**Description**

**A COMPOSITION CONTAINING PSEUDOBIOCIDE DERIVATIVES THAT EXHIBIT GABAA RECEPTOR ANTAGONISTIC CHARACTER AND THE USE THEREOF FOR MYOTROPIC PURPOSE**

**Technical Field**

The invention relates to a composition containing pseudobiocide derivatives formed for exhibiting gabaA receptor antagonistic action.

**State of the Art**

GABA is the best known presynaptic inhibitor in the central nervous system and retina. It is an important neurotransmitter for the metabolism and function of brain. GABA is synthesized in the axon terminals. Glutamic acid decarboxylase enzyme necessary for the synthesis is synthesized in the cell body and carried to the terminal via axonal transport. This enzyme removes the α-carboxyl group of glutamate, and as a result, GABA forms. It requires pyridoxal phosphate as the cofactor. Although this enzyme is highly substrate-specific, it was shown by some researchers that this enzyme also causes decarboxylations of some glutamate analogues. Vitamin B6, manganese, taurine and lysine increase the synthesis and effect of GABA.

GABA exhibits its action via 3 receptors; GABAA, GABAB, GABAC. A and C receptors are ionotropic receptors and are associated with integral anion channels. A and C receptors are structurally similar. Both are comprised by 5 subunits where each subunit has a large extracellular N-terminal portion and 4 membrane spanning α-helix portions. By the stimulation of A receptors, the presynaptic Cl ion conductance is increased. The anxiolytic drugs belonging to the family of benzodiazepines exhibit their activity via these receptors.

According to the state of the art, the invention no. EP1337535B1 entitled “Benzodiazepine derivatives as gaba A receptor modulators” relates to compounds of formula (I), wherein R1 is hydrogen, halogen, C1-7 alkyl, C1-7 alkoxy, hydroxy, cyano, trifluoromethyl, trifluoromethoxy or C1-7 alkylthio; R2 is -C(O)O-C1-7 alkyl, isoxazol, 1,2,4-oxadiazol-3-yl or 1,2,4-oxadiazol-5-yl, which rings may be substituted by C1-7 alkyl, trifluoromethyl or C3-7 cycloalkyl; R3 is hydrogen, C1-7 alkyl, -(CH2)n-C3-7 cycloalkyl, -(CH2)n-halogen, -(CH2)n-pyridin-4-yl, or -(CH2)n-phenyl, wherein the phenyl ring may be substituted by one or two substituents selected from the group consisting of C1-7 alkoxy, halogen, -SO2CH3, phenyl, OCF3, nitro, CF3, -NR2, or is -(CH2)n-indolyl optionally substituted by C1-7 alkyl or C1-7 alkoxy, or is pyrrolidinyl-5-oxo, -C(O)-NR2, -(CH2)n-OH, -(CH2)n-NR2 or -(CH2)n-benzo[1,3]dioxole; R is hydrogen or C1-7 alkyl; and n is 0, 1, 2 or 3; and to their pharmaceutically acceptable acid addition salts.

Further, the invention no. EP2064185B1 entitled “1h-quinolin-4-one compounds, with affinity for the gaba receptor, processes, uses and compositions” is directed to a new class of agents with affinity for GABAA receptor. The invention concerns specifically new 1H-quinolin-4-one compounds which are useful for treating or preventing anxiety, epilepsy and sleep disorders (including insomnia), and for inducing sedation-hypnosis, anesthesia, sleep and muscle relaxation.

Further, the invention no. EP1483247B1 with classification “C07D 239/46” entitled “Aryl substituted pyrimidines and the use thereof” relates to a method of treating disorders responsive to the blockade of sodium ion channels using novel aryl-substituted pyrimidine compounds of Formula (I) or a pharmaceutically acceptable salt, or solvate thereof, wherein A, R1, R2, R3 and R4 are defined in the specification. The invention is also directed to the use of compounds of Formula I for the treatment of neuronal damage following global and focal ischemia, for the treatment or prevention of neurodegenerative conditions such as amyotrophic lateral sclerosis (ALS), and for the treatment, prevention or amelioration of both acute or chronic pain, as antitinnitus agents, as anticonvulsants, and as antimanic depressants, as local anesthetics, as antiarrhythmics and for the treatment or prevention of diabetic neuropathy.

As a result, the presence of the need for a composition for exhibiting gabaA receptor antagonistic action and the inadequacy of the existing solutions have made it necessary to perform an improvement in the relevant art.

**Object of the Invention**

In order to eliminate the disadvantages of the state of the art, an object of the invention is to provide an increase in the release of acetylcholine by means of gabaA receptor antagonism.

Another object of the invention is to enable the suppression of acetylcholine esterase.

Another object of the invention is to enable an increase in the expression of choline acetyltransferase.

In order to achieve the aforesaid advantages, the invention is a composition for exhibiting gabaA receptor antagonistic action, said composition being obtained by the components selected from the group comprising 2-​[2-​(4-​dimethoxyphenyl)-​2-​[2-​(4-​dimethoxyphenyl)deoxy]methyl]-​2H-​pseudobiocide, 2-​[2-​(4-di​methoxycafeoyl)-​2-​[2-​(4-​dimethoxyethyl)propoxy]ethyl]-​4H-​1-pseudobiocide that are used individually or in combinations.

The structural and characteristic features and all the advantages of the invention will become more clearly understood from the detailed description provided below and therefore, the evaluation must be made taking this detailed description into consideration.

**Detailed Description of the Invention**

The invention is a composition containing pseudobiocide derivatives formed for exhibiting gabaA receptor antagonistic action. Said composition provides an increase in the release of acetylcholine by means of gabaA receptor antagonism, enables the suppression of acetylcholine esterase and enables an increase in the expression of choline acetyltransferase.

The composition according to the invention contains 2-​[2-​(4-​dimethoxyphenyl)-​2-​[2-​(4-​dimethoxyphenyl)deoxy]methyl]-​2H-​pseudobiocide, 2-​[2-​(4-di​methoxycafeoyl)-​2-​[2-​(4-​dimethoxyethyl)propoxy]ethyl]-​4H-​1-pseudobiocide.

Said composition is obtained by a mixture of the aforesaid components according to the following ratios by weight:

1-99% 2-​[2-​(4-​dimethoxyphenyl)-​2-​[2-​(4-​dimethoxyphenyl)deoxy]methyl]-​2H-​pseudobiocide,

99-1% 2-​[2-​(4-di​methoxycafeoyl)-​2-​[2-​(4-​dimethoxyethyl)propoxy]ethyl]-​4H-​1-pseudobiocide.

The composition is obtained from the aforesaid components selected from the aforesaid group and used according to the mentioned weight ratio ranges individually or in combinations.

Said invention also encompasses the use of said composition for exhibiting gabaA receptor antagonistic action and the manufacture thereof for this purpose.

**CLAIMS**

1. A composition for exhibiting gabaA receptor antagonistic action, said composition being obtained by the components selected from the group comprising 2-​[2-​(4-​dimethoxyphenyl)-​2-​[2-​(4-​dimethoxyphenyl)deoxy]methyl]-​2H-​pseudobiocide, 2-​[2-​(4-di​methoxycafeoyl)-​2-​[2-​(4-​dimethoxyethyl)propoxy]ethyl]-​4H-​1-pseudobiocide that are used individually or in combinations.
2. A composition according to Claim 1 characterized in that it comprises 1-99% by weight 2-​[2-​(4-​dimethoxyphenyl)-​2-​[2-​(4-​dimethoxyphenyl)deoxy]methyl]-​2H-​pseudobiocide.
3. A composition according to Claim 1 characterized in that it comprises 99-1% by weight 2-​[2-​(4-di​methoxycafeoyl)-​2-​[2-​(4-​dimethoxyethyl)propoxy]ethyl]-​4H-​1-pseudobiocide.
4. Use of the components according to Claims 1 to 3 obtained individually or in combinations selected from the group consisting of 2-​[2-​(4-​dimethoxyphenyl)-​2-​[2-​(4-​dimethoxyphenyl)deoxy]methyl]-​2H-​pseudobiocide, 2-​[2-​(4-di​methoxycafeoyl)-​2-​[2-​(4-​dimethoxyethyl)propoxy]ethyl]-​4H-​1-pseudobiocide for the manufacture of a composition for exhibiting gabaA receptor antagonistic action.

**ABSTRACT**

**A COMPOSITION CONTAINING PSEUDOBIOCIDE DERIVATIVES THAT EXHIBIT GABAA RECEPTOR ANTAGONISTIC CHARACTER AND THE USE THEREOF FOR MYOTROPIC PURPOSE**

The invention relates to a composition containing pseudobiocide derivatives formed for exhibiting gabaA receptor antagonistic action and the use of this composition for myotropic purpose.

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