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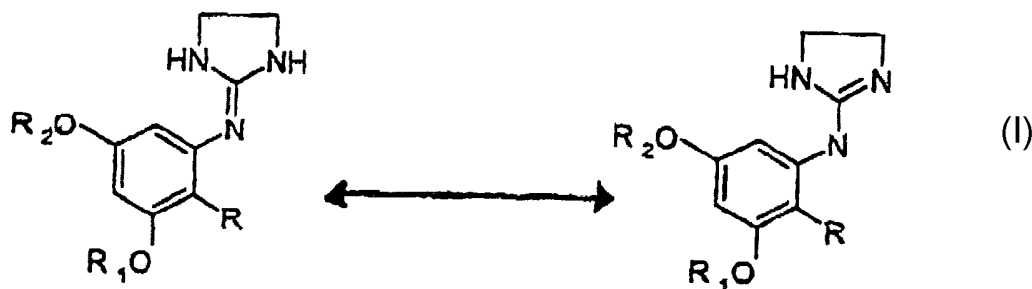
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(54) Title: 2'-HALO-3',5'-DIALKOXYPHEN-1'-YL-IMINO-2-IMIDAZOLIDINE DERIVATIVES AND THE USE THEREOF FOR THE TREATMENT OF URINARY INCONTINENCE



(57) Abstract: The present invention relates to 2'-halo-3',5'-dialkoxyphenyl-imino-2-imidazolidine, the tautomeric 2'-halo-3',5'-dialkoxyanilino-2-imidazoline and/or the pharmacologically acceptable salts thereof and their use as pharmaceutical compositions, in the treatment of urinary incontinence (I).

2'-HALO-3', 5'-DIALKOXYPHEN-1'-YL-IMINO-2-IMIDAZOLIDINE DERIVATIVES AND THE
USE THEREOF FOR THE TREATMENT OF URINARY INCONTINENCE

The present invention relates to 2'-halo-3',5'-dialkoxyphen-1'-yl-imino-2-
5 imidazolidine, the tautomeric 2'-halo-3',5'-dialkoxyanilino-2-imidazolines and/or
the pharmacologically acceptable salts thereof and their use as pharmaceutical
compositions, particularly for treating urinary incontinence.

Prior art:

10 Numerous examples of the category of phenylimino-imidazoles and –
imidazolidines are known. The best known is possibly clonidine, 2',6'-
dichlorophen-1'-yl-imino-2-imidazolidine.

With regard to the compound according to the invention, the number of structurally
similar examples known is limited by their nature.

15

DE 2220906 describes a category of phenylimino-imidazoles of therapeutic benefit
to which the compound according to the invention are structurally related. The
compounds according to the invention or their properties in relation to the
treatment of urinary incontinence are not disclosed.

20

JP 48-76870 discloses a category of phenylimino-imidazoles to which the
compound according to the invention are structurally related. The compounds
described therein count as vasoconstrictors and hypotensive agents. Specifically,
2-(phenylamino)-2-imidazoline and clonidine are disclosed.

25 The compounds according to the invention or their properties in relation to the
treatment of urinary incontinence are not disclosed.

WO 96/32939, to which reference is hereby expressly made in its entirety,
discloses a category of phenylimino-imidazolidines for the treatment of urinary
30 incontinence to which the compound according to the invention are structurally
related. The compounds according to the invention are not disclosed.

EP0887346 discloses another class of phenylimino-imidazolidines, phenylmethylen-imidazolidines, phenyloxymethylen-imidazolidines in that the phenyle-group mandatorily is substituted by an ureido ($RR'NCONR''-$), an sulfamoylamino-group ($RR'NSO_2NR''-$) or sulfonamido- ($RR'NSO_2-$)-group.

- 5 These compounds shall have an alpha 1L agonistic effect.

US4244957 discloses phenyliminoimidazolidines which are substituted at one of imiazolidine-nitrogen atom for treating hypertension. The compounds of the present invention are not disclosed.

10

DE2521709 discloses phenyliminoimidazolidines which again are substituted at one of imiazolidine-nitrogen atom for treating hypotension. The compounds of the present invention are not disclosed.

- 15 EP0202461 discloses phenyliminoimidazolidines which are substituted at an imino-nitrogen atom for treating heart-diseases. The compounds of the present invention are not disclosed.

