**Specification**

**2- USING [(4-FLUOROETHYL)SULFONYL]DIHYDROPYRROLO[5,6-A]PYRAZINE-4(2H)-DIONE  AND ITS ANALOGUES FOR DEMENTIA AND DERIVATIVES**

**Technical Area**

Discovery is about composition which is formed for the treatment of dementia derivatives.

**Known Status of the Technique**

Today, dementia is a progressive disease caused by brain damage and patient cannot show expected brain performance according to his age. Affected areas especially are memory, attention, language and problem solving. At the proceeding phases person can lose time, place and person orientation. He cannot remember at which day, month, year he is in, where he is or even he cannot remember his closest family.

Generally the causes for this disease are sugar metabolism defect in brain, insulin resistance at brain tissues, beta-amyloid accumulation and cholinergic defect. Most of the people at the beginning or middle phase of Alzheimer are given tacrine (Cognex), donepezil (Aricept), rivastigmine (Exelon) and galanthamine (Razadyne, formerly known as Reminyl) to delay deterioration of symptoms. For mild and severe dementia, memantine (Namenda) is another used medication. Doctors believed that in vascular dementia, additional harms can be prevented by controlling blood pressure, cholesterol and insulin level with stopping smoking.

Currently medications to slow, prevent or reverse the damage caused by Alzheimer and Vascular dementia are being studied. Meantime, persons not showing dementia symptoms must try to strengthening their memory. Developing interest and hobby areas, performing activities effecting both mental and physical aspects are recommended. Mental vitality and exercise are also important for mental health. Restricting alcoholic beverages is also important, because excessive drinking can cause brain damage in time.

In the current technique with WO 1999/025363 number and “Active content combination for Alzheimer type senile dementia” topic and “A61K 31/645” classified discovery is related to pharmaceutical composition consisting below given active content; 1- (2-napht-2-ylethyn)-4-(3-trifluoromethylphenyl)-1, 2, 3, 6-tetrahydropyridine chosen compound (a) and a compound from formula (I), with optional pharmaceutical accepted salt form, Y;-CH- or –N- is in mentioned formula; R1 is; hydrogen, halogen, a CF3, (C3-C4) alkylor (C1-C4) alcoxy group, R2 is; hydrogen, halogen, hydroxyl, CF3, (C3-C4) alkylor (C1-C4 ) alcoxygroup and each one of R4 is; hydrogenor (C1-C3) alkyl; X; (a) (C3-C6) alkyl; (C3-C6) alcoxy; (C3-C7) carboxyalkyl; (C1-C4) alcoxycarbonyl(C3-C6) alkyl; (C3-C7) carboxyalcoxyor (C1-C4) alcoxycarbonyl(C3-C6) alcoxy; (b) (C3-C7) cycloalkyl, (C3-C7) cycloalkyloxy, (C3-C7) cycloalkylmethyl, (C3-C7) cycloalklalkylaminoand cyclohexxenylchosen radical and mentioned radical is;halogen, hydroxy, (C1-C4) alcoxy, carboxy…

Again, EP1289527B1 number discovery is about using (+) -alpha- (2, 3-dimethoxyphenyl) -1(2- (4-fluorophenyl) ethyl) -4-piperidinementhanolor pre-medication at dementia or cognitive disorders’ treatments.

Again, EP1606277B1 number, “Imıdazole-4-ethinyl-pyridine derivations” named discovery is used in complete or partial treatment or prevention of defects intervened by glutamate receptor 5, for example acute, traumatic and chronic degenerative nervous system phases, Alzheimer’s disease, senile dementia, Parkinson’s disease, Huntington chorea, amyotrophic lateral sclerosis and multiple sclerosis, schizophrenia, anxiety, depression, pain and narcotic addicts with 4-[1-aryl-imidazole-4-ylethynyl]-2-alkyl-piridine and 1-heteoaryl-imidazole-4-ylethynyl]-2-alkyl-piridine derivations and their pharmaceutical accepted salts.

Again, EP1294382B1 number and “7 hydroxyepiandrosterone with neuroprotectiveactivity” named discovery is about using 7-hydroxy-steroid compounds to prevent neuron cell death and thus these compounds are useful at treatment and prevention of these situations or below mentioned sequels. Alzheimer’s disease, Parkinson’s disease, cognitive disorder without dementia, stroke, brain trauma, spinal cord injury. This usage is also beneficial to increase cognitive function.

In conclusion, the requirement for a composition for the treatment of dementia derivations and ineffectiveness of the current solutions made it necessary to make an improvement in related technical area.

**Purpose of the Discovery**

To remove the disadvantages of the technique related to known status, one of the purposes of the discovery is to support acetylcholine release, repress beta-amyloid accumulation and support cholinasetiltransferase expression in order to treat dementia symptoms.

Another purpose of the discovery is to support brain insulin metabolism.

Another purpose of the discovery is to support cerebrovascular circulation.

Another purpose of the discovery is that it helps brain cells to regenerate by supporting neurotrophinexpression increase and prevents neuron structure.

To take advantage of the articles above, the discovery is a composition for the treatment of dementia derivations which is obtained from the combination of compounds picked from groups that 2-[(4-fluorethyl)sulfonyl]dihydropyrrolo[5,6-a]pirazine-4(2H)-dione,5,6-tetramethyl-3,4-methoxybenzo[g]-1,3-benzopentaoksolo[5,6-vinilpiridinol, 5,6-trimethyl-3,4-methylbenzo[g]-1,4-benzodioxolane[1,3-vinilpiridinol.

The structural and characteristic properties of the discovery and all of its advantages will be understood more clearly with the detailed explanation given below. Therefore the evaluation should be made after this detailed explanation is considered.

**Detailed Explