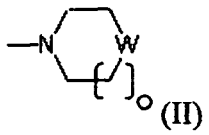
CO_2H;

SO_3H;

amino;

amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl;

a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

$CONH_2$;

SO_2NH_2;

$CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_6-alkyl and wherein in the case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings;

thiol;

hydroxyl;

nitro;

cyano;

fluorosulfonyl;

halogen selected from fluoro, chloro, bromo or iodo;

CF_3;

OCF_3; or

a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by

C_1-C_6-alkyl; C_1-C_6-alkoxy; COOH; SO_3H; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in

case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3;

and wherein any two or more of R^1 to R^5 may be combined to form anellated saturated, unsaturated or aromatic homo- or hetero-ring systems;

n represents 0 or 1; m represents 0, 1, 2, 3, 4, 5 or 6;

X represents O or S;

Y represents:

a) hydrogen;

b) C_1-C_{18}-alkyl, mono or polyunsaturated C_2-C_{18}-alkylene, C_3-C_8-cycloalkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy, or a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, wherein each is optionally substituted once or several times by:

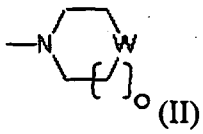
b1) C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl,

C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy; wherein each is optionally substituted once or several times by C_1-C_6-alkyl; C_1-C_6-alkoxy; $CONH_2$, SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with C_1-C_6-alkyl; SO_3H; CO_2H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; or OCF_3;

wherein several of the substituents in b1) may be combined to form anellated saturated, unsaturated or aromatic homo- or hetero-ring systems;

or by

b2) hydroxy; thiol; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; CO_2H; SO_3H; OCF_3; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_6-alkyl and wherein in the case of a di-C_1-C_6-alkyl-substituted amino functionality, the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; or a disubstituted amino of the following formula (II)


(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

or by

b3) a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by C_1-C_6-alkyl; C_1-C_6-alkoxy; COOH; SO_3H; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or

C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3;

c) SO_3H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_6-alkyl and wherein in the case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; thiol; hydroxyl; nitro; cyano; fluorosulfonyl; halogen selected from fluoro, chloro, bromo or iodo; CF_3; or OCF_3;

or a stereoisomer, pharmaceutically acceptable salt or ester, or prodrug thereof for inhibition of fatty acide amide hydrolyse (FAAH).

2. Compound according to claim 1 wherein R^1 to R^5 independently from each other represent

hydrogen;

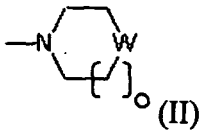
hydroxyl;

C_1-C_6-alkyl, C_6-C_{10}-aryl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_6-alkoxy, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, wherein each is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, hydroxy, fluoro, chloro, bromo, cyano, CF_3 or OCF_3;

amino;

amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl;

1-pyrrolyl, 2-pyrrolyl or 3-pyrrolyl, optionally substituted with one or more residues selected from C_1-C_6-alkyl, amino, fluoro, chloro or CF_3; or a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

$CONH_2$;

SO_2NH_2;

$CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with residues selected from C_1-C_6-alkyl or C_6-C_{10}-aryl;

fluoro;

chloro;

bromo;

CF_3; or

OCF_3.

3. Compound according to claim 1 or 2 wherein one or more of R^1 to R^5 represent hydrogen, fluorine or chlorine.

4. Compound according to claim 3 wherein R^1 or R^5 represents hydrogen or fluorine.

5. Compound according to any one of claims 1 to 4 wherein one or more of R^1 to R^5 represent:

hydroxy; or

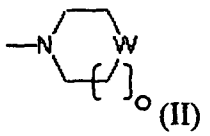
C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_6-alkoxy, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, wherein each is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, $CONH_2$ or SO_2NH_2 optionally substituted once or twice with C_1-C_6-alkyl or C_6-C_{10}-aryl, hydroxy, fluoro, chloro, bromo, cyano, CF_3 or OCF_3.

6. Compound according to claim 5 wherein one of R^2, R^3 or R^4 represents:

hydroxy; or

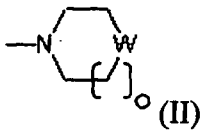
C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, or C_6-C_{10}-aryl-C_1-C_6-alkoxy, each of which is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, $CONH_2$ or SO_2NH_2 optionally substituted once or twice with C_1-C_6-alkyl or C_6-C_{10}-aryl, hydroxy, fluoro, chloro, or bromo.

7. Compound according to any one of claims 1 to 6 wherein one or more of R^1 to R^5 represent:
amino;
amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl; or
a disubstituted amino of the following formula (II)


(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro.

8. Compound according to claim 7 wherein one of R^2, R^3 or R^4 represents:
amino;
amino substituted once or twice with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl; or
a disubstituted amino of the following formula (II)


(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro.

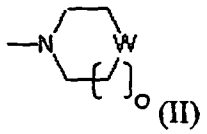
9. Compound according to any one of claims 1 to 8 wherein n represents 0; m represents 0, 1, 2, 3, 4, 5 or 6; and Y represents C_3-C_6-cycloalkyl or C_6-C_{10}-aryl, each of which is optionally substituted once or several times by:

a) C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_4-alkoxy, wherein each is optionally substituted once or several times by:

C_1-C_6-alkyl; C_1-C_6-alkoxy; COOH; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 substituted once or twice with C_1-C_6-alkyl or C_6-C_{10}-aryl; SO_3H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3;

or by

b) hydroxy; thiol; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; OCF_3; CO_2H; SO_3H; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted once or several times with C_1-C_6-alkyl or phenyl; a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_4-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_4-alkyl, fluoro or chloro;

or by

c) a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by

C_1-C_6-alkyl; C_1-C_6-alkoxy; COOH; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 substituted once or twice with C_1-C_6-alkyl or C_6-C_{10}-aryl; SO_3H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3.

10. Compound according to claim 9 wherein n represents 0; m represents 0 or 1; and Y represents a phenyl, 1-naphthyl, 2-naphthyl, 2-pyridinyl, 3-pyridinyl, or 4-pyridinyl ring system.

11. Compound according to claim 10 wherein Y is substituted once or several times by C_1-C_6-alkyl; phenyl; C_1-C_6-alkoxy; hydroxy; fluoro; chloro; bromo; CF_3; OCF_3; amino; or $CONH_2$ or SO_2NH_2 optionally substituted once or twice with C_1-C_6-alkyl wherein these optional C_1-C_6-alkyl residues may be combined to form 5 or 6-membered rings.

12. Compound according to claim 11 wherein m represents 0 and Y represents phenyl which is substituted once or twice by hydroxy, fluoro, chloro or bromo.

13. Compound according to claim 11 wherein m represents 0 and Y represents phenyl which is substituted in the 4-position by fluoro or by chloro, in the 2- and 4-position by fluoro, in the 2- and 4-position by chloro, or in the 4-position by phenyl.

14. Compound according to claim 1 wherein m is 0; n is 0; Y represents phenyl substituted once or twice by fluoro, chloro or bromo; and any one of R^2 to R^4 represents OR^7 wherein R^7 is selected from hydrogen and C_1-C_6-alkyl.

15. Compound according to claim 14 wherein Y represents phenyl which is substituted in the 4-position by fluoro or by chloro, in the 2- and 4-position by fluoro, or in the 2- and 4-position by chloro.

16. Compound according to claim 14 or 15 wherein R^1 or R^5 represents hydrogen or fluorine.

17. Compound according to any one of claims 14 to 16 wherein R^2 or R^3 and R^4 represent hydroxy.

18. Compound as claimed in any of claims 1 to 17 for treatment of a disorder that is positively influenced by inhibition of FAAH.

19. Compound as claimed in claim 18 wherein the disorder is selected from pain, dizziness, vomiting, and nausea, eating disorders, neurological and psychiatric pathologies, acute and chronic neurodegenerative diseases, epilepsy, sleep disorders, cardiovascular diseases, cancers, disorders of the immune system, parasitic, viral or bacterial infectious diseases, inflammatory diseases, osteoporosis, eye conditions, pulmonary conditions and gastrointestinal diseases.

20. Use of a compound as claimed in any of claims 1 to 17 for inhibition of FAAH.

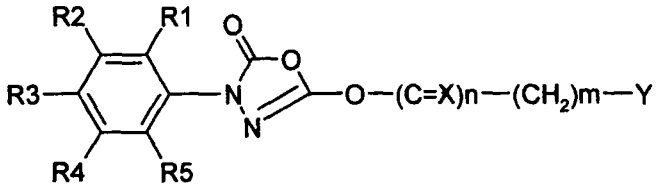
21. Use of a compound as claimed in any of claims 1 to 17 for treatment of a disorder that is positively influenced by inhibition of FAAH.

22. Use of a compound as claimed in any of claims 1 to 17 for manufacture of a medicament for the treatment of a disorder that is positively influenced by inhibition of FAAH.

23. Use as claimed in claim 21 or 22 wherein the disorder is selected from pain, dizziness, vomiting, and nausea, eating disorders, neurological and psychiatric pathologies, acute and chronic neurodegenerative diseases, epilepsy, sleep disorders, cardiovascular diseases, cancers, disorders of the immune system, parasitic, viral or bacterial infectious

diseases, inflammatory diseases, osteoporosis, eye conditions, pulmonary conditions and gastrointestinal diseases.

24. Compound of formula (I),



(I),

wherein

R^1 to R^5 independently from each other represent:

hydrogen;

C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy, wherein each is optionally substituted once or several times by

C_1-C_6-alkyl; C_1-C_6-alkoxy; C_6-C_{10}-aryloxy; CO_2H; SO_3H; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3;

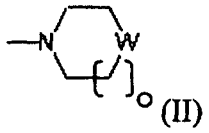
CO_2H;

SO_3H;

amino;

amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl;

a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

$CONH_2$;

SO_2NH_2;

$CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_6-alkyl and wherein in the case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings;

thiol;

hydroxyl;

nitro;

cyano;

fluorosulfonyl;

halogen selected from fluoro, chloro, bromo or iodo;

CF_3;

OCF_3; or

a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by

C_1-C_6-alkyl; C_1-C_6-alkoxy; COOH; SO_3H;, $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in

case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3;

and wherein any two or more of R^1 to R^5 may be combined to form anellated saturated, unsaturated or aromatic homo- or hetero-ring systems;

n represents 0 or 1; m represents 0, 1, 2, 3, 4, 5 or 6;

X represents O or S;

Y represents:

a) hydrogen;

b) C_1-C_{18}-alkyl, mono or polyunsaturated C_2-C_{18}-alkylene, C_3-C_8-cycloalkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy, or a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, wherein each is optionally substituted once or several times by:

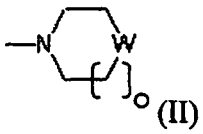
b1) C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl,

C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy; wherein each is optionally substituted once or several times by C_1-C_6-alkyl; C_1-C_6-alkoxy; $CONH_2$, SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with C_1-C_6-alkyl; SO_3H; CO_2H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; or OCF_3;

wherein several of the substituents in b1) may be combined to form anellated saturated, unsaturated or aromatic homo- or hetero-ring systems;

or by

b2) hydroxy; thiol; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; CO_2H; SO_3H; OCF_3; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_6-alkyl and wherein in the case of a di-C_1-C_6-alkyl-substituted amino functionality, the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; or a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

or by

b3) a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by C_1-C_6-alkyl; C_1-C_6-alkoxy; COOH; SO_3H;, $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or

C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3;

c) SO_3H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_6-alkyl and wherein in the case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; thiol; hydroxyl; nitro; cyano; fluorosulfonyl; halogen selected from fluoro, chloro, bromo or iodo; CF_3; or OCF_3;

with the proviso that in case n represents 0 and m represents 0:

a) R^2 or R^4 do not represent the substituent C(=A)-N(B)-SO_2-NR^6R^7, wherein A represents O or S, B represents hydrogen, cyano, C_1-C_6-alkyl, C_1-C_6-alkoxy-alkyl, C_3-C_7-cycloalkyl, C_3-C_6-alkenyl, C_3-C_6-alkynyl or optionally substituted benzyl derivatives, and R^6 and R^7 independently from each other represent hydrogen or an organic residue, or together an organic cyclic structure; that

b) R^1 to R^5 independently from each other do not represent hydrogen, fluoro, bromo, chloro, iodo or an alkyl radical when Y represents unsubstituted phenyl; that

c) R^2 or R^4 do not represent a pyrazol-3-yl-derivative; and that

d) the phenyl ring substituted with R^1 to R^5 and Y do not represent the following combinations:

phenyl ring substituted with R^1 to R^5	Y
2-chlorophenyl	4-chlorophenyl
2,3-dimethylphenyl	4-chlorophenyl
2,4-dichlorophenyl	4-chlorophenyl
2-chloro-3-methylphenyl	4-chlorophenyl
2,5-difluorophenyl	4-methylphenyl
2-methoxy-4-chlorophenyl	4-chlorophenyl
2-chlorophenyl	4-methylphenyl
2,6-dichlorophenyl	4-chlorophenyl
2-(trifluoromethylmercaptyl)phenyl	phenyl
2,3,4-trimethylphenyl	4-chlorophenyl
2,5-difluorophenyl	4-bromophenyl
2,4-dimethylphenyl	4-chlorophenyl
4-chlorophenyl	4-chlorophenyl
3-chlorophenyl	4-chlorophenyl
4-bromophenyl	4-chlorophenyl
2-chlorophenyl	4-bromophenyl
2,5-difluorophenyl	4-chlorophenyl
4-chlorophenyl	4-bromophenyl
3,5-dimethylphenyl	4-chlorophenyl
4-trifluormethoxyphenyl	4-octylphenyl
4-trifluormethoxyphenyl	3-phenoxyphenyl
2,3-dihydro-2,2-dimethyl-7-benzofuranyl	phenyl

and with the further proviso that in case n represents 0 and m represents 1 that Y does not represent unsubstituted phenyl if R^1, R^2 and R^5 represent hydrogen, R^4 represents hydrogen, trifluoromethoxy, trifluorobutoxy, 3,3,5,5-tetramethylcyclohexyloxy, benzyloxy, phenoxy, phenyl, 2-dimethylaminoethyloxy or 3-methylphenoxy-methyl and R^3 represents hydrogen, trifluoromethoxy, trifluorobutoxy, 3,3,5,5-tetramethylcyclohexyloxy, phenoxy, 4-chlorophenoxy, cyclohexyl, phenyl, morpholinosulfonyl, 3,3,5-trimethylcyclohexylaminosulfonyl,

2,2,6,6-tetramethylpiperidin-4-ylaminosulfonyl, 2-(diisopropylaminoethyl)aminosulfonyl, 4-methylpiperazin-1-yl-sulfonyl, 3,3-dimethylpiperidinocarbonyl or 3,5-dichlorophenoxy 2-dimethylaminoethyloxy or 3-methylphenoxy-methyl;

and with the further proviso that in case m=0 and n=0 Y does not represent C_1-C_4-alkyl;

and with the further proviso that the compound is not one of the following compounds:

5-phenoxy-3-phenyl-(1,3,4)-oxadiazolin-2-one
5-Dodecyloxy-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one
5-Hexadecyloxy-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one
5-Octyloxy-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one
5-Hexadecyloxy-3- (3-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one
5-Hexadecyloxy-3-(4-(4-chlorphenoxy)-phenyl)-3H-(1,3,4)-oxadiazol-2-one
5-Octyloxy-3-phenyl-3H- (1,3,4)-oxadiazol-2-one
5-Octyloxy-3- (3-fluor-phenyl)-3H- (1,3,4)-oxadiazol-2-one
5-Hexadecyloxy-3- (3-fluor-phenyl)-3H- (1,3,4)-oxadiazol-2-one
5-Hexadecyloxy-3- (3-benzyloxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one
5-Hexadecyloxy-3-phenyl-3H- (1,3,4)-oxadiazol-2-one
5-Hexadecyloxy-3- (4-nitro-phenyl)-3H- (1,3,4)-oxadiazol-2-one
5-Hexadecyloxy-3- (4-methoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one
5-Hexadecyloxy-3- (4-benzyloxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one
5-Decyloxy-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one
5-Undecyloxy-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one
5-Tetradecyloxy-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one
5-Tridecyloxy-3-(4-trifluoromethoxy-phenyl)-3H-(1,3,4)-oxadiazol-2-one
5- (2- (2-Hexyloxy-ethoxy)-ethoxy)-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2- one
5- ((Z)-Octadec-9-enyloxy)-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one 5-(Dodecyloxy-ethoxy)-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one
5- (2- (4-Fluorphenyl)-ethoxy)-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one
5-((3ss-Cholestan-3-yl)-oxy)--3-(4-trifluoromethoxy-phenyl)-3H-(1,3,4)-oxadiazol-2-one
5-(2-Butoxy-ethoxy)-3-(4-trifluormethoxy-phenyl)-3H-(1,3,4)-oxadiazol-2-one

5- (7-Phenyl-heptyloxy)-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one ,

5- (Docosyloxy-ethoxy)-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one

5- (2- (1-Naphthloxy)-ethoxy)-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one

5-(4-Octylphenoxy)-3-(4-trifluormethoxy-phenyl)-3H-(1,3,4)-oxadiazol-2-one

5- (3-Phenoxy-phenoxy)-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one

5- (Dodecyloxy)-3- (4-trifluormethoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one

5- (Dodecyloxy)-3- (3, 4-dichlor-phenyl)-3H- (1,3,4)-oxadiazol-2-one

5- (Dodecyloxy)-3- (3, 5-dichlor-phenyl)-3H- (1,3,4)-oxadiazol-2-one

5- (Dodecyloxy)-3- (3-methoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one

5- (Dodecyloxy)-3- (4-methoxy-phenyl)-3H- (1,3,4)-oxadiazol-2-one;

or a stereoisomer, pharmaceutically acceptable salt or ester, or prodrug thereof.

25. Compound according to claim 24 wherein R^1 to R^5 independently from each other represent

hydrogen;

hydroxyl;

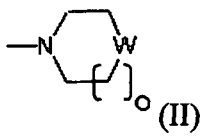
C_1-C_6-alkyl, C_6-C_{10}-aryl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_6-alkoxy, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, wherein each is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, hydroxy, fluoro, chloro, bromo, cyano, CF_3 or OCF_3;

amino;

amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl;

1-pyrrolyl, 2-pyrrolyl or 3-pyrrolyl, optionally substituted with one or more residues selected from C_1-C_6-alkyl, amino, fluoro, chloro or CF_3,

a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

$CONH_2$;

SO_2NH_2;

$CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with residues selected from C_1-C_6-alkyl or C_6-C_{10}-aryl;

fluoro;

chloro;

bromo;

CF_3; or

OCF_3.

26. Compound according to claim 24 or 25 wherein one or more of R^1 to R^5 represent hydrogen, fluorine or chlorine.

27. Compound according to claim 26 wherein R^1 or R^5 represents hydrogen or fluorine.

28. Compound according to any one of claims 24 to 27 wherein one or more of R^1 to R^5 represent:

hydroxy; or

C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_6-alkoxy, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, wherein each is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, $CONH_2$ or SO_2NH_2 optionally substituted once or twice with C_1-C_6-alkyl or C_6-C_{10}-aryl, hydroxy, fluoro, chloro, bromo, cyano, CF_3 or OCF_3.

29. Compound according to claim 28 wherein one of R^2, R^3 or R^4 represents:

hydroxy; or

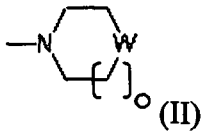
C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, or C_6-C_{10}-aryl-C_1-C_6-alkoxy, each of which is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, $CONH_2$ or SO_2NH_2 optionally substituted once or twice with C_1-C_6-alkyl or C_6-C_{10}-aryl, hydroxy, fluoro, chloro, or bromo.

30. Compound according to any one of claims 24 to 29 wherein one or more of R^1 to R^5 represent:

amino;

amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl; or

a disubstituted amino of the following formula (II)



(II)

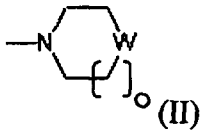
wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro.

31. Compound according to claim 30 wherein one of R^2, R^3 or R^4 represents:

amino;

amino substituted once or twice with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl; or

a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro.

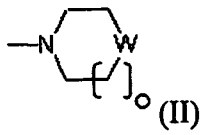
32. Compound according to any one of claims 24 to 31 wherein n represents 0; m represents 0, 1, 2, 3, 4, 5 or 6; and Y represents C_3-C_6-cycloalkyl or C_6-C_{10}-aryl, each of which is optionally substituted once or several times by:

a) C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_4-alkoxy, wherein each is optionally substituted once or several times by;

C_1-C_6-alkyl; C_1-C_6-alkoxy; COOH; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 substituted once or twice with C_1-C_6-alkyl or C_6-C_{10}-aryl; SO_3H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3;

or by

b) hydroxy; thiol; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; OCF_3; CO_2H; SO_3H; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted once or several times with C_1-C_6-alkyl or phenyl; a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_4-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_4-alkyl, fluoro or chloro;

or by

c) a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by

C_1-C_6-alkyl; C_1-C_6-alkoxy; COOH; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 substituted once or twice with C_1-C_6-alkyl or C_6-C_{10}-aryl; SO_3H; amino; amino substituted one or more times with residues selected from

C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3.

33. Compound according to claim 32 wherein n represents 0; m represents 0 or 1; and Y represents a phenyl, 1-naphthyl, 2-naphthyl, 2-pyridinyl, 3-pyridinyl or 4-pyridinyl ring system.

34. Compound according to claim 33 wherein Y is substituted once or several times by C_1-C_6-alkyl; phenyl; C_1-C_6-alkoxy; hydroxy; fluoro; chloro; bromo; CF_3; OCF_3; amino; or $CONH_2$ or SO_2NH_2 optionally substituted once or twice with C_1-C_6-alkyl wherein these optional C_1-C_6-alkyl residues may be combined to form 5 or 6-membered rings.

35. Compound according to claim 34 wherein m represents 0 and Y represents phenyl which is substituted once or twice by hydroxy, fluoro, chloro or bromo.

36. Compound according to claim 34 wherein m represents 0 and Y represents phenyl which is substituted in the 4-position by fluoro or by chloro, in the 2- and 4-position by fluoro, in the 2- and 4-position by chloro, or in the 4-position by phenyl.

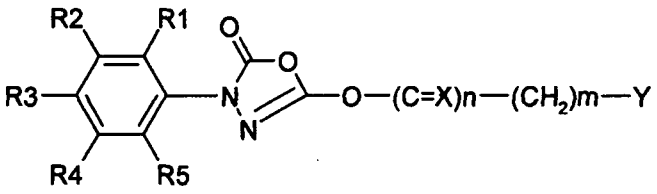
37. Compound according to claim 24 wherein m is 0; n is 0; Y represents phenyl substituted once or twice by fluoro, chloro or bromo; and any one of R^2 to R^4 represents OR^7 wherein R^7 is selected from hydrogen and C_1-C_6-alkyl.

38. Compound according to claim 37 wherein Y represents phenyl which is substituted in the 4-position by fluoro or by chloro, in the 2- and 4-position by fluoro, or in the 2- and 4-position by chloro.

39. Compound according to claim 37 or 38 wherein R^1 or R^5 represents hydrogen or fluorine.

40. Compound according to any one of claims 37 to 39 wherein R^2 or R^3 and R^4 represent hydroxy.

41. Compound of formula (I),



(I),

wherein

R^1 to R^5 independently from each other represent:

hydrogen;

C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy, wherein each is optionally substituted once or several times by

C_1-C_6-alkyl; C_1-C_6-alkoxy; C_6-C_{10}-aryloxy; CO_2H; SO_3H; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3;

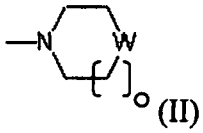
CO_2H;

SO_3H;

amino;

amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl;

a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

$CONH_2$;

SO_2NH_2;

$CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_6-alkyl and wherein in the case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings;

thiol;

hydroxyl;

nitro;

cyano;

fluorosulfonyl;

halogen selected from fluoro, chloro, bromo or iodo;

CF_3;

OCF_3; or

a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by

C_1-C_6-alkyl; C_1-C_6-alkoxy; COOH; SO_3H;, $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted one or more

times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3;

and wherein any two or more of R^1 to R^5 may be combined to form anellated saturated, unsaturated or aromatic homo- or hetero-ring systems;

n represents 0; m represents 0;

Y represents phenyl which is optionally substituted once or several times by

a) C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy;

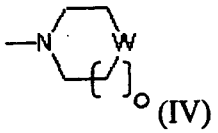
each of which is optionally substituted once or several times by C_1-C_6-alkyl; C_1-C_6-alkoxy; $CONH_2$ or SO_2NH_2, optionally substituted once or twice with C_1-C_6-alkyl; SO_3H; CO_2H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3;

wherein several of these optional substituents may be combined to form anellated saturated, unsaturated or aromatic homo- or hetero-ring systems; or

b) a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by C_1-C_6-alkyl; C_1-C_6-alkoxy; COOH; $CONH_2$ or SO_2NH_2, optionally substituted once or twice with C_1-C_6-alkyl; SO_3H; amino; amino

substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3; or

c) hydroxy; thiol; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; OCF_3; CO_2H; SO_3H; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; a disubstituted amino of the following formula (IV)



(IV)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_4-alkyl and wherein the methylene groups in formula (IV) may optionally be substituted once or twice with C_1-C_4-alkyl, fluoro or chloro;

or a stereoisomer, pharmaceutically acceptable salt or ester, or prodrug thereof
with the proviso that

a) R^2 or R^4 do not represent the substituent $C(=A)$-$N(B)$-SO_2-NR^6R^7, wherein A represents O or S, B represents hydrogen, cyano, C_1-C_6-alkyl, C_1-C_6-alkoxy-alkyl, C_3-C_7-cycloalkyl, C_3-C_6-alkenyl, C_3-C_6-alkynyl or optionally substituted benzyl derivatives, and R^6 and R^7 independently from each other represent hydrogen or an organic residue, or together an organic cyclic structure; that

b) R^1 to R^5 independently from each other do not represent hydrogen, fluoro, bromo, chloro, iodo or an alkyl radical when Y represents unsubstituted phenyl; that

c) R^2 or R^4 do not represent a pyrazol-3-yl-derivative; and that

d) the phenyl ring substituted with R^1 to R^5 and Y do not represent the following combinations:

phenyl ring substituted with R^1 to R^5	Y
2-chlorophenyl	4-chlorophenyl
2,3-dimethylphenyl	4-chlorophenyl
2,4-dichlorophenyl	4-chlorophenyl
2-chloro-3-methylphenyl	4-chlorophenyl
2,5-difluorophenyl	4-methylphenyl
2-methoxy-4-chlorophenyl	4-chlorophenyl
2-chlorophenyl	4-methylphenyl
2,6-dichlorophenyl	4-chlorophenyl
2-(trifluoromethylmercaptyl)phenyl	phenyl
2,3,4-trimethylphenyl	4-chlorophenyl
2,5-difluorophenyl	4-bromophenyl
2,4-dimethylphenyl	4-chlorophenyl
4-chlorophenyl	4-chlorophenyl
3-chlorophenyl	4-chlorophenyl
4-bromophenyl	4-chlorophenyl
2-chlorophenyl	4-bromophenyl
2,5-difluorophenyl	4-chlorophenyl
4-chlorophenyl	4-bromophenyl
3,5-dimethylphenyl	4-chlorophenyl
4-trifluormethoxyphenyl	4-octylphenyl
4-trifluormethoxyphenyl	3-phenoxyphenyl
2,3-dihydro-2,2-dimethyl-7-benzofuranyl	phenyl

42. Compound according to claim 41 wherein R^1 to R^5 independently from each other represent:

hydrogen;

hydroxyl;

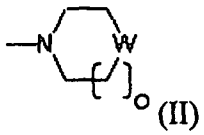
C_1-C_6-alkyl, C_6-C_{10}-aryl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_6-alkoxy, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, wherein each is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, hydroxy, fluoro, chloro, bromo, cyano, CF_3 or OCF_3;

amino;

amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl;

1-pyrrolyl, 2-pyrrolyl or 3-pyrrolyl, optionally substituted with one or more residues selected from C_1-C_6-alkyl, amino, fluoro, chloro or CF_3,

a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

$CONH_2$;

SO_2NH_2;

$CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with residues selected from C_1-C_6-alkyl or C_6-C_{10}-aryl;

fluoro;

chloro;

bromo;

CF_3; or

OCF_3.

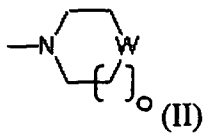
43. Compound according to claim 41 or 42 wherein one or more of R^1 to R^5 represent hydrogen, fluorine or chlorine.

44. Compound according to claim 43 wherein R^1 or R^5 represents hydrogen or fluorine.

45. Compound according to any one of claims 41 to 44 wherein one or more of R^1 to R^5 represent:
hydroxy; or
C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_6-alkoxy, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, wherein each is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, $CONH_2$ or SO_2NH_2 optionally substituted once or twice with C_1-C_6-alkyl or C_6-C_{10}-aryl, hydroxy, fluoro, chloro, bromo, cyano, CF_3 or OCF_3.

46. Compound according to claim 45 wherein one of R^2, R^3 or R^4 represents hydroxy; or C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, or C_6-C_{10}-aryl-C_1-C_6-alkoxy, each of which is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, $CONH_2$ or SO_2NH_2 optionally substituted once or twice with C_1-C_6-alkyl or C_6-C_{10}-aryl, hydroxy, fluoro, chloro, or bromo.

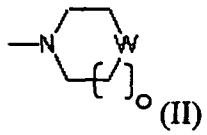
47. Compound according to any one of claims 41 to 46 wherein one or more of R^1 to R^5 represent amino;
amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl; or
a disubstituted amino of the following formula (II)


(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro.

48. Compound according to claim 47 wherein one of R^2, R^3 or R^4 represents amino;
amino substituted once or twice with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl; or

a disubstituted amino of the following formula (II)



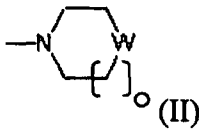
wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro.

49. Compound according to any one of claims 41 to 48 wherein Y representing phenyl is substituted once or several times by:

a) C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_6-alkoxy, wherein each is optionally substituted once or several times by: C_1-C_6-alkyl; C_1-C_6-alkoxy; SO_3H; CO_2H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; $CONH_2$; SO_2NH_2; OCF_3; or $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with C_1-C_6-alkyl;

or by

b) hydroxy; thiol; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; OCF_3; CO_2H; SO_3H; $CONH_2$; SO_2NH_2; or $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, wherein in the case of a di-C_1-C_6-alkyl substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted once or several times with C_1-C_6-alkyl or phenyl; a disubstituted amino of the following formula (II)



wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

or by

c) a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by C_1-C_6-alkyl; C_1-C_6-alkoxy; COOH; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with C_1-C_6-alkyl which may be combined to form 5 or 6-membered rings; SO_3H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; or OCF_3.

50. Compound according to claim 49 wherein Y is phenyl substituted once or several times by C_1-C_6-alkyl; phenyl; C_1-C_6-alkoxy; hydroxy; fluoro; chloro; bromo; CF_3; OCF_3; amino; or $CONH_2$ optionally substituted once or twice with C_1-C_6-alkyl, wherein these optional C_1-C_6-alkyl residues may be combined to form 5 or 6-membered rings.

51. Compound according to claim 50 wherein Y is phenyl substituted once or twice by hydroxy, fluoro, chloro or bromo.

52. Compound according to claim 50 wherein Y is phenyl substituted in the 4-position by fluoro or by chloro, in the 2- and 4-position by fluoro, in the 2- and 4-position by chloro, or in the 4-position by phenyl.

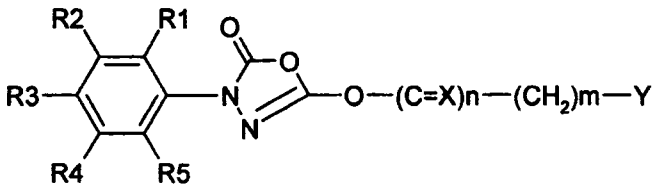
53. Compound according to claim 41 wherein Y is phenyl substituted once or twice by fluoro, chloro or bromo; and any one of R^2 to R^4 represents OR^7 wherein R^7 is selected from hydrogen and C_1-C_6-alkyl.

54. Compound according to claim 53 wherein Y is phenyl substituted in the 4-position by fluoro or by chloro, in the 2- and 4-position by fluoro or in the 2- and 4-position by chloro.

55. Compound according to claim 53 or 54 wherein R^1 or R^5 represents fluorine or hydrogen.

56. Compound according to any one of claims 53 to 55 wherein R^3 or R^3 and R^4 represent hydroxy.

57. Compound of formula (I),



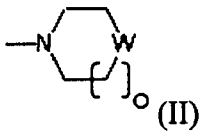
(I),

wherein R^1 or R^5 is hydrogen or fluorine;

any one of R^2 to R^4 represents hydroxyl and remaining R residues are
hydrogen;
C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy, wherein each is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, CO_2H, SO_3H, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3;
CO_2H;
SO_3H;
amino;

amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl;

a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

$CONH_2$;

SO_2NH_2;

$CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_6-alkyl and wherein in the case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings;

thiol;

hydroxyl;

nitro;

cyano;

fluorosulfonyl;

halogen selected from fluoro, chloro, bromo or iodo;

CF_3;

OCF_3; or

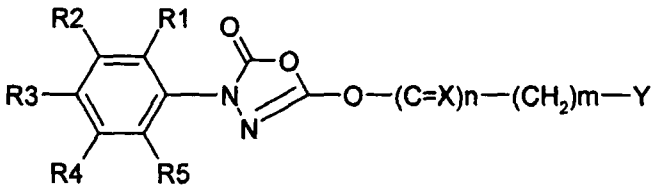
a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, COOH, SO_3H, amino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3;

and wherein two or more of R^2 to R^4 may be combined to form anellated saturated, unsaturated or aromatic homo- or hetero-ring systems;

n and m are 0; and

Y is phenyl substituted once or several times by C_1-C_6-alkyl; phenyl; C_1-C_6-alkoxy; hydroxy; fluoro; chloro; bromo; CF_3; OCF_3; amino; or $CONH_2$ optionally substituted once or twice with C_1-C_6-alkyl wherein these optional C_1-C_6-alkyl residues may be combined to form 5 or 6-membered rings;
or a stereoisomer, pharmaceutically acceptable salt or ester, or prodrug thereof.

58. Compound of formula (I),

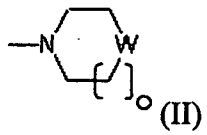


(I),

wherein R^1 or R^5 is hydrogen or fluorine;

any one of R^2 to R^4 represents amino and remaining R residues are
hydrogen;
C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy, wherein each is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, CO_2H, SO_3H, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3;
CO_2H;
SO_3H;
amino;
amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl;

a disubstituted amino of the following formula (II)



wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

$CONH_2$;

SO_2NH_2;

$CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_6-alkyl and wherein in the case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings;

thiol;

hydroxyl;

nitro;

cyano;

fluorosulfonyl;

halogen selected from fluoro, chloro, bromo or iodo;

CF_3;

OCF_3; or

a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, COOH, SO_3H, amino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3;

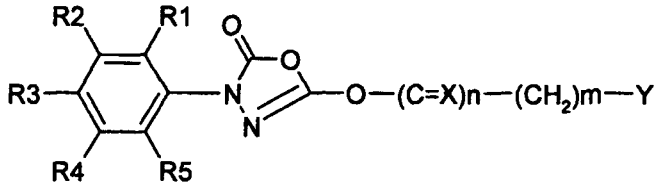
and wherein any two or more of R^2 to R^4 may be combined to form anellated saturated, unsaturated or aromatic homo- or hetero-ring systems;

n and m are 0; and

Y is phenyl substituted once or several times by C_1-C_6-alkyl; phenyl; C_1-C_6-alkoxy; hydroxy; fluoro; chloro; bromo; CF_3; OCF_3; amino; or $CONH_2$ optionally substituted once

or twice with C_1-C_6-alkyl wherein these optional C_1-C_6-alkyl residues may be combined to form 5 or 6-membered rings,
or a stereoisomer, pharmaceutically acceptable salt or ester, or prodrug thereof.

59. Compound of formula (I),



(I),

wherein R^1 or R^5 is hydrogen or fluorine;

one of R^3 or R^4 is C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy, wherein each is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, CO_2H, SO_3H, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3;

the other of R^3 or R^4 is amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl;

and R^2 is:
hydrogen;
C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy,

C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy, wherein each is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, CO_2H, SO_3H, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3;

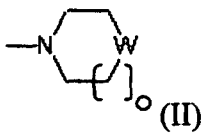
CO_2H;

SO_3H;

amino;

amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl;

a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

$CONH_2$;

SO_2NH_2;

$CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_6-alkyl and wherein in the case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings;

thiol;

hydroxyl;

nitro;

cyano;

fluorosulfonyl;

halogen selected from fluoro, chloro, bromo or iodo;

CF_3;

OCF_3; or

a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, COOH, SO_3H, amino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3;

n and m are 0; and

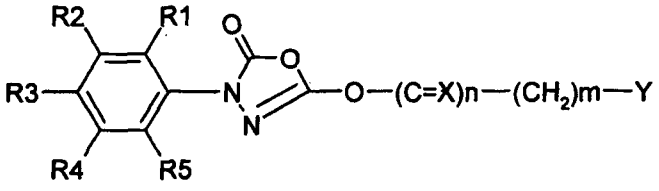
Y is phenyl substituted once or several times by C_1-C_6-alkyl; phenyl; C_1-C_6-alkoxy; hydroxy; fluoro; chloro; bromo; CF_3; OCF_3; amino; or $CONH_2$ optionally substituted once or twice with C_1-C_6-alkyl wherein these optional C_1-C_6-alkyl residues may be combined to form 5 or 6-membered rings,
or a stereoisomer, pharmaceutically acceptable salt or ester, or prodrug thereof.

60. Compound according to any of claims 57 to 59 wherein Y is phenyl substituted once or several times by C_1-C_6-alkyl; phenyl; C_1-C_6-alkoxy; hydroxy; fluoro; chloro; bromo; CF_3; OCF_3; amino; or $CONH_2$ optionally substituted once or twice with C_1-C_6-alkyl, wherein these optional C_1-C_6-alkyl residues may be combined to form 5 or 6-membered rings.

61 Compound according to claim 60 wherein Y is phenyl substituted once or twice by hydroxy, fluoro, chloro or bromo.

62. Compound according to claim 60 wherein Y is phenyl substituted in the 4-position by fluoro or by chloro, in the 2- and 4-position by fluoro, in the 2- and 4-position by chloro, or in the 4-position by phenyl.

63. Compound of formula (I),



(I)

wherein

R^1 to R^5 independently from each other represent:

hydrogen;

C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy, wherein each is optionally substituted once or several times by

C_1-C_6-alkyl; C_1-C_6-alkoxy; C_6-C_{10}-aryloxy; CO_2H; SO_3H; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3;

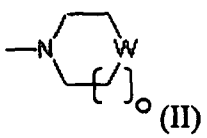
CO_2H;

SO_3H;

amino;

amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl;

a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

$CONH_2$;

SO_2NH_2;

$CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_6-alkyl and wherein in the case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings;

thiol;

hydroxyl;

nitro;

cyano;

fluorosulfonyl;

halogen selected from fluoro, chloro, bromo or iodo;

CF_3;

OCF_3; or

a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by

C_1-C_6-alkyl; C_1-C_6-alkoxy; COOH; SO_3H;, $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3;

and wherein any two or more of R^1 to R^5 may be combined to form anellated saturated, unsaturated or aromatic homo- or hetero-ring systems;

n represents 0; m represents 1;

Y represents phenyl which is optionally substituted once or several times by

a) C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy;

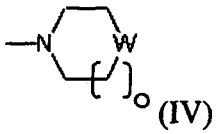
each of which is optionally substituted once or several times by C_1-C_6-alkyl; C_1-C_6-alkoxy; $CONH_2$ or SO_2NH_2, optionally substituted once or twice with C_1-C_6-alkyl; SO_3H; CO_2H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3;

wherein several of these optional substituents may be combined to form anellated saturated, unsaturated or aromatic homo- or hetero-ring systems; or

b) a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by C_1-C_6-alkyl; C_1-C_6-alkoxy; COOH; $CONH_2$ or SO_2NH_2, optionally substituted once or twice with C_1-C_6-alkyl; SO_3H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_4-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3 or OCF_3; or

c) hydroxy; thiol; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; OCF_3; CO_2H; SO_3H; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted

one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; a disubstituted amino of the following formula (IV)


(IV)

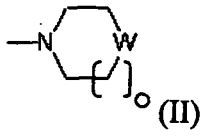
wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_4-alkyl and wherein the methylene groups in formula (IV) may optionally be substituted once or twice with C_1-C_4-alkyl, fluoro or chloro;

with the proviso that Y does not represent unsubstituted phenyl if R^1, R^2 and R^5 represent hydrogen, R^4 represents hydrogen, trifluoromethoxy, trifluorobutoxy, 3,3,5,5-tetramethylcyclohexyloxy, benzyloxy, phenoxy, phenyl, 2-dimethylaminoethyloxy or 3-methylphenoxy-methyl and R^3 represents hydrogen, trifluoromethoxy, trifluorobutoxy, 3,3,5,5-tetramethylcyclohexyloxy, phenoxy, 4-chlorophenoxy, cyclohexyl, phenyl, morpholinosulfonyl, 3,3,5-trimethylcyclohexylaminosulfonyl, 2,2,6,6-tetramethylpiperidin-4-ylaminosulfonyl, 2-(diisopropylaminoethyl)aminosulfonyl, 4-methylpiperazin-1-yl-sulfonyl, 3,3-dimethylpiperidinocarbonyl or 3,5-dichlorophenoxy 2-dimethylaminoethyloxy or 3-methylphenoxy-methyl.

64. Compound according to claim 63 wherein R^1 to R^5 independently from each other represent:
hydrogen;
hydroxyl;
C_1-C_6-alkyl, C_6-C_{10}-aryl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_6-alkoxy, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, wherein each is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, hydroxy, fluoro, chloro, bromo, cyano, CF_3 or OCF_3;
amino;
amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl;

1-pyrrolyl, 2-pyrrolyl or 3-pyrrolyl, optionally substituted with one or more residues selected from C_1-C_6-alkyl, amino, fluoro, chloro or CF_3,

a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

$CONH_2$;

SO_2NH_2;

$CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with residues selected from C_1-C_6-alkyl or C_6-C_{10}-aryl;

fluoro;

chloro;

bromo;

CF_3; or

OCF_3.

65. Compound according to claim 63 or 64 wherein one or more of R^1 to R^5 represent hydrogen, fluorine or chlorine.

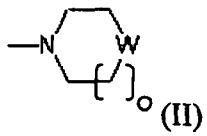
66. Compound according to claim 65 wherein R^1 or R^5 represents hydrogen or fluorine.

67. Compound according to any one of claims 63 to 66 wherein one or more of R^1 to R^5 represent hydroxy; or

C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_6-alkoxy, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, wherein each is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, $CONH_2$ or SO_2NH_2 optionally substituted once or twice with C_1-C_6-alkyl or C_6-C_{10}-aryl, hydroxy, fluoro, chloro, bromo, cyano, CF_3 or OCF_3.

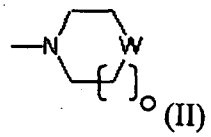
68. Compound according to claim 67 wherein one of R^2, R^3 or R^4 represents hydroxy; or C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, or C_6-C_{10}-aryl-C_1-C_6-alkoxy, each of which is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, $CONH_2$ or SO_2NH_2 optionally substituted once or twice with C_1-C_6-alkyl or C_6-C_{10}-aryl, hydroxy, fluoro, chloro, or bromo.

69. Compound according to any one of claims 63 to 68 wherein one or more of R^1 to R^5 represent amino;
amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl;
or
a disubstituted amino of the following formula (II)


(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro.

70. Compound according to claim 69 wherein one of R^2, R^3 or R^4 represents amino;
amino substituted once or twice with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl;
or a disubstituted amino of the following formula (II)


(II)

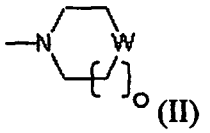
wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro.

71. Compound according to any one of claims 63 to 70 wherein Y representing phenyl is substituted once or several times by:

a) C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_6-alkoxy, wherein each is optionally substituted once or several times by: C_1-C_6-alkyl; C_1-C_6-alkoxy; SO_3H; CO_2H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; $CONH_2$; SO_2NH_2; OCF_3; or $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with C_1-C_6-alkyl;

or by

b) hydroxy; thiol; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; OCF_3; CO_2H; SO_3H; $CONH_2$; SO_2NH_2; or $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, wherein in the case of a di-C_1-C_6-alkyl substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted once or several times with C_1-C_6-alkyl or phenyl; a disubstituted amino of the following formula (II)


(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

or by

c) a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by C_1-C_6-alkyl; C_1-C_6-alkoxy; COOH; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with C_1-C_6-alkyl which may be combined to form 5 or 6-membered rings; SO_3H; amino; amino substituted one or more times with residues selected from

C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; or OCF_3.

72. Compound according to claim 71 wherein Y is phenyl substituted once or several times by C_1-C_6-alkyl; phenyl; C_1-C_6-alkoxy; hydroxy; fluoro; chloro; bromo; CF_3; OCF_3; amino; $CONH_2$ optionally substituted once or twice with C_1-C_6-alkyl wherein these optional C_1-C_6-alkyl residues may be combined to form 5 or 6-membered rings.

73. Compound according to claim 71 wherein Y is phenyl substituted once or twice by hydroxy, fluoro, chloro or bromo.

74. Compound according to claim 72 wherein Y is phenyl substituted in the 4-position by fluoro or by chloro, in the 2- and 4-position by fluoro, in the 2- and 4-position by chloro, or in the 4-position by phenyl.

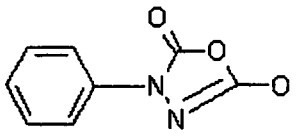
75. Compound according to claim 63 wherein Y is phenyl substituted once or twice by fluoro, chloro or bromo; and any one of R^2 to R^4 represents OR^7 wherein R^7 is selected from hydrogen and C_1-C_6-alkyl.

76. Compound according to claim 75 wherein Y is phenyl substituted in the 4-position by fluoro or by chloro, in the 2- and 4-position by fluoro or in the 2- and 4-position by chloro.

77. Compound according to claim 75 or 76 wherein R^1 or R^5 represents fluorine or hydrogen.

78. Compound according to any one of claims 75 to 77 wherein R^3 or R^3 and R^4 represent hydroxy.

79. Compound comprising a pharmacophore of the following substructure (III),



(III),

for the inhibition of fatty acid amide hydrolase (FAAH).

80. A pharmaceutical composition comprising a compound accord to any one of claims 24 to 79 and a pharmaceutically acceptable carrier.

81. Compound according to any of claims 24 to 79 for use as a medicament.

82. Compound according to any of claims 24 to 78 for inhibition of fatty acid amide hydrolase (FAAH).

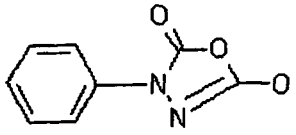
83. Compound according to any of claims 24 to 79 for treatment of a disorder that is positively influenced by inhibition of fatty acid amide hydrolase (FAAH).

84. Compound according to claim 83 wherein the disorder is selected from pain, dizziness, vomiting, and nausea, eating disorders, neurological and psychiatric pathologies, acute and chronic neurodegenerative diseases, epilepsy, sleep disorders, cardiovascular diseases, cancers, disorders of the immune system, parasitic, viral or bacterial infectious diseases, inflammatory diseases, osteoporosis, eye conditions, pulmonary conditions and gastrointestinal diseases.

85. Use of a compound according to any of claims 24 to 79 for inhibition of fatty acid amide hydrolase (FAAH).

86. Use of a compound according to any of claims 24 to 79 for treatment of a disorder that is positively influenced by inhibition of FAAH.

87. Use of a pharmacophore of the following substructure (III),

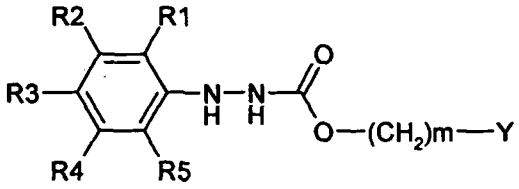


(III),

for the preparation of a compound for the treatment of a disorder which is positively influenced by the inhibition of fatty acid amide hydrolase (FAAH).

88. Use according to claim 86 or 87 wherein the disorder is selected from pain, dizziness, vomiting, and nausea, eating disorders, neurological and psychiatric pathologies, acute and chronic neurodegenerative diseases, epilepsy, sleep disorders, cardiovascular diseases, cancers, disorders of the immune system, parasitic, viral or bacterial infectious diseases, inflammatory diseases, osteoporosis, eye conditions, pulmonary conditions and gastrointestinal diseases. ...

89. Process for the preparation of a compound according to any one of claims 1 to 17, and 24 to 79 wherein a compound of formula (IV),



(IV),

wherein

R^1 to R^5 independently from each other represent:

hydrogen;

C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl,

C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy, wherein each is optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, CO_2H, SO_3H, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3;

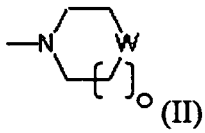
CO_2H;

SO_3H;

amino;

amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl;

a disubstituted amino of the following formula (II)



(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

$CONH_2$;

SO_2NH_2;

$CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_6-alkyl and wherein in the case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings;

thiol;

hydroxyl;

nitro;

cyano;

fluorosulfonyl;

halogen selected from fluoro, chloro, bromo or iodo;

CF_3;

OCF_3; or

a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by C_1-C_6-alkyl, C_1-C_6-alkoxy, COOH, SO_3H, amino, thiol, hydroxyl, nitro, cyano, fluoro, chloro, bromo, iodo, CF_3 or OCF_3;

and wherein any two or more of R^1 to R^5 may be combined to form anellated saturated, unsaturated or aromatic homo- or hetero-ring systems;

m represents 0, 1, 2, 3, 4, 5 or 6;

Y represents:

a) hydrogen;

b) C_1-C_{18}-alkyl, mono or polyunsaturated C_2-C_{18}-alkylene, C_3-C_8-cycloalkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy, or a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, wherein each is optionally substituted once or several times by:

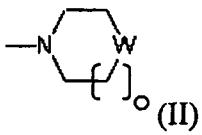
b1) C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkoxy, C_6-C_{10}-aryloxy, C_6-C_{10}-aryl-C_1-C_8-alkoxy, C_1-C_6-alkoxycarbonyl, C_6-C_{10}-aryloxycarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkoxycarbonyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_6-C_{10}-aryl-C_1-C_8-alkylcarbonyl, C_1-C_6-alkylcarboxy, C_6-C_{10}-arylcarboxy, C_1-C_6-alkylmercaptyl, C_6-C_{10}-arylmercaptyl, C_1-C_6-alkylmercaptocarbonyl, C_3-C_8-cycloalkylmercaptocarbonyl, C_6-C_{10}-arylmercaptocarbonyl, C_1-C_6-alkylmercaptocarboxy, C_6-C_{10}-arylmercaptocarboxy, C_1-C_6-alkylsulfonyl, C_6-C_{10}-arylsulfonyl, C_1-C_6-alkylsulfoxy, C_6-C_{10}-arylsulfoxy; wherein each is optionally substituted once or several times by C_1-C_6-alkyl; C_1-C_6-alkoxy; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with C_1-C_6-alkyl; SO_3H; CO_2H; amino; amino substituted one or more times with residues

selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; or OCF_3;

wherein several of the substituents in b1) may be combined to form anellated saturated, unsaturated or aromatic homo- or hetero-ring systems;

or by

b2) hydroxy; thiol; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; CO_2H; SO_3H; OCF_3; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_6-alkyl and wherein in the case of a di-C_1-C_6-alkyl-substituted amino functionality, the alkyl residues may be combined to form 5 or 6-membered rings; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; or a disubstituted amino of the following formula (II)


(II)

wherein o represents 0 or 1 and W represents O, CH_2, or NR^6 with R^6 being selected from hydrogen and C_1-C_6-alkyl and wherein the methylene groups in formula (II) may optionally be substituted once or twice with C_1-C_6-alkyl, fluoro or chloro;

or by

b3) a saturated, unsaturated or aromatic heterocyclic ring system of up to 10 atoms, optionally substituted once or several times by C_1-C_6-alkyl; C_1-C_6-alkoxy; COOH; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice with C_1-C_6-alkyl; SO_3H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_6-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; thiol; hydroxyl; nitro; cyano; fluoro; chloro; bromo; iodo; CF_3; or OCF_3;

c) SO_3H; amino; amino substituted one or more times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl, C_6-C_{10}-aryl-C_1-C_8-alkyl, C_1-C_6-alkylcarbonyl, C_6-C_{10}-arylcarbonyl, C_1-C_6-alkylsulfonyl and C_6-C_{10}-arylsulfonyl; $CONH_2$; SO_2NH_2; $CONH_2$ or SO_2NH_2 wherein the amino functionality is substituted once or twice times with residues selected from C_1-C_6-alkyl, C_6-C_{10}-aryl or C_6-C_{10}-aryl-C_1-C_4-alkyl and wherein in the case of a di-C_1-C_6-alkyl-substituted amino functionality the alkyl residues may be combined to form 5 or 6-membered rings; thiol; hydroxyl; nitro; cyano; fluorosulfonyl; halogen selected from fluoro, chloro, bromo or iodo; CF_3; or OCF_3;

is cyclised to form an oxadiazolone ring system,

with the proviso that the obtained product is not a compound disclaimed in claim 24.

90. Process according to claim 89, wherein the cyclisation to the oxadiazolone ring system is achieved by phosgene, carbonyldiimidazole, or a carbonic acid ester.