- FR2208671 discloses phenyliminoimidazolidines which are substituted at the
20 imino-nitrogen atom and / or an imiazolidine-nitrogen atom which shall have hypotensive, sedative, anagetic and antisecretoric effect. The compounds of the present invention are not disclosed.

- For the sake of completeness a search report also made reference to EP0902218,
25 which however does not deal with chemical compounds .

- In the context of the present invention, by incontinence is meant the involuntary release of urine, i.e. weakness of the urethral contraction. The various forms of urinary incontinence include urge incontinence, reflex incontinence, overflow
30 incontinence and stress or load incontinence. The most common forms of urinary incontinence include load incontinence or stress incontinence. These affect women in particular after more or less difficult childbirth. The reason for this is that

pregnancy and childbirth can easily lead to weakening of the pelvic floor. Other causes of incontinence may be found, for example, in damage to the nerves of the pelvic floor, a congenitally short urinary tract or damage to the sphincter muscle.

5 Description of the invention

It has now surprisingly been found that the compounds of formula I have an outstanding agonistic effect on alpha-1L-receptors. The substances have a highly selective effect on the urethra and prevents urinary incontinence.

- 10 One aspect of the present invention is therefore to develop a drug with which urinary incontinence can be treated better, i.e more selectively.

Another aspect of the invention consists in developing drugs which act on the contracting mechanisms of the urethra without seriously affecting other organs

- 15 such as peripheral blood vessels.

Another objective is to develop a non-toxic drug with few side effects.

Overall, therefore, the aim of the present invention is to find an active substance

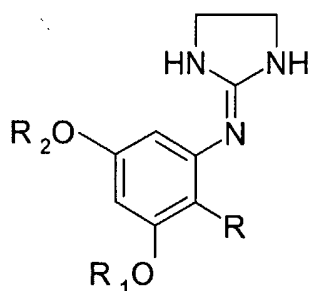
- 20 with one or more of the abovementioned profiles and to develop a suitable medicament from it.

Detailed description of the invention

The compounds according to the invention are represented by the following structure (formula I):

Formula I:

5



whereby

R stands for F, Cl, Br, CF₃, CH₂F or CHF₂,

- 10 R₁ and R₂ independently of each other may be any C₁ to C₆-alkyl, like methyl (Me), ethyl (Et), propyl (Pr), isopropyl (iPr), 1-butyl (Bu), 2-butyl (2-Bu), *tert*.butyl (tBu), pentyl (Pen), hexyl (Hex) etc.

Preferred are compounds with

- 15 R being F, Cl, Br or CF₃ and
R₁ and R₂ independently of each being an unbranched C₁ to C₆-alkyl.

More preferred are compounds with

- R being Cl, Br or CF₃ and
20 R₁ and R₂ both being the same unbranched C₁ to C₄-alkyl.

Even more preferred are compounds with

- R being Cl or Br and
R₁ and R₂ both being methyl, ethyl or propyl.

25

Most preferred are compounds with

R being Cl and

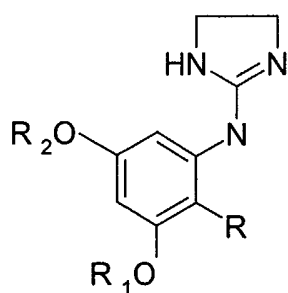
R₁ and R₂ both being methyl or ethyl.

In the context of the present invention these compounds represented by formula I are named as 2'-halo-3',5'-dialkoxyphen-1'-yl-imino-2- imidazolidine. In the context
 5 of the present invention the term "imidazolidine" stands for 4,5-dihydroimidazole, whereby one starts counting by one nitrogen atom and goes to the next nitrogen atom by passing the one-carbon-bridge. In case of any conflicts between a representation by a structure-formula or by a name, the representation by the structure formula shall prevail.

10

Likewise, the compounds may also be present in the tautomeric form according to Formula II:

Formula II:



15 whereby the substituents R, R₁ and R₂, are as defined above.

In the context of the present invention these compounds represented by formula II are named as 2'-halo-3',5'-dialkoxyphen-1'-yl-amino-2- imidazolines (2'-halo-3',5'-dialkoxyanilino-2-imidazolines). In case of any conflicts between a representation
 20 by a structure-formula or by a name, the representation by the structure formula shall prevail.

Among these compounds the preferred compounds are
 2'-chloro-3',5'-dimethoxyphen-1'-yl-imino-2- imidazolidine
 25 (based on formula I R = Cl, R₁ = Me, R₂ = Me),
 2'-chloro-3',5'-diethoxyphen-1'-yl-imino-2- imidazolidine,
 (based on formula I R = Cl, R₁ = Et, R₂ = Et),

2'-chloro-3',5'-dipropoxyphen-1'-yl-imino-2- imidazolidine,

(based on formula I R = Cl, R₁ = Pr, R₂ = Pr),

2'-bromo-3',5'-dimethoxyphen-1'-yl-imino-2- imidazolidine,

(based on formula I R = Br, R₁ = Me, R₂ = Me),

5 2'-bromo-3',5'-diethoxyphen-1'-yl-imino-2- imidazolidine,

(based on formula I R = Br, R₁ = Et, R₂ = Et),

2'-bromo-3',5'-dipropoxyphen-1'-yl-imino-2- imidazolidine,

(based on formula I R = Br, R₁ = Pr, R₂ = Pr),

the tautomeric forms of any of these compounds according to formula II or

10 pharmacologically acceptable salts of any of the two tautomeric forms of these compounds.

Among these compounds are more preferred

15 2'-chloro-3',5'-dimethoxyphen-1'-yl-imino-2- imidazolidine,

(based on formula I R = Cl, R₁ = Me, R₂ = Me),

2'-bromo-3',5'-dimethoxyphen-1'-yl-imino-2- imidazolidine,

(based on formula I R = Br, R₁ = Me, R₂ = Me),

the tautomeric forms of these compounds according to formula II or

20 pharmacologically acceptable salts of any of the two tautomeric forms of these compounds.

Most preferred is

2'-chloro-3',5'-dimethoxyphen-1'-yl-imino-2- imidazolidine, its tautomeric form 2'-

25 chloro-3',5'-dimethoxyanilino-2-imidazoline or a pharmacologically acceptable salts thereof.

The present description does not distinguish between the two described

30 tautomeric structures according to formula I or II as they are considered to be equivalent. The present description also does not distinguish between the free base of the compounds and a pharmacologically acceptable acid addition salt

thereof unless otherwise expressly stated. As a consequence thereof, if one of the compounds is disclosed by name of structure formula, the corresponding tautomeric form and pharmacologically acceptable salts of both tautomeric forms are meant as well unless otherwise expressly stated.

5

The substances may occur both as a free base or as an acid addition salt. Examples of such salts are inorganic acids such as hydrochloric acid, hydrobromic acid, sulphuric acid, phosphoric acid or organic acids such as acetic acid, citric acid, tartaric acid, malic acid, succinic acid, fumaric acid, p-toluenesulphonic acid, benzenesulphonic acid, methanesulphonic acid, lactic acid, ascorbic acid and others.

10

Preferably, the compounds according to the invention are used in the form of the hydrochloric acid salt.

15 The compounds according to the invention may be administered as a medicament by oral route, by inhalation, intranasally, intravenously, by subcutaneous, intramuscular, transdermally, vaginally or as a suppository. Oral administration is preferred.

20 The compounds may be administered on their own or in conjunction with other suitable active substances.

To determine the optimum dose of the active substance for urinary incontinence, various framework conditions have to be taken into account such as, for example, 25 the age and body weight of the patient, the nature and stage of the disease.

The preferred dose for humans is between 0.001 mg and 1 g per day, preferably between 0.001 mg and 100 mg, and is most preferably between 0.01mg and 10 mg.

30

In some cases a smaller amount may be sufficient, whereas in other cases a larger total amount may be needed.

The total daily dose may be taken in one go or in several portions, depending on the therapeutic regimen. The therapeutic regimen may also prescribe intervals of more than one day between the doses.

5

The active substance according to the invention may be administered orally in various formulations, e.g. as a solid, in liquid form, as a powder, in the form of tablets, as a coated tablet, sugar-coated tablets, as an oral disintegrating tablet, as a sublingual tablet, in a capsule, in granulated form, as a suspension, solution,
10 emulsion, elixir or syrup, in the form of drops or in other forms.

A powder may be prepared, for example, by grinding the particles of active substance to a suitable size.

Dilute powders may be prepared, for example, by finely grinding the powdered
15 substance with a non-toxic carrier material such as lactose, for example, and producing it as a powder. Other carrier materials suitable for this purpose are other carbohydrates such as starch or mannitol. These powders may possibly contain flavourings, preservatives, dispersing agents, colourings and other pharmaceutical excipients.

