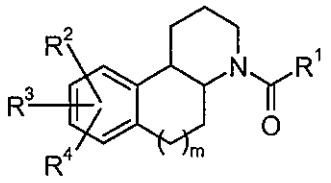
Claims

1. Compounds of formula I



I

wherein

R1 is selected from the group R^{1a} consisting of

phenyl, naphthyl, pyrrolyl, furanyl, thienyl, pyridyl, indolyl, benzofuranyl, benzothiophenyl, quinolinyl, isoquinolinyl,

wherein in the pyrrolyl, furanyl, thienyl, and pyridyl group optionally 1 or 2 CH groups may be replaced by N, and wherein in the indolyl, benzofuranyl, benzothiophenyl, quinolinyl, and isoquinolinyl group 1 to 3 CH groups may optionally be replaced by N,

2-oxo-1,2-dihydro-pyridinyl, 4-oxo-1,4-dihydro-pyridinyl, 3-oxo-2,3-dihydro-pyridazinyl, 3,6-dioxo-1,2,3,6-tetrahydro-pyridazinyl, 2-oxo-1,2-dihydro-pyrimidinyl, 4-oxo-3,4-dihydro-pyrimidinyl, 1,2,3,4-tetrahydro-2,4-dioxo-pyrimidinyl, 2-oxo-1,2-dihydro-pyrazinyl, 2,3-dioxo-1,2,3,4-tetrahydro-pyrazinyl, indanyl, 1-oxo-indanyl, 2,3-dihydro-indolyl, 2,3-dihydro-isoindolyl, 2-oxo-2,3-dihydro-indolyl, 1-oxo-2,3-dihydro-isoindolyl, 2,3-dihydrobenzofuranyl, 2-oxo-2,3-dihydro-benzimidazolyl, 2-oxo-2,3-dihydro-benzoxazolyl, benzo[1,3]dioxolyl, 2-oxo-benzo[1,3]dioxolyl, 1,2,3,4-tetrahydro-naphthyl, 1,2,3,4-tetrahydro-quinolinyl, 2-oxo-1,2,3,4-tetrahydro-quinolinyl, 2-oxo-1,2-dihydro-quinolinyl, 4-oxo-1,4-dihydro-quinolinyl, 1,2,3,4-tetrahydro-isoquinolinyl, 1-oxo-1,2,3,4-tetrahydro-isoquinolinyl, 1-oxo-1,2-dihydro-isoquinolinyl, 4-oxo-1,4-dihydro-cinnolinyl, 2-oxo-1,2-dihydro-quinazolinyl, 4-oxo-1,4-dihydro-quinazolinyl, 2,4-dioxo-1,2,3,4-tetrahydro-quinazolinyl, 2-oxo-1,2-dihydro-quinoxalinyl, 3-oxo-1,2,3,4-tetrahydro-quinoxalinyl, 2,3-dioxo-1,2,3,4-tetrahydro-quinoxalinyl, 1-oxo-1,2-dihydro-phthalazinyl, 1,4-dioxo-1,2,3,4-tetrahydro-phthalazinyl, chromanyl, coumarinyl, 2,3-dihydro-benzo[1,4]dioxin-yl, 3-oxo-3,4-dihydro-benzo[1,4]oxazinyl, tetrazolyl, 2-oxo-2,3-dihydro-benzothiazolyl, and imidazo[1,2-a]pyridinyl,

wherein the members of the group R1a are attached to the carbonyl group in formula I via an aromatic carbon atom and

wherein the members of the group R1a may optionally be substituted with one R5, one to three identical and/or different R6, and/or one R7, provided that in case R1

is a phenyl group, the substituents R5, R6, and/or R7 are not attached to the carbon atoms next to the carbon atom which is attached to the carbonyl group in formula I;

R^2 is selected from the group R^{2a} consisting of
hydrogen, halogen, (het)aryl, cyano, nitro, amino, hydroxy, C_{1-6}-alkyl, C_{3-6}-cycloalkyl, C_{2-6}-alkenyl, and C_{2-6}-alkynyl,
wherein in each C_{1-6}-alkyl-, C_{3-6}-cycloalkyl-, C_{2-6}-alkenyl- or C_{2-6}-alkynyl-group one CH_2 group may optionally be replaced by CO or SO_2, one CH_2 group optionally by O or NR^N and one CH group optionally by N, and wherein each of those groups may optionally be mono- or polyfluorinated and optionally mono- or independently of each other disubstituted with
chlorine, C_{1-3}-alkyl, cyano, (het)aryl, amino, C_{1-3}-alkylamino, di-(C_{1-3}-alkyl)-amino, hydroxy, C_{1-3}-alkyloxy, (het)aryloxy, C_{1-3}-alkylsulfanyl, C_{1-3}-alkylsulfinyl, or C_{3-6}-cycloalkyl, wherein one or two CH_2 groups of the C_{3-6}-cycloalkyl group may optionally be replaced independently of each other by carbonyl, O or NR^N and one CH group optionally by N, and which may optionally be mono- or independently disubstituted with fluorine or C_{1-3}-alkyl;

R^3, R^4 are selected independently of each other from the group $R^{3/4a}$ consisting of
hydrogen, halogen, C_{1-3}-alkyl, trifluoromethyl, hydroxy, C_{1-3}-alkyloxy, and cyano,
or
$R^{3/4a}$ denotes R^3 and R^4 that are bound to adjacent carbon atoms and joined to form a methylenedioxy, ethylenedioxy, or C_{3-5}-alkylene group, each of which may optionally be substituted with one or two groups independently selected from fluorine and methyl, or, together with the carbon atoms they are attached, form a benzo, pyrido, pyrimido, pyrazino, pyridazino, pyrazolo, imidazo, triazolo, oxazolo, thiazolo, isoxazolo, or isothiazolo ring, each of which may optionally be substituted with one or two substituents selected independently from halogen, C_{1-3}-alkyl, trifluoromethyl, amino, C_{1-3}-alkylamino, di-(C_{1-3}-alkyl)amino, hydroxy, and C_{1-3}-alkyloxy;

R^5 is selected from the group R^{5a} consisting of
halogen, (het)aryl, cyano, nitro, amino, hydroxy,
C_{1-6}-alkyl, C_{3-6}-cycloalkyl, C_{2-6}-alkenyl, and C_{2-6}-alkynyl, wherein in each group one CH_2 group may optionally be replaced by CO or SO_2, one CH_2 group optionally by

O or NR^N, and one CH group optionally by N, and wherein each group may optionally be mono- or polyfluorinated and optionally mono- or independently of each other disubstituted with

chlorine, C_{1-3}-alkyl, cyano, (het)aryl, amino, C_{1-3}-alkylamino, di-(C_{1-3}-alkyl)-amino, hydroxy, C_{1-3}-alkyloxy, (het)aryloxy, C_{1-3}-alkylsulfanyl, C_{1-3}-alkylsulfinyl, or C_{3-6}-cycloalkyl, wherein one or two CH_2 groups of the C_{3-6}-cycloalkyl group may optionally be replaced independently of each other by carbonyl, O or NR^N and one CH group optionally by N, and which may optionally be mono- or independently disubstituted with fluorine or C_{1-3}-alkyl;

R^6, R^7 are selected independently of each other from the group $R^{6/7a}$ consisting of halogen, C_{1-3}-alkyl, C_{2-3}-alkynyl, trifluoromethyl, hydroxy, C_{1-3}-alkyloxy, and cyano, and/or

$R^{6/7a}$ denotes one R^6 combined with R^7, which are bound to adjacent carbon atoms, that form a methylenedioxy, difluoromethylenedioxy, ethylenedioxy, C_{3-5}-alkylene group, or form, together with the carbon atoms they are attached, a pyrazolo, imidazo, oxazolo, isoxazolo, thiazolo, or isothiazolo ring, each of which may optionally be mono- or disubstituted independently of each other with C_{1-3}-alkyl, trifluoromethyl, amino, C_{1-3}-alkylamino, di-(C_{1-3}-alkyl)amino, hydroxy, C_{1-3}-alkyloxy;