20

Capsules may be produced, starting from a powder of the type mentioned above or other powders, which are placed into a capsule, preferably a gelatine capsule.

It is also possible to introduce lubricants known from the prior art into the capsule
25 or to use them to seal the two halves of the capsule. The dissolution rate of a capsule can be increased by the addition of disintegrant or solubilising substances, such as, for example, carboxymethylcellulose, carboxymethylcellulose calcium, lowly-substituted hydroxypropylcellulose, calcium carbonate, sodium carbonate, sodium carboxymethyl starch, crospovidone,
30 croscarmellose sodium and other substances. The dissolution rate of a capsule can be also controlled by processing the contents into granulated forms, pellets, or other forms, by addition of binders, dissolution-control agents, or other excipients.

The active substance may be contained in the capsule not only as a solid but also in solution or in suspension, e.g. in vegetable oil, polyethyleneglycol or glycerol, using surfactants, etc.

- 5 Tablets (including vaginal tablets) may be prepared in which the powdered mixture is processed to form granules, mixed with other substances if necessary and then further compressed, for example. The tablets may contain various excipients, e.g. starches, lactose, sucrose, glucose, sodium chloride, urea for soluble or injectable tablets, amylose, various types of cellulose as described above, etc.
- 10 Glycerol or starch may be added, for example, as moisture retaining agents.

The disintegrants used may be, for example, starch, alginic acid, calcium alginate, pectic acid, powdered agar-agar, formaldehyde gelatine, calcium carbonate, calcium phosphate, sodium bicarbonate, magnesium peroxide or amylose.

15

Agents to counter disintegration or dissolving which may be used include, for example, cane sugar, stearin, solid paraffin (preferably with a melting point in the range from 50-52°C), cocoa butter and hydrogenated fats.

- 20 Suitable resorption accelerators include *inter alia* quaternary ammonium compounds, sodium laurylsulphate, saponins.

Ether, for example, may be used as a binder distributor while cetylalcohol, glycerol monostearate, starch, lactose, wetting agents (e.g. aerosol OT, Pluronic,

- 25 Tween) and others may be used as hydrophilising agents or as breakdown accelerators.

Moreover, the following may be used as tablet excipients in general: Aerosil, silicic acids, silicon dioxide, Aerosol OT ethylcellulose, Amberlite resin, XE-88, Amijel,

- 30 Amisterol, amylose, Avicel microcrystalline cellulose, bentonite, calcium sulphate, Carbowax 4000 & 6000, carrageenin, castor wax, cellulose, microcrystalline cellulose, dextrane, dextrin, pharmaceutical tablet base, kaolin, spray dried

lactose (USP), Lactosil, magnesium stearate, mannitol, granular mannitol N. F. methylcellulose, Miglyol 812 neutral oil, powdered milk, lactose, nal-tab, Nepol-Amylose, Pöfizer crystalline sorbitol, Plasdone, polyethyleneglycols, polyvinylpyrrolidone, Précirol, calves' foot oil (hydrogenated), melting tablet base, 5 silicones, Stabiline, Sta-rx 1500, Syloid, Waldhof tablet base, Tablettol, Talcum cetylalum and stearatum, Tego metal soaps, glucose sodium carboxymethyl starch, crospovidone, croscarmellose sodium, hydroxypropylcellulose, hydroxypropylmethylcellulose, and tylose. The tableting excipient K (M25) is particularly suitable, which also meets the requirements of the following 10 Pharmacopoeias: DAB, Ph, Eur, BP, JP and NF.

To achieve delayed release, agents such as ethyl cellulose, carboxypolymethylene, hydroxypropylmethylcellulose, carboxymethyl cellulose, methacrylic acid copolymer, cellulose acetate phthalate or polyvinyl acetate may 15 be used.

Other excipients from the prior art may also be used.

The tablets may also consist of several layers. Coated tablets may be prepared 20 accordingly by coating cores produced analogously to the tablets with substances normally used for tablet coatings, for example polyvinylpyrrolidone or shellac, gum arabic, talc, titanium dioxide or sugar. To achieve delayed release or prevent incompatibilities the core may also consist of a number of layers. Similarly the tablet coating may consist of a number of layers to achieve delayed release, 25 possibly using the excipients mentioned above for the tablets.

The tablets may be prepared for example by direct compression.

Other orally administred formulations may also be prepared, such as suspensions, 30 solutions, emulsions, syrups, elixirs, etc. If desired, the compound may be microencapsulated.

Syrups containing the active substances or combinations thereof according to the invention may additionally contain a sweetener such as saccharine, cyclamate, 35 glycerol or sugar and a flavour enhancer, e.g. a flavouring such as vanilline or orange extract. They may also contain suspension adjuvants or thickeners such as sodium carboxymethyl cellulose, wetting agents such as, for example,

condensation products of fatty alcohols with ethylene oxide, or preservatives such as p-hydroxybenzoates.

The compound may be administered parenterally by dissolving, emulsifying or
5 suspending it in a liquid and injecting it by subcutaneous, intramuscular or
intravenous route. Suitable solvents include, for example, water or oily media.

Injectable solutions are prepared in the usual way, e.g. with the addition of
preservatives such as hydroxybenzoates or stabilisers such as complexones, and
10 transferred into injection vials or ampoules.

To prepare suppositories, the compound may be formulated with low-melting and
water-soluble or water-insoluble materials such as polyethyleneglycol, cocoa
butter, higher esters (e.g. myristyl palmitate) or mixtures thereof.
15

Examples

1. Metabolism

To determine the metabolism the enzyme CYP2D6 was reacted with

- 5 2'-Chloro-3',5'-dimethoxyphen-1'-yl-imino-2-imidazolidine. After 30 minutes 2.4 % of the substance had been broken down by the enzyme.

2. Efficacy and selectivity

The efficacy and selectivity of 2'-Chloro-3',5'-dimethoxyphen-1'-yl-imino-2-

- 10 imidazolidine is determined as follows:

activity in the dog	activity on human urethra	selectivity in the dog
65	66.2	0.64

The maximum contraction in the isolated dog femoral artery and the human urethra are given as percentages of contraction compared with noradrenaline.

15

Selectivity in the dog is the difference between the percentage contraction on the dog femoral artery at 10^{-5} M and the percentage contraction on the dog carotid artery at 10^{-5} M, which reveal uroselectivity.

- 20 3. a. Preparation of 2'-Chloro-3',5'-dimethoxyphen-1'-yl-imino-2-imidazolidine free base

Step 1

- 50 g of 3,5-Dimethoxyaniline were dissolved in 250 ml of toluene. 32.4 ml of acetic anhydride were slowly added. The solution was stirred at r.t. overnight. Petrol ether was then added and the product was filtered, washed and dried.
- 63.5 g of N-Acetoxy-3,5-dimethoxyaniline were obtained as a solid, m.p. 163-165°C.

Step 2

- 5 56.5 g of N-Acetoxy-3,5-dimethoxyaniline were dissolved in 200 ml of acetic acid. The solution was cooled to 0°C and 150 ml of a 32% hydrogen chloride solution were added. A solution of 12.75 g of sodium chlorate in 15 ml of water were added dropwise. A viscous ochre yellow paste was formed which was further reacted over 0.5 h at 2°C, then filtered, washed with water and dried.
- 10 33,0 g of N-Acetoxy-2-chloro-3,5-dimethoxyaniline were obtained as an ochre yellow solid, m.p. 117-118°C.

Step 3

- 33,0 g of N-Acetoxy-2-chloro-3,5-dimethoxyaniline were dissolved in 2 l of ethanol
15 and refluxed with 400 ml of potassium hydroxide. After 2 h 500 ml water were added and the ethanol was evaporated under reduced pressure. The aqueous phase was then extracted with 2x250 ml of ether. The ethereal phase was dried over magnesium sulfate and concentrated.

28 g of 2-chloro-3,5-dimethoxy-aniline were obtained

20

Step 4

- 14.4 g of potassium isocyanate were dissolved at 10°C in 450 ml of acetone. 14.2 ml of benzoylchloride were added dropwise carefully. The white suspension was refluxed 10 minutes and then cooled again to 10°C. A solution of 28 g of 2-chloro-
25 3,5-dimethoxyaniline in 300 ml of acetone was then added and the obtained mixture refluxed over 3 h. 700 ml of water with ice were added and the aqueous phase was extracted with 3x600 ml of ethyl acetate. The organic phase was then dried over magnesium sulfate and concentrated. The brown residue was dissolved in 100 ml ethanol and refluxed together with 35 ml of an aqueous solution of
30 potassium hydroxide. After 1 hour, 500 ml of water were added. Ethanol was distilled under reduced pressure. The brown solution was neutralized with 300 ml

of an ammonium chloride solution and the solid which precipitated was filtered, washed with water and dried.