R^N is selected independently of each other from the group R^{Na} consisting of hydrogen, C_{1-6}-alkyl, C_{3-6}-cycloalkyl, C_{3-6}-alkenyl, C_{3-6}-alkynyl, (het)aryl, C_{1-4}-alkylcarbonyl, (het)arylcarbonyl, C_{1-4}-alkylaminocarbonyl, di-(C_{1-3}-alkyl)-aminocarbonyl, (het)arylaminocarbonyl, C_{1-4}-alkyloxycarbonyl, C_{1-4}-alkylsulfonyl and (het)arylsulfonyl,

wherein each alkyl, alkenyl and alkynyl group may optionally be mono- or polysubstituted with fluorine and optionally monosubstituted with (het)aryl, cyano, aminocarbonyl, C_{1-3}-alkylaminocarbonyl, di-(C_{1-3}-alkyl)aminocarbonyl, carboxy, C_{1-4}-alkyloxycarbonyl, amino, C_{1-4}-alkylamino, di-(C_{1-3}-alkyl)amino, C_{1-4}-alkylcarbonylamino, hydroxy, C_{1-4}-alkyloxy, C_{1-4}-alkylsulfanyl, C_{1-4}-alkylsulfinyl, or C_{1-4}-alkylsulfonyl;

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(het)aryl is selected independently of each other from the group HA^a consisting of phenyl, naphthyl, pyrrolyl, furanyl, thienyl, pyridyl, indolyl, benzofuranyl, benzothiophenyl, quinolinyl, isoquinolinyl,

wherein in the pyrrolyl, furanyl, thienyl, and pyridyl group optionally 1 or 2 CH groups may be replaced by N, and wherein in the indolyl, benzofuranyl, benzothiophenyl, quinolinyl, and isoquinolinyl group 1 to 3 CH groups optionally may be replaced by N,

2-oxo-1,2-dihydro-pyridinyl, 4-oxo-1,4-dihydro-pyridinyl, 3-oxo-2,3-dihydro-pyridazinyl, 3,6-dioxo-1,2,3,6-tetrahydro-pyridazinyl, 2-oxo-1,2-dihydro-pyrimidinyl, 4-oxo-3,4-dihydro-pyrimidinyl, 2,4-dioxo-1,2,3,4-tetrahydro-pyrimidinyl, 2-oxo-1,2-dihydro-pyrazinyl, 2,3-dioxo-1,2,3,4-tetrahydro-pyrazinyl, 2-oxo-2,3-dihydro-indolyl, 2,3-dihydrobenzo-furanyl, 2-oxo-2,3-dihydro-benzimidazolyl, 2-oxo-2,3-dihydro-benzoxazolyl, 2-oxo-1,2-dihydro-quinolinyl, 4-oxo-1,4-dihydro-quinolinyl, 1-oxo-1,2-dihydro-isoquinolinyl, 4-oxo-1,4-dihydro-cinnolinyl, 2-oxo-1,2-dihydro-quinazolinyl, 4-oxo-1,4-dihydro-quinazolinyl, 2,4-dioxo-1,2,3,4-tetrahydro-quinazolinyl, 2-oxo-1,2-dihydro-quinoxalinyl, 3-oxo-1,2,3,4-tetrahydro-quinoxalinyl, 2,3-dioxo-1,2,3,4-tetrahydro-quinoxalinyl, 1-oxo-1,2-dihydro-phthalazinyl, 1,4-dioxo-1,2,3,4-tetrahydro-phthalazinyl, chromanyl, coumarinyl, 2,3-dihydro-benzo[1,4]dioxinyl, 3-oxo-3,4-dihydro-benzo[1,4]oxazinyl, and tetrazolyl,

and wherein the above-mentioned (het)aryl groups may optionally be substituted with one to three R^{10} which may be identical or different;

R^{10} is selected independently of each other from the group R^{10a} consisting of halogen, C_{1-3}-alkyl, difluoromethyl, trifluoromethyl, cyano, aminocarbonyl, C_{1-3}-alkylaminocarbonyl, di-(C_{1-3}-alkyl)-aminocarbonyl, carboxy, C_{1-4}-alkyloxycarbonyl, nitro, amino, C_{1-3}-alkylamino, di-(C_{1-3}-alkyl)amino, acetylamino, methylsulfonylamino, hydroxy, C_{1-3}-alkyloxy, difluoromethoxy, trifluoromethoxy, methylsulfanyl, methylsulfinyl, methylsulfonyl, aminosulfonyl and phenyl,

wherein the phenyl-group may optionally be substituted with 1 or 2 substituents independently of each other selected from fluorine, methyl, methoxy, cyano, and hydroxy;

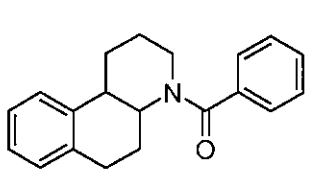
m denotes 0 or 1;

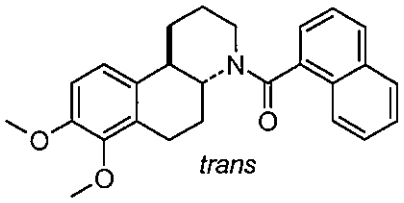
and wherein the aliphatic part of the tricyclic core structure of general formula I is substituted with one or two different or identical groups

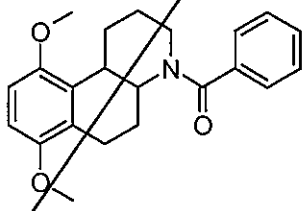
R^8 selected independently of each other from the group R^{8a} consisting of hydrogen, methyl, and ethyl;

the tautomers thereof, the stereoisomers thereof, the mixtures thereof, and the salts thereof,

while the following compounds are excluded:

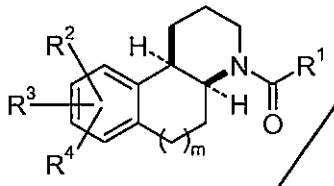






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2. Compounds of formula I.a according to claim 1

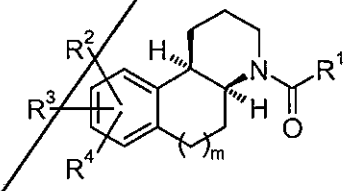


I.a

,

wherein the piperidine substructure and the tetraline (m=1) or indane (m=0) substructure form a *cis* configured tricyclic core structure.

3. Compounds of formula I.b according to claim 1 or 2



I.b

wherein the tricyclic core structure is *R* configured at C-10b (for m=1)/C-4a (for m=0) and *S* configured at C-4a (for m=1)/C-9a (for m=0).

4. Compounds according to any one or more of claims 1 to 3, wherein m is 0.

5. Compounds according to any one or more of claims 1 to 4, wherein

R^1 is selected from the group R^{1b} consisting of

phenyl, naphthyl, pyrrolyl, furanyl, thienyl, pyridyl, indolyl, benzofuranyl, benzothiophenyl, quinolinyl, isoquinolinyl,

wherein in the pyrrolyl, furanyl, thienyl, and pyridyl group optionally 1 CH group may be replaced by N, and wherein in the indolyl, benzofuranyl,

benzothiophenyl, quinolinyl, and isoquinolinyl groups optionally 1 or 2 CH groups may be replaced by N,

indanyl, 2,3-dihydro-indolyl, 2-oxo-2,3-dihydro-indolyl, 2,3-dihydro-benzofuranyl, 2-oxo-2,3-dihydro-benzoimidazolyl, 2-oxo-2,3-dihydro-benzothiazolyl, benzo[1,3]dioxolyl, 1,2,3,4-tetrahydronaphthyl, 1,2,3,4-tetrahydroquinolinyl, 1,2,3,4-tetrahydroisoquinolinyl, 2-oxo-1,2-dihydro-quinoxalinyl, 3-oxo-1,2,3,4-tetrahydro-quinoxalinyl, chromanyl, and imidazo[1,2-a]pyridinyl,

wherein the members of the group R^{1b} are attached to the carbonyl group in formula I via an aromatic carbon atom and

wherein the members of the group R^{1b} may optionally be substituted with one R^5, one R^6, and/or one R^7, provided that in case R^1 is a phenyl group, the substituents R^5, R^6, and/or R^7 are not attached to the carbon atoms next to the carbon atom which is attached to the carbonyl group in formula I.

6. Compounds according to any one or more of claims 1 to 4, wherein

R^1 is selected from the group R^{1f} consisting of

benzimidazol-5-yl, 6-methyl-benzimidazol-5-yl and 7-methyl-benzimidazol-5-yl.

7. Compounds according to any one or more of claims 1 to 6, wherein

R^2 is selected from the group R^{2b} consisting of

hydrogen, halogen, (het)aryl, cyano, nitro, amino, hydroxy, C_{2-6}-alkynyl, C_{1-6}-alkyl and C_{3-6}-cycloalkyl,

wherein in the C_{1-6}-alkyl and C_{3-6}-cycloalkyl group one CH_2 group may optionally be replaced by CO or SO_2, one CH_2 group optionally by O or NR^N, and one CH group optionally by N, and wherein both of these groups may optionally be mono- or polyfluorinated and optionally mono- or independently of each other disubstituted with

chlorine, C_{1-3}-alkyl, cyano, (het)aryl, amino, C_{1-3}-alkylamino, di-(C_{1-3}-alkyl)-amino, hydroxy, C_{1-3}-alkyloxy, (het)aryloxy, C_{1-3}-alkylsulfanyl, C_{1-3}-alkylsulfinyl, and/or C_{3-6}-cycloalkyl, wherein in the C_{3-6}-cycloalkyl group one or two CH_2 groups may optionally be replaced independently of each other by carbonyl, O or NR^N, and one CH group optionally by N, and which may optionally be mono- or independently disubstituted with fluorine or C_{1-3}-alkyl.

8. Compounds according to any one or more of claims 1 to 7, wherein

R^3, R^4 are selected independently of each other from the group $R^{3/4b}$ consisting of hydrogen, fluorine, chlorine, C_{1-3}-alkyl, trifluoromethyl, cyano, hydroxy, and C_{1-3}-alkyloxy, or

$R^{3/4b}$ denotes R^3 and R^4 that are attached to adjacent carbon atoms and joined to form a methylenedioxy or ethylenedioxy group, or, together with the carbon atoms they are attached, an imidazo, oxazolo, or a thiazolo ring, each of which may optionally be substituted with one or two substituents independently selected from methyl, dimethylamino, hydroxy, and methoxy.

9. Compounds according to any one or more of claims 1 to 8, wherein

R^5 is selected from the group R^{5b} consisting of

fluorine, chlorine, bromine, C_{1-4}-alkyl, C_{3-6}-cycloalkyl-C_{1-3}-alkyl, C_{3-6}-cycloalkyl, (het)aryl-C_{1-3}-alkyl, (het)aryl, cyano-C_{1-3}-alkyl, aminocarbonyl-C_{1-3}-alkyl, C_{1-3}-alkyl-aminocarbonyl-C_{1-3}-alkyl, di-(C_{1-3}-alkyl)-aminocarbonyl-C_{1-3}-alkyl, pyrrolidin-1-yl-carbonyl-C_{1-3}-alkyl, piperidin-1-yl-carbonyl-C_{1-3}-alkyl, piperazin-1-yl-carbonyl-C_{1-3}-alkyl, 4-(C_{1-3}-alkyl)-piperazin-1-yl-carbonyl-C_{1-3}-alkyl, morpholin-4-yl-carbonyl-C_{1-3}-alkyl, carboxy-C_{1-3}-alkyl, C_{1-3}-alkyloxy-carbonyl-C_{1-3}-alkyl, amino-C_{1-3}-alkyl, C_{1-3}-alkylamino-C_{1-3}-alkyl, di-(C_{1-3}-alkyl)-amino-C_{1-3}-alkyl, pyrrolidin-1-yl-C_{1-3}-alkyl, piperidin-1-yl-C_{1-3}-alkyl, piperazin-1-yl-C_{1-3}-alkyl, 4-(C_{1-3}-alkyl)-piperazin-1-yl-C_{1-3}-alkyl, morpholin-4-yl-C_{1-3}-alkyl, C_{1-3}-alkylcarbonylamino-C_{1-3}-alkyl, (het)arylcarbonylamino-C_{1-3}-alkyl, 2-oxo-pyrrolidin-1-yl-C_{1-3}-alkyl, 2-oxo-piperidin-1-yl-C_{1-3}-alkyl, 2-oxo-piperazin-1-yl-C_{1-3}-alkyl, 3-oxo-piperazin-1-yl-C_{1-3}-alkyl, 2-oxo-4-(C_{1-3}-alkyl)-piperazin-1-yl-C_{1-3}-alkyl, 3-oxo-4-(C_{1-3}-alkyl)-piperazin-1-yl-C_{1-3}-alkyl, 3-oxo-morpholin-4-yl-C_{1-3}-alkyl, hydroxy-C_{1-3}-alkyl, C_{1-3}-alkyloxy-C_{1-3}-alkyl, (het)aryloxy-C_{1-3}-alkyl, difluoromethyl, trifluoromethyl, 2,2,2-trifluoro-1-hydroxyethyl, 2,2,2-trifluoro-1-hydroxy-1-methylethyl, 2,2,2-trifluoro-1-hydroxy-1-(trifluoromethyl)ethyl, cyano, aminocarbonyl, C_{1-3}-alkyl-aminocarbonyl, di-(C_{1-3}-alkyl)-aminocarbonyl, (het)aryl-C_{1-3}-alkylaminocarbonyl, N-(C_{1-3}-alkyl)-(het)aryl-C_{1-3}-alkylaminocarbonyl, (het)arylaminocarbonyl, N-(C_{1-3}-alkyl)-(het)aryl-aminocarbonyl, pyrrolidin-1-yl-carbonyl, piperidin-1-yl-carbonyl, piperazin-1-yl-carbonyl, 4-(C_{1-3}-alkyl)-piperazin-1-yl-carbonyl, morpholin-4-yl-carbonyl, carboxy, C_{1-3}-alkyloxy-carbonyl, nitro, amino, C_{1-3}-alkylamino, di-(C_{1-3}-alkyl)amino, pyrrolidin-1-yl, piperidin-1-yl, piperazin-1-yl, 4-(C_{1-3}-alkyl)-piperazin-1-yl, 4-(C_{1-3}-alkylcarbonyl)-piperazin-1-yl, 4-(C_{1-3}-alkyloxycarbonyl)-piperazin-1-yl, 4-(C_{1-3}-alkylsulfonyl)-piperazin-1-yl, morpholin-4-yl, C_{1-3}-alkyl-carbonylamino, N-(C_{1-3}-

alkyl)-C_{1-3}-alkyl-carbonylamino, (het)arylcarbonylamino, N-(C_{1-3}-alkyl)-(het)arylcarbonylamino, (het)aryl-C_{1-3}-alkyl-carbonylamino, N-(C_{1-3}-alkyl)-(het)aryl-C_{1-3}-alkyl-carbonylamino, 2-oxo-pyrrolidin-1-yl, 2-oxo-piperidin-1-yl, 2-oxo-piperazin-1-yl, 2-oxo-4-(C_{1-3}-alkyl)-piperazin-1-yl, 3-oxo-piperazin-1-yl, 3-oxo-4-(C_{1-3}-alkyl)-piperazin-1-yl, 3-oxo-morpholin-4-yl, aminocarbonylamino, N-(aminocarbonyl)-C_{1-3}-alkylamino, C_{1-3}-alkyl-aminocarbonylamino, N-(C_{1-3}-alkyl-aminocarbonyl)-C_{1-3}-alkylamino, N-[di-(C_{1-3}-alkyl)aminocarbonyl]-C_{1-3}-alkylamino, di-(C_{1-3}-alkyl)-aminocarbonyl-amino, pyrrolidin-1-yl-carbonylamino, piperidin-1-yl-carbonylamino, piperazin-1-yl-carbonylamino, 4-(C_{1-3}-alkyl)-piperazin-1-yl-carbonylamino, morpholin-4-yl-carbonylamino, C_{1-3}-alkyloxy-carbonylamino, N-(C_{1-3}-alkyl)-C_{1-3}-alkyloxy-carbonylamino, C_{1-3}-alkyl-sulfonylamino, N-(C_{1-3}-alkyl)-C_{1-3}-alkyl-sulfonylamino, (het)arylsulfonylamino, N-(C_{1-3}-alkyl)-(het)arylsulfonylamino, oxo-imidazolidin-1-yl, hydroxy, C_{1-4}-alkyloxy, C_{3-6}-cycloalkyl-C_{1-3}-alkyloxy, (het)aryl-C_{1-3}-alkyloxy, C_{3-6}-cycloalkyloxy, (het)aryloxy, cyano-C_{1-3}-alkyloxy, aminocarbonyl-C_{1-3}-alkyloxy, C_{1-3}-alkyl-aminocarbonyl-C_{1-3}-alkyloxy, di-(C_{1-3}-alkyl)-aminocarbonyl-C_{1-3}-alkyloxy, pyrrolidin-1-yl-carbonyl-C_{1-3}-alkyloxy, piperidin-1-yl-carbonyl-C_{1-3}-alkyloxy, piperazin-1-yl-carbonyl-C_{1-3}-alkyloxy, 4-(C_{1-3}-alkyl)-piperazin-1-yl-carbonyl-C_{1-3}-alkyloxy, morpholin-4-yl-carbonyl-C_{1-3}-alkyloxy, carboxy-C_{1-3}-alkyloxy, C_{1-3}-alkyloxy-carbonyl-C_{1-3}-alkyloxy, amino-C_{1-3}-alkyloxy, C_{1-3}-alkylamino-C_{1-3}-alkyloxy, di-(C_{1-3}-alkyl)-amino-C_{1-3}-alkyloxy, pyrrolidin-1-yl-C_{1-3}-alkyloxy, piperidin-1-yl-C_{1-3}-alkyloxy, piperazin-1-yl-C_{1-3}-alkyloxy, 4-(C_{1-3}-alkyl)-piperazin-1-yl-C_{1-3}-alkyloxy, morpholin-4-yl-C_{1-3}-alkyloxy, 2-oxo-pyrrolidin-1-yl-C_{1-3}-alkyloxy, 2-oxo-piperidin-1-yl-C_{1-3}-alkyloxy, 2-oxo-piperazin-1-yl-C_{1-3}-alkyloxy, 3-oxo-piperazin-1-yl-C_{1-3}-alkyloxy, 2-oxo-4-(C_{1-3}-alkyl)-piperazin-1-yl-C_{1-3}-alkyloxy, 3-oxo-4-(C_{1-3}-alkyl)-piperazin-1-yl-C_{1-3}-alkyloxy, 3-oxo-morpholin-4-yl-C_{1-3}-alkyloxy, hydroxy-C_{1-3}-alkyloxy, C_{1-3}-alkyloxy-C_{1-3}-alkyloxy, tetrahydrofuran-3-yl-oxy, tetrahydropyran-3-yl-oxy, tetrahydropyran-4-yl-oxy, tetrahydrofuranyl-C_{1-3}-alkyloxy, tetrahydropyranyl-C_{1-3}-alkyloxy, difluoromethoxy, trifluoromethoxy, C_{1-3}-alkylsulfanyl-C_{1-3}-alkyloxy, C_{1-3}-alkylsulfinyl-C_{1-3}-alkyloxy, C_{1-3}-alkylsulfonyl-C_{1-3}-alkyloxy, C_{1-3}-alkylsulfonyl, (het)arylsulfonyl, aminosulfonyl, C_{1-3}-alkyl-aminosulfonyl, di-(C_{1-3}-alkyl)-aminosulfonyl, pyrrolidin-1-yl-sulfonyl, piperidin-1-yl-sulfonyl, morpholin-4-yl-sulfonyl, piperazin-1-yl-sulfonyl, and 4-(C_{1-3}-alkyl)-piperazin-1-yl-sulfonyl,

wherein the above-mentioned term (het)aryl is defined as hereinbefore or hereinafter.

10. Compounds according to any one or more of claims 1 to 9, wherein

R^6, R^7 are selected independently of each other from the group $R^{6/7b}$ consisting of fluorine, chlorine, bromine, C_{1-3}-alkyl, C_{2-3}-alkynyl, trifluoromethyl, hydroxy, C_{1-3}-alkyloxy, and cyano, and/or

$R^{6/7b}$ denotes one R^6 and R^7 that are attached to adjacent carbon atoms and joined to form a methylenedioxy, difluoromethylenedioxy, ethylenedioxy, or C_{3-5}-alkylene group.

11. Compounds according to any one or more of claims 1 to 10, wherein

R^{10} is selected independently of each other from the group R^{10b} consisting of fluorine, chlorine, bromine, C_{1-3}-alkyl, phenyl, difluoromethyl, trifluoromethyl, cyano, aminocarbonyl, C_{1-3}-alkylaminocarbonyl, di-(C_{1-3}-alkyl)-aminocarbonyl, carboxy, C_{1-4}-alkyloxycarbonyl, nitro, amino, acetylamino, methylsulfonylamino, hydroxy, C_{1-3}-alkyloxy, difluoromethoxy, trifluoromethoxy, methylsulfanyl, methylsulfinyl, methylsulfonyl, and aminosulfonyl.

12. Compounds according to any one or more of claims 1 to 11, wherein

R^N is selected independently of each other from the group R^{Nb} consisting of hydrogen, C_{1-6}-alkyl, C_{3-6}-cycloalkyl, C_{3-6}-alkenyl, phenyl, C_{1-4}-alkylcarbonyl, phenylcarbonyl, C_{1-3}-alkylaminocarbonyl, phenylaminocarbonyl, C_{1-4}-alkyloxycarbonyl, C_{1-4}-alkylsulfonyl, and phenylsulfonyl,

wherein the C_{1-6}-alkyl group optionally may be mono- or polysubstituted with fluorine and optionally monosubstituted with phenyl, cyano, aminocarbonyl, C_{1-3}-alkylaminocarbonyl, di-(C_{1-3}-alkyl)aminocarbonyl, carboxy, C_{1-4}-alkoxycarbonyl, C_{1-4}-alkylcarbonylamino, hydroxy, or C_{1-4}-alkoxy.

13. Compounds according to any one or more of claims 1 to 12, wherein

R^8 is selected independently of each other from the group R^{8b} consisting of hydrogen and methyl.

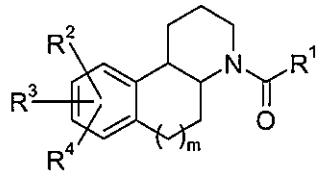
14. A compound according to any one or more of claims 1 to 13, or a pharmaceutically acceptable salt thereof as a medicament.

15. Pharmaceutical compositions containing at least one compound according to one or more of the claims 1 to 13 or a pharmaceutically acceptable salt thereof together with one or more pharmaceutically acceptable carriers.

16. A compound according to one or more of claims 1 to 13, or a pharmaceutically acceptable salt thereof for the treatment or prevention of diseases or conditions which can be influenced by inhibiting the enzyme 11β-hydroxysteroid dehydrogenase (HSD) 1, such as metabolic disorders.

Claims

1. Compounds of formula I



I

wherein

R^1 is selected from the group R^{1a} consisting of

phenyl, naphthyl, pyrrolyl, furanyl, thienyl, pyridyl, indolyl, benzofuranyl, benzothiophenyl, quinolinyl, isoquinolinyl,

wherein in the pyrrolyl, furanyl, thienyl, and pyridyl group optionally 1 or 2 CH groups may be replaced by N, and wherein in the indolyl, benzofuranyl, benzothiophenyl, quinolinyl, and isoquinolinyl group 1 to 3 CH groups may optionally be replaced by N,

2-oxo-1,2-dihydro-pyridinyl, 4-oxo-1,4-dihydro-pyridinyl, 3-oxo-2,3-dihydro-pyridazinyl, 3,6-dioxo-1,2,3,6-tetrahydro-pyridazinyl, 2-oxo-1,2-dihydro-pyrimidinyl, 4-oxo-3,4-dihydro-pyrimidinyl, 1,2,3,4-tetrahydro-2,4-dioxo-pyrimidinyl, 2-oxo-1,2-dihydro-pyrazinyl, 2,3-dioxo-1,2,3,4-tetrahydro-pyrazinyl, indanyl, 1-oxo-indanyl, 2,3-dihydro-indolyl, 2,3-dihydro-isoindolyl, 2-oxo-2,3-dihydro-indolyl, 1-oxo-2,3-dihydro-isoindolyl, 2,3-dihydrobenzofuranyl, 2-oxo-2,3-dihydro-benzimidazolyl, 2-oxo-2,3-dihydro-benzoxazolyl, benzo[1,3]dioxolyl, 2-oxo-benzo[1,3]dioxolyl, 1,2,3,4-tetrahydro-naphthyl, 1,2,3,4-tetrahydro-quinolinyl, 2-oxo-1,2,3,4-tetrahydro-quinolinyl, 2-oxo-1,2-dihydro-quinolinyl, 4-oxo-1,4-dihydro-quinolinyl, 1,2,3,4-tetrahydro-isoquinolinyl, 1-oxo-1,2,3,4-tetrahydro-isoquinolinyl, 1-oxo-1,2-dihydro-isoquinolinyl, 4-oxo-1,4-dihydro-cinnolinyl, 2-oxo-1,2-dihydro-quinazolinyl, 4-oxo-1,4-dihydro-quinazolinyl, 2,4-dioxo-1,2,3,4-tetrahydro-quinazolinyl, 2-oxo-1,2-dihydro-quinoxalinyl, 3-oxo-1,2,3,4-tetrahydro-quinoxalinyl, 2,3-dioxo-1,2,3,4-tetrahydro-quinoxalinyl, 1-oxo-1,2-dihydro-phthalazinyl, 1,4-dioxo-1,2,3,4-tetrahydro-phthalazinyl, chromanyl, coumarinyl, 2,3-dihydro-benzo[1,4]dioxin-yl, 3-oxo-3,4-dihydro-benzo[1,4]oxazinyl,

tetrazolyl, 2-oxo-2,3-dihydro-benzothiazolyl, or imidazo[1,2-a]pyridinyl,
wherein the members of the group R^{1a} are attached to the carbonyl group in formula I via an aromatic carbon atom and
wherein the members of the group R^{1a} may optionally be substituted with one R^5, one to three identical and/or different R^6, and/or one R^7, provided that in case R^1 is a phenyl group, the substituents R^5, R^6, and/or R^7 are not attached to the carbon atoms next to the carbon atom which is attached to the carbonyl group in formula I;

R^2 is selected from the group R^{2a} consisting of
hydrogen, halogen, (het)aryl, cyano, nitro, amino, hydroxy, C_{1-6}-alkyl, C_{3-6}-cycloalkyl, C_{2-6}-alkenyl, and C_{2-6}-alkynyl,
wherein in each C_{1-6}-alkyl-, C_{3-6}-cycloalkyl-, C_{2-6}-alkenyl- or C_{2-6}-alkynyl-group one CH_2 group may optionally be replaced by CO or SO_2, one CH_2 group optionally by O or NR^N and one CH group optionally by N, and
wherein each of those groups may optionally be mono- or polyfluorinated and optionally mono- or independently of each other disubstituted with
chlorine, C_{1-3}-alkyl, cyano, (het)aryl, amino, C_{1-3}-alkylamino, di-(C_{1-3}-alkyl)-amino, hydroxy, C_{1-3}-alkyloxy, (het)aryloxy, C_{1-3}-alkylsulfanyl, C_{1-3}-alkylsulfinyl, or C_{3-6}-cycloalkyl, wherein one or two CH_2 groups of the C_{3-6}-cycloalkyl group may optionally be replaced independently of each other by carbonyl, O or NR^N and one CH group optionally by N, and which may optionally be mono- or independently disubstituted with fluorine or C_{1-3}-alkyl;

R^3, R^4 are selected independently of each other from the group $R^{3/4a}$ consisting of
hydrogen, halogen, C_{1-3}-alkyl, trifluoromethyl, hydroxy, C_{1-3}-alkyloxy, and cyano,
or
$R^{3/4a}$ denotes R^3 and R^4 that are bound to adjacent carbon atoms and joined to form a methylenedioxy, ethylenedioxy, or C_{3-5}-alkylene group, each of which may optionally be substituted with one or two groups independently selected from fluorine and methyl, or, together with the carbon atoms they are attached, form a benzo, pyrido, pyrimido, pyrazino, pyridazino, pyrazolo, imidazo, triazolo,

oxazolo, thiazolo, isoxazolo, or isothiazolo ring, each of which may optionally be substituted with one or two substituents selected independently from halogen, C_{1-3}-alkyl, trifluoromethyl, amino, C_{1-3}-alkylamino, di-(C_{1-3}-alkyl)amino, hydroxy, and C_{1-3}-alkyloxy;

R^5 is selected from the group R^{5a} consisting of
halogen, (het)aryl, cyano, nitro, amino, hydroxy,
C_{1-6}-alkyl, C_{3-6}-cycloalkyl, C_{2-6}-alkenyl, and C_{2-6}-alkynyl, wherein in each group one CH_2 group may optionally be replaced by CO or SO_2, one CH_2 group optionally by O or NR^N, and one CH group optionally by N, and wherein each group may optionally be mono- or polyfluorinated and optionally mono- or independently of each other disubstituted with chlorine, C_{1-3}-alkyl, cyano, (het)aryl, amino, C_{1-3}-alkylamino, di-(C_{1-3}-alkyl)-amino, hydroxy, C_{1-3}-alkyloxy, (het)aryloxy, C_{1-3}-alkylsulfanyl, C_{1-3}-alkylsulfinyl, or C_{3-6}-cycloalkyl, wherein one or two CH_2 groups of the C_{3-6}-cycloalkyl group may optionally be replaced independently of each other by carbonyl, O or NR^N and one CH group optionally by N, and which may optionally be mono- or independently disubstituted with fluorine or C_{1-3}-alkyl;

R^6, R^7 are selected independently of each other from the group $R^{6/7a}$ consisting of
halogen, C_{1-3}-alkyl, C_{2-3}-alkynyl, trifluoromethyl, hydroxy, C_{1-3}-alkyloxy, and cyano, and/or
$R^{6/7a}$ denotes one R^6 combined with R^7, which are bound to adjacent carbon atoms, that form a methylenedioxy, difluoromethylenedioxy, ethylenedioxy, C_{3-5}-alkylene group, or form, together with the carbon atoms they are attached, a pyrazolo, imidazo, oxazolo, isoxazolo, thiazolo, or isothiazolo ring, each of which may optionally be mono- or disubstituted independently of each other with C_{1-3}-alkyl, trifluoromethyl, amino, C_{1-3}-alkylamino, di-(C_{1-3}-alkyl)amino, hydroxy, C_{1-3}-alkyloxy;

R^N is selected independently of each other from the group R^{Na} consisting of
hydrogen, C_{1-6}-alkyl, C_{3-6}-cycloalkyl, C_{3-6}-alkenyl, C_{3-6}-alkynyl, (het)aryl, C_{1-4}-

alkylcarbonyl, (het)arylcarbonyl, C_{1-4}-alkylaminocarbonyl, di-(C_{1-3}-alkyl)-aminocarbonyl, (het)arylaminocarbonyl, C_{1-4}-alkyloxycarbonyl, C_{1-4}-alkylsulfonyl and (het)arylsulfonyl,

wherein each alkyl, alkenyl and alkynyl group may optionally be mono- or polysubstituted with fluorine and optionally monosubstituted with (het)aryl, cyano, aminocarbonyl, C_{1-3}-alkylaminocarbonyl, di-(C_{1-3}-alkyl)aminocarbonyl, carboxy, C_{1-4}-alkyloxycarbonyl, amino, C_{1-4}-alkylamino, di-(C_{1-3}-alkyl)amino, C_{1-4}-alkylcarbonylamino, hydroxy, C_{1-4}-alkyloxy, C_{1-4}-alkylsulfanyl, C_{1-4}-alkylsulfinyl, or C_{1-4}-alkylsulfonyl;

(het)aryl is selected independently of each other from the group HA^a consisting of phenyl, naphthyl, pyrrolyl, furanyl, thienyl, pyridyl, indolyl, benzofuranyl, benzothiophenyl, quinolinyl, isoquinolinyl,

wherein in the pyrrolyl, furanyl, thienyl, and pyridyl group optionally 1 or 2 CH groups may be replaced by N, and wherein in the indolyl, benzofuranyl, benzothiophenyl, quinolinyl, and isoquinolinyl group 1 to 3 CH groups optionally may be replaced by N,

2-oxo-1,2-dihydro-pyridinyl, 4-oxo-1,4-dihydro-pyridinyl, 3-oxo-2,3-dihydro-pyridazinyl, 3,6-dioxo-1,2,3,6-tetrahydro-pyridazinyl, 2-oxo-1,2-dihydro-pyrimidinyl, 4-oxo-3,4-dihydro-pyrimidinyl, 2,4-dioxo-1,2,3,4-tetrahydro-pyrimidinyl, 2-oxo-1,2-dihydro-pyrazinyl, 2,3-dioxo-1,2,3,4-tetrahydro-pyrazinyl, 2-oxo-2,3-dihydro-indolyl, 2,3-dihydrobenzo-furanyl, 2-oxo-2,3-dihydro-benzimidazolyl, 2-oxo-2,3-dihydro-benzoxazolyl, 2-oxo-1,2-dihydro-quinolinyl, 4-oxo-1,4-dihydro-quinolinyl, 1-oxo-1,2-dihydro-isoquinolinyl, 4-oxo-1,4-dihydro-cinnolinyl, 2-oxo-1,2-dihydro-quinazolinyl, 4-oxo-1,4-dihydro-quinazolinyl, 2,4-dioxo-1,2,3,4-tetrahydro-quinazolinyl, 2-oxo-1,2-dihydro-quinoxalinyl, 3-oxo-1,2,3,4-tetrahydro-quinoxalinyl, 2,3-dioxo-1,2,3,4-tetrahydro-quinoxalinyl, 1-oxo-1,2-dihydro-phthalazinyl, 1,4-dioxo-1,2,3,4-tetrahydro-phthalazinyl, chromanyl, coumarinyl, 2,3-dihydro-benzo[1,4]dioxinyl, 3-oxo-3,4-dihydro-benzo[1,4]oxazinyl, and tetrazolyl,

and wherein the above-mentioned (het)aryl groups may optionally be substituted with one to three R^{10} which may be identical or different;

R^{10} is selected independently of each other from the group R^{10a} consisting of halogen, C_{1-3}-alkyl, difluoromethyl, trifluoromethyl, cyano, aminocarbonyl, C_{1-3}-alkylaminocarbonyl, di-(C_{1-3}-alkyl)-aminocarbonyl, carboxy, C_{1-4}-alkyloxycarbonyl, nitro, amino, C_{1-3}-alkylamino, di-(C_{1-3}-alkyl)amino, acetylamino, methylsulfonylamino, hydroxy, C_{1-3}-alkyloxy, difluoromethoxy, trifluoromethoxy, methylsulfanyl, methylsulfinyl, methylsulfonyl, aminosulfonyl and phenyl,
wherein the phenyl-group may optionally be substituted with 1 or 2 substituents independently of each other selected from fluorine, methyl, methoxy, cyano, and hydroxy;

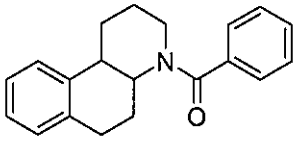
m denotes 0 or 1;

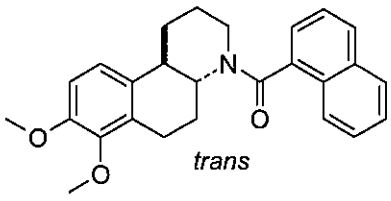
and wherein the aliphatic part of the tricyclic core structure of general formula **I** is substituted with one or two different or identical groups

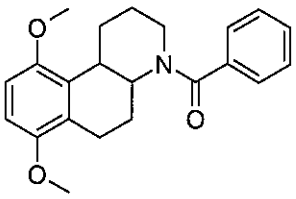
R^{8} selected independently of each other from the group R^{8a} consisting of hydrogen, methyl, and ethyl;

the tautomers thereof, the stereoisomers thereof, the mixtures thereof, or the salts thereof,

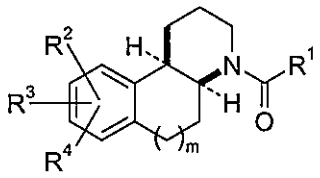
while the following compounds are excluded:







2. Compounds of formula I.a according to claim 1

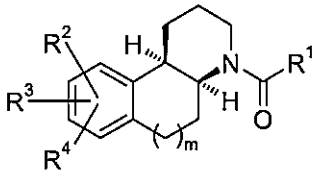


I.a

,

or a salt, mixture or tautomer thereof; wherein the piperidine substructure and the tetraline (m=1) or indane (m=0) substructure form a *cis* configured tricyclic core structure.

3. Compounds of formula I.b according to claim 2



I.b

,

or a salt, mixture or tautomer thereof; wherein the tricyclic core structure is *R* configured at C-10b (for m=1)/C-4a (for m=0) and *S* configured at C-4a (for m=1)/C-9a (for m=0).

4. Compounds according to claim 1, wherein m is 0.

5. Compounds according to claim 4, wherein

R^1 is selected from the group R^{1b} consisting of

phenyl, naphthyl, pyrrolyl, furanyl, thienyl, pyridyl, indolyl, benzofuranyl, benzothiophenyl, quinolinyl, isoquinolinyl,

wherein in the pyrrolyl, furanyl, thienyl, and pyridyl group optionally 1 CH group may be replaced by N, and wherein in the indolyl, benzofuranyl, benzothiophenyl, quinolinyl, and isoquinolinyl groups optionally 1 or 2 CH groups may be replaced by N,

indanyl, 2,3-dihydro-indolyl, 2-oxo-2,3-dihydro-indolyl, 2,3-dihydro-benzofuranyl, 2-oxo-2,3-dihydro-benzoimidazolyl, 2-oxo-2,3-dihydro-benzothiazolyl, benzo[1,3]dioxolyl, 1,2,3,4-tetrahydronaphthyl, 1,2,3,4-tetrahydroquinolinyl, 1,2,3,4-tetrahydroisoquinolinyl, 2-oxo-1,2-dihydro-quinoxalinyl, 3-oxo-1,2,3,4-tetrahydro-quinoxalinyl, chromanyl, and imidazo[1,2-a]pyridinyl,

wherein the members of the group R^{1b} are attached to the carbonyl group in formula I via an aromatic carbon atom and

wherein the members of the group R^{1b} may optionally be substituted with one R^5, one R^6, and/or one R^7, provided that in case R^1 is a phenyl group, the substituents R^5, R^6, and/or R^7 are not attached to the carbon atoms next to the carbon atom which is attached to the carbonyl group in formula I.

6. Compounds according to claim 4, wherein

R^1 is selected from the group R^{1f} consisting of

benzimidazol-5-yl, 6-methyl-benzimidazol-5-yl and 7-methyl-benzimidazol-5-yl.

7. Compounds according to claim 5, wherein

R^2 is selected from the group R^{2b} consisting of

hydrogen, halogen, (het)aryl, cyano, nitro, amino, hydroxy, C_{2-6}-alkynyl, C_{1-6}-alkyl and C_{3-6}-cycloalkyl,

wherein in the C_{1-6}-alkyl and C_{3-6}-cycloalkyl group one CH_2 group may optionally be replaced by CO or SO_2, one CH_2 group optionally by O or NR^N, and one CH group optionally by N, and wherein both of these groups may optionally be mono- or polyfluorinated and optionally mono- or independently of each other disubstituted with

chlorine, C_{1-3}-alkyl, cyano, (het)aryl, amino, C_{1-3}-alkylamino, di-(C_{1-3}-alkyl)-amino, hydroxy, C_{1-3}-alkyloxy, (het)aryloxy, C_{1-3}-alkylsulfanyl, C_{1-3}-alkylsulfinyl, and/or C_{3-6}-cycloalkyl, wherein in the C_{3-6}-cycloalkyl group one or two CH_2 groups may optionally be replaced independently of each other by carbonyl, O or NR^N, and one CH group optionally by N, and which may optionally be mono- or independently disubstituted with fluorine or C_{1-3}-alkyl.

8. Compounds according to claim 7, wherein

R^3, R^4 are selected independently of each other from the group $R^{3/4b}$ consisting of hydrogen, fluorine, chlorine, C_{1-3}-alkyl, trifluoromethyl, cyano, hydroxy, and C_{1-3}-alkyloxy, or

$R^{3/4b}$ denotes R^3 and R^4 that are attached to adjacent carbon atoms and joined to form a methylenedioxy or ethylenedioxy group, or, together with the carbon atoms

they are attached, an imidazo, oxazolo, or a thiazolo ring, each of which may optionally be substituted with one or two substituents independently selected from methyl, dimethylamino, hydroxy, and methoxy.

9. Compounds according to claim 8, wherein

R^5 is selected from the group R^{5b} consisting of

fluorine, chlorine, bromine, C_{1-4}-alkyl, C_{3-6}-cycloalkyl-C_{1-3}-alkyl, C_{3-6}-cycloalkyl, (het)aryl-C_{1-3}-alkyl, (het)aryl, cyano-C_{1-3}-alkyl, aminocarbonyl-C_{1-3}-alkyl, C_{1-3}-alkyl-aminocarbonyl-C_{1-3}-alkyl, di-(C_{1-3}-alkyl)-aminocarbonyl-C_{1-3}-alkyl, pyrrolidin-1-yl-carbonyl-C_{1-3}-alkyl, piperidin-1-yl-carbonyl-C_{1-3}-alkyl, piperazin-1-yl-carbonyl-C_{1-3}-alkyl, 4-(C_{1-3}-alkyl)-piperazin-1-yl-carbonyl-C_{1-3}-alkyl, morpholin-4-yl-carbonyl-C_{1-3}-alkyl, carboxy-C_{1-3}-alkyl, C_{1-3}-alkyloxy-carbonyl-C_{1-3}-alkyl, amino-C_{1-3}-alkyl, C_{1-3}-alkylamino-C_{1-3}-alkyl, di-(C_{1-3}-alkyl)-amino-C_{1-3}-alkyl, pyrrolidin-1-yl-C_{1-3}-alkyl, piperidin-1-yl-C_{1-3}-alkyl, piperazin-1-yl-C_{1-3}-alkyl, 4-(C_{1-3}-alkyl)-piperazin-1-yl-C_{1-3}-alkyl, morpholin-4-yl-C_{1-3}-alkyl, C_{1-3}-alkylcarbonylamino-C_{1-3}-alkyl, (het)arylcarbonylamino-C_{1-3}-alkyl, 2-oxo-pyrrolidin-1-yl-C_{1-3}-alkyl, 2-oxo-piperidin-1-yl-C_{1-3}-alkyl, 2-oxo-piperazin-1-yl-C_{1-3}-alkyl, 3-oxo-piperazin-1-yl-C_{1-3}-alkyl, 2-oxo-4-(C_{1-3}-alkyl)-piperazin-1-yl-C_{1-3}-alkyl, 3-oxo-4-(C_{1-3}-alkyl)-piperazin-1-yl-C_{1-3}-alkyl, 3-oxo-morpholin-4-yl-C_{1-3}-alkyl, hydroxy-C_{1-3}-alkyl, C_{1-3}-alkyloxy-C_{1-3}-alkyl, (het)aryloxy-C_{1-3}-alkyl, difluoromethyl, trifluoromethyl, 2,2,2-trifluoro-1-hydroxyethyl, 2,2,2-trifluoro-1-hydroxy-1-methylethyl, 2,2,2-trifluoro-1-hydroxy-1-(trifluoromethyl)ethyl, cyano, aminocarbonyl, C_{1-3}-alkyl-aminocarbonyl, di-(C_{1-3}-alkyl)-aminocarbonyl, (het)aryl-C_{1-3}-alkylaminocarbonyl, N-(C_{1-3}-alkyl)-(het)aryl-C_{1-3}-alkylaminocarbonyl, (het)arylaminocarbonyl, N-(C_{1-3}-alkyl)-(het)aryl-aminocarbonyl, pyrrolidin-1-yl-carbonyl, piperidin-1-yl-carbonyl, piperazin-1-yl-carbonyl, 4-(C_{1-3}-alkyl)-piperazin-1-yl-carbonyl, morpholin-4-yl-carbonyl, carboxy, C_{1-3}-alkyloxy-carbonyl, nitro, amino, C_{1-3}-alkylamino, di-(C_{1-3}-alkyl)amino, pyrrolidin-1-yl, piperidin-1-yl, piperazin-1-yl, 4-(C_{1-3}-alkyl)-piperazin-1-yl, 4-(C_{1-3}-alkylcarbonyl)-piperazin-1-yl, 4-(C_{1-3}-alkyloxycarbonyl)-piperazin-1-yl, 4-(C_{1-3}-alkylsulfonyl)-piperazin-1-yl, morpholin-4-yl, C_{1-3}-alkyl-carbonylamino, N-(C_{1-3}-alkyl)-C_{1-3}-alkyl-carbonylamino, (het)arylcarbonylamino,

N-(C_{1-3}-alkyl)-(het)arylcarbonylamino, (het)aryl-C_{1-3}-alkyl-carbonylamino, N-(C_{1-3}-alkyl)-(het)aryl-C_{1-3}-alkyl-carbonylamino, 2-oxo-pyrrolidin-1-yl, 2-oxo-piperidin-1-yl, 2-oxo-piperazin-1-yl, 2-oxo-4-(C_{1-3}-alkyl)-piperazin-1-yl, 3-oxo-piperazin-1-yl, 3-oxo-4-(C_{1-3}-alkyl)-piperazin-1-yl, 3-oxo-morpholin-4-yl, aminocarbonylamino, N-(aminocarbonyl)-C_{1-3}-alkylamino, C_{1-3}-alkyl-amino-carbonylamino, N-(C_{1-3}-alkyl-aminocarbonyl)-C_{1-3}-alkylamino, N-[di-(C_{1-3}-alkyl)aminocarbonyl]-C_{1-3}-alkylamino, di-(C_{1-3}-alkyl)-aminocarbonyl-amino, pyrrolidin-1-yl-carbonylamino, piperidin-1-yl-carbonylamino, piperazin-1-yl-carbonylamino, 4-(C_{1-3}-alkyl)-piperazin-1-yl-carbonylamino, morpholin-4-yl-carbonylamino, C_{1-3}-alkyloxy-carbonylamino, N-(C_{1-3}-alkyl)-C_{1-3}-alkyloxy-carbonylamino, C_{1-3}-alkyl-sulfonylamino, N-(C_{1-3}-alkyl)-C_{1-3}-alkyl-sulfonylamino, (het)arylsulfonylamino, N-(C_{1-3}-alkyl)-(het)arylsulfonylamino, oxo-imidazolidin-1-yl, hydroxy, C_{1-4}-alkyloxy, C_{3-6}-cycloalkyl-C_{1-3}-alkyloxy, (het)aryl-C_{1-3}-alkyloxy, C_{3-6}-cycloalkyloxy, (het)aryloxy, cyano-C_{1-3}-alkyloxy, aminocarbonyl-C_{1-3}-alkyloxy, C_{1-3}-alkyl-aminocarbonyl-C_{1-3}-alkyloxy, di-(C_{1-3}-alkyl)-aminocarbonyl-C_{1-3}-alkyloxy, pyrrolidin-1-yl-carbonyl-C_{1-3}-alkyloxy, piperidin-1-yl-carbonyl-C_{1-3}-alkyloxy, piperazin-1-yl-carbonyl-C_{1-3}-alkyloxy, 4-(C_{1-3}-alkyl)-piperazin-1-yl-carbonyl-C_{1-3}-alkyloxy, morpholin-4-yl-carbonyl-C_{1-3}-alkyloxy, carboxy-C_{1-3}-alkyloxy, C_{1-3}-alkyloxy-carbonyl-C_{1-3}-alkyloxy, amino-C_{1-3}-alkyloxy, C_{1-3}-alkylamino-C_{1-3}-alkyloxy, di-(C_{1-3}-alkyl)-amino-C_{1-3}-alkyloxy, pyrrolidin-1-yl-C_{1-3}-alkyloxy, piperidin-1-yl-C_{1-3}-alkyloxy, piperazin-1-yl-C_{1-3}-alkyloxy, 4-(C_{1-3}-alkyl)-piperazin-1-yl-C_{1-3}-alkyloxy, morpholin-4-yl-C_{1-3}-alkyloxy, 2-oxo-pyrrolidin-1-yl-C_{1-3}-alkyloxy, 2-oxo-piperidin-1-yl-C_{1-3}-alkyloxy, 2-oxo-piperazin-1-yl-C_{1-3}-alkyloxy, 3-oxo-piperazin-1-yl-C_{1-3}-alkyloxy, 2-oxo-4-(C_{1-3}-alkyl)-piperazin-1-yl-C_{1-3}-alkyloxy, 3-oxo-4-(C_{1-3}-alkyl)-piperazin-1-yl-C_{1-3}-alkyloxy, 3-oxo-morpholin-4-yl-C_{1-3}-alkyloxy,
hydroxy-C_{1-3}-alkyloxy, C_{1-3}-alkyloxy-C_{1-3}-alkyloxy, tetrahydrofuran-3-yl-oxy, tetrahydropyran-3-yl-oxy, tetrahydropyran-4-yl-oxy, tetrahydrofuranyl-C_{1-3}-alkyloxy, tetrahydropyranyl-C_{1-3}-alkyloxy, difluoromethoxy, trifluoromethoxy, C_{1-3}-alkylsulfanyl-C_{1-3}-alkyloxy, C_{1-3}-alkylsulfinyl-C_{1-3}-alkyloxy, C_{1-3}-alkylsulfonyl-C_{1-3}-alkyloxy, C_{1-3}-alkylsulfonyl, (het)arylsulfonyl, aminosulfonyl, C_{1-3}-alkyl-aminosulfonyl, di-(C_{1-3}-alkyl)-aminosulfonyl, pyrrolidin-1-yl-sulfonyl, piperidin-1-

yl-sulfonyl, morpholin-4-yl-sulfonyl, piperazin-1-yl-sulfonyl, and 4-(C_{1-3}-alkyl)-piperazin-1-yl-sulfonyl,

wherein the above-mentioned term (het)aryl is defined as hereinbefore or hereinafter.

10. Compounds according to claim 9, wherein

R^6, R^7 are selected independently of each other from the group $R^{6/7b}$ consisting of fluorine, chlorine, bromine, C_{1-3}-alkyl, C_{2-3}-alkynyl, trifluoromethyl, hydroxy, C_{1-3}-alkyloxy, and cyano, and/or

$R^{6/7b}$ denotes one R^6 and R^7 that are attached to adjacent carbon atoms and joined to form a methylenedioxy, difluoromethylenedioxy, ethylenedioxy, or C_{3-5}-alkylene group.

11. Compounds according to claim 10, wherein

R^{10} is selected independently of each other from the group R^{10b} consisting of fluorine, chlorine, bromine, C_{1-3}-alkyl, phenyl, difluoromethyl, trifluoromethyl, cyano, aminocarbonyl, C_{1-3}-alkylaminocarbonyl, di-(C_{1-3}-alkyl)-aminocarbonyl, carboxy, C_{1-4}-alkyloxycarbonyl, nitro, amino, acetylamino, methylsulfonylamino, hydroxy, C_{1-3}-alkyloxy, difluoromethoxy, trifluoromethoxy, methylsulfanyl, methylsulfinyl, methylsulfonyl, and aminosulfonyl.

12. Compounds according to claim 11, wherein

R^N is selected independently of each other from the group R^{Nb} consisting of hydrogen, C_{1-6}-alkyl, C_{3-6}-cycloalkyl, C_{3-6}-alkenyl, phenyl, C_{1-4}-alkylcarbonyl, phenylcarbonyl, C_{1-3}-alkylaminocarbonyl, phenylaminocarbonyl, C_{1-4}-alkyloxycarbonyl, C_{1-4}-alkylsulfonyl, and phenylsulfonyl,

wherein the C_{1-6}-alkyl group optionally may be mono- or polysubstituted with fluorine and optionally monosubstituted with phenyl, cyano, aminocarbonyl, C_{1-3}-alkylaminocarbonyl, di-(C_{1-3}-alkyl)aminocarbonyl, carboxy, C_{1-4}-alkoxycarbonyl, C_{1-4}-alkylcarbonylamino, hydroxy, or C_{1-4}-alkoxy.

13. Compounds according to claim 12, wherein

R^8 is selected independently of each other from the group R^{8b} consisting of hydrogen and methyl.

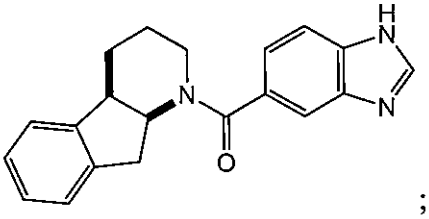
14. Pharmaceutical compositions containing at least one compound according to claim 1, or a pharmaceutically acceptable salt or a tautomer thereof, together with one or more pharmaceutically acceptable carriers.

15. Compounds of formula I according to claim 1, wherein
R^1 is benzimidazol-5-yl, 6-methyl-benzimidazol-5-yl or 7-methyl-benzimidazol-5-yl;
R^2 is hydrogen or cyano;
R^3, R^4 are independently selected from hydrogen and fluorine; and
m is 0.

16. Compounds of formula I.a according to claim 2, wherein
R^1 is benzimidazol-5-yl, 6-methyl-benzimidazol-5-yl or 7-methyl-benzimidazol-5-yl;
R^2 is hydrogen or cyano;
R^3, R^4 are independently selected from hydrogen and fluorine; and
m is 0.

17. Compounds of formula I.b according to claim 3, wherein
R^1 is benzimidazol-5-yl, 6-methyl-benzimidazol-5-yl or 7-methyl-benzimidazol-5-yl;
R^2 is hydrogen or cyano;
R^3, R^4 are independently selected from hydrogen and fluorine; and
m is 0.

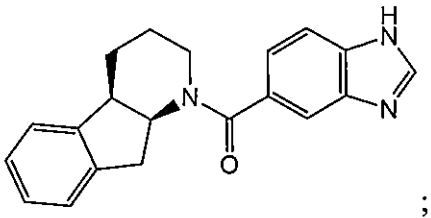
18. A compound of the formula



;

or a pharmaceutically acceptable salt or a tautomer thereof.

19. The compound of claim 18, wherein the compound is of formula

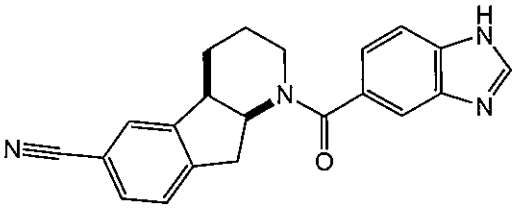


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or a pharmaceutically acceptable salt or a tautomer thereof.

20. A pharmaceutical composition comprising: i) one or more pharmaceutically acceptable carriers; and ii) a compound of claim 19, or a pharmaceutically acceptable salt or a tautomer thereof.

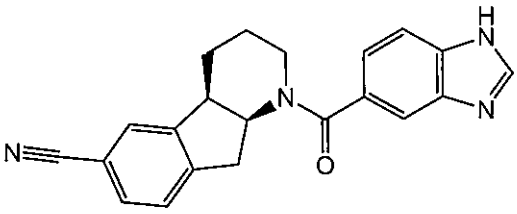
21. A compound of the formula



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or a pharmaceutically acceptable salt or a tautomer thereof.

22. The compound of claim 21, wherein the compound is of the formula

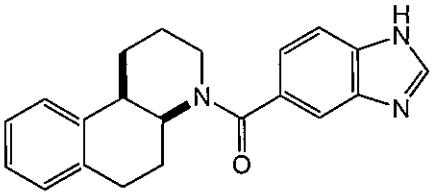


;

or a pharmaceutically acceptable salt or a tautomer thereof.

23. A pharmaceutical composition comprising: i) one or more pharmaceutically acceptable carriers; and ii) the compound of claim 22, or a pharmaceutically acceptable salt or a tautomer thereof.

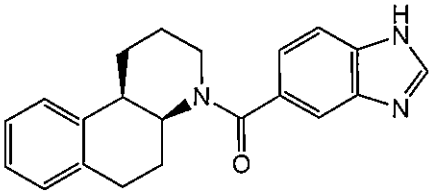
24. A compound of the formula



;

or a pharmaceutically acceptable salt or a tautomer thereof.

25. The compound of claim 24, wherein the compound is of the formula



;

or a pharmaceutically acceptable salt or a tautomer thereof.

26. A pharmaceutical composition comprising: i) one or more pharmaceutically acceptable carriers; and ii) the compound of claim 25, or a pharmaceutically acceptable salt or a tautomer thereof.