35 g of (2-chloro-3,5-dimethoxy-phenyl)-thiourea were obtained as a brown powder, m.p. 159-162°C

5

Step 5

35 g of (2-chloro-3,5-dimethoxy-phenyl)-thiourea were dissolved in 150 ml of methanol. 6.6 ml of methyl iodide were added dropwise and the mixture was refluxed over 2 h. The solid was then filtered, washed with ether and dissolved
10 again in 110 ml of methanol. 11 ml of ethane-1,2-diamine were added and the mixture refluxed over 8 h. A white powder precipitated which was filtered, washed with methanol, ethyl acetate and ether and dried.

53.3 g of 2'-Chloro-3',5'-dimethoxy-phen-1'-yl-imino-2-imidazolidine were obtained as a white powder, m.p. 204-206°C.

15

3. b. Preparation of 2'-Chloro-3',5'-dimethoxyphen-1'-yl-imino-2-imidazolidine-hydrochloride

2,2 g of 2'-Chloro-3',5'-dimethoxy-1'-yl-imino-2-imidazolidine free base were
20 suspendend in 10 ml methanol in an ultrasound bath. 10 ml of a 1M solution of HCl/Ether were added. Then diethylether was added until formation of a white precipitate. The precipitate was filtered off, washed with ether and dried.

2,5g (95%) 2'-Chloro-3',5'-dimethoxy-1'-yl-imino-2-imidazolidine Hydrochloride
25 were obtained as a white powder; m.p. 203-205°C.

¹H NMR (400 MHz, DMSO-d₆): δ = 10,60 (NH), 8,38 (NH), 6,73 (1H, d, J = 2,7 Hz, aryl-H), 6,64 (1H, d, J = 2,7 Hz, aryl-H), 3,88 (3, s, OCH₃), 3,81 (3H, s, OCH₃), 3,65 (4H, s, Imidazolidine-CH₂). MS m/z 256/258 (100/43) (M+H)⁺

30

Other acid addition salts than the hydrochloride can be prepared by procedures well known in the art.

The other compounds described can be prepared likewise, starting from the corresponding 3,5-Dialkoxyaniline in the first step, followed by analogous

- 5 halogenation as described or other well known halogenation procedures. Steps 3 to 6 follow the procedure as described.

10

4. Pharmaceutical Composition

Example A: Tablets

2'-Chloro-3',5'-dimethoxyphen-1'-yl-amino-imidazolidine 1 mg

in the form of the hydrochloric acid salt

15	Lactose	105 mg
	Microcrystalline cellulose	30 mg
	Corn starch	30 mg
	Povidon	5 mg
	Sodium carboxymethyl starch	5 mg
20	Colloidal silica	3 mg
	<u>Magnesium stearate</u>	<u>1 mg</u>
	Total	180 mg

Preparation: The active substance is mixed with some of the excipients and

- 25 granulated in the usual way. The granules are sieved, combined with the remaining excipients and compressed into tablets weighing 180 mg.

Example B: Ampouless

2'-Chloro-3',5'-dimethoxyphen-1'-yl-amino-imidazolidine 1.0 mg

- 30 in the form of the hydrochloric acid salt

Sodium chloride 18.0 mg

Sufficient water for injection to male up to 2.0 mL

Preparation: The active substance and sodium chloride are dissolved in water for injection and transferred into glass ampoules in an aseptic condition.

5 Example C: Capsules

2'-Chloro-3',5'-dimethoxyphen-1'-yl-amino-imidazolidine 1 mg

in the form of the hydrochloric acid salt

Lactose 178 mg

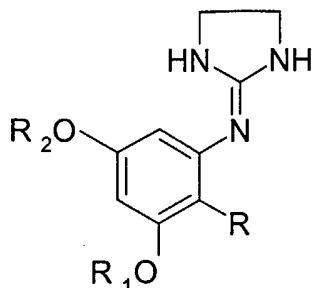
Magnesium stearate 1 mg

10 Total 180 mg

Preparation: The active substance is mixed with the excipients and filled into capsules in the usual way.

Patent Claims

1. A compound according to formula I

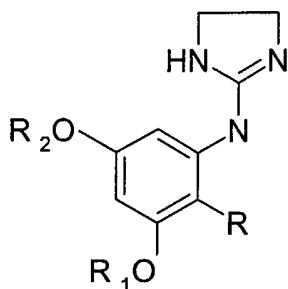


5 with

R is F, Cl, Br, CF_3 , CH_2F or CHF_2 and

R_1 and R_2 independently of each other may be any C_1 to C_6 -alkyl

its tautomeric according to general formula II



10 or a pharmacologically acceptable salt of any of the two tautomers.

2. A compound according to claim 1 with R being F, Cl, Br or CF_3 and R_1 and R_2 independently of each being an unbranched C_1 to C_6 -alkyl.

- 15 3. A compound according to claim 1 with R being Cl, Br or CF_3 and R_1 and R_2 both being the same unbranched C_1 to C_4 -alkyl.

4. A compound according to claim 1 with R being Cl or Br and R_1 and R_2 both being methyl, ethyl or propyl.

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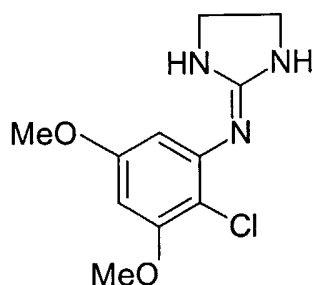
5. A compound according to claim 1 with R being Cl and R_1 and R_2 both being methyl or ethyl.

6. A compound according to claim 1, the compounds being
2'-chloro-3',5'-dimethoxyphen-1'-yl-imino-2- imidazolidine,
2'-chloro-3',5'-diethoxyphen-1'-yl-imino-2- imidazolidine,
5 2'-chloro-3',5'-dipropoxyphen-1'-yl-imino-2- imidazolidine,
2'-bromo-3',5'-dimethoxyphen-1'-yl-imino-2- imidazolidine,
2'-bromo-3',5'-diethoxyphen-1'-yl-imino-2- imidazolidine,
2'-bromo-3',5'-dipropoxyphen-1'-yl-imino-2- imidazolidine a tautomeric
thereof or a pharmacologically acceptable salt thereof.

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7. 2'-Chloro-3',5'-dimethoxyphen-1'-yl-imino-2- imidazolidine represented by
general formula I,

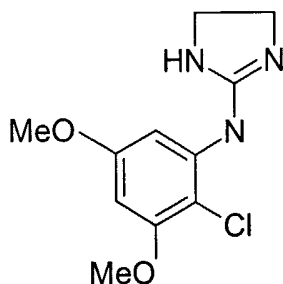
Formula I:



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its tautomeric 2'-chloro-3',5'-dimethoxyanilino-2-imidazoline represented by
general formula II:

Formula II:



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or a pharmacologically acceptable salt of any of the two tautomeres.

8. Compound according to any of claims 1 to 7 according to general formula I or one of the pharmacologically acceptable salts thereof.
9. Compound according to any of claims 1 to 7 according to general formula II or one of the pharmacologically acceptable salts thereof.
10. Compound according to one of claims 1 to 9, characterised in that the pharmacologically acceptable salt is the hydrochloride.
11. Compound according to one of claims 1 to 10 for preparing a medicament, particularly for treating urinary incontinence.
12. Pharmaceutical composition containing a compound according to one of claims 1 to 11.
13. Pharmaceutical composition containing a compound according to one of claims 1 to 11 in an amount of between 0.001 mg and 1 g, preferably between 0.001 mg and 100 mg and most preferably between 0.01 mg and 10 mg.
14. Pharmaceutical composition according to claim 12 or 13 in the form of a tablet, or a capsule.
15. Use of a pharmaceutical composition according to claim 12 or 13 for oral administration.
16. Use of a pharmaceutical composition according to claim 12 or 13 for transdermal, parenteral, rectal or vaginal administration.
17. Use of a compound according to one of claims 1 to 11 or a pharmaceutical preparation according to one of claims 12 to 16 for preparing a medicament for treating urinary incontinence.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP 02/14299

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07D233/50 A61K31/415 A61P13/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07D A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 96 32939 A (BOEHRINGER INGELHEIM KG ;ESSER FRANZ (DE); STAEHLE HELMUT (DE); LU) 24 October 1996 (1996-10-24) cited in the application the whole document ---	1-17
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Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents:

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- *O* document referring to an oral disclosure, use, exhibition or other means
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- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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- * & * document member of the same patent family

Date of the actual completion of the international search

17 March 2003

Date of mailing of the international search report

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INTERNATIONAL SEARCH REPORT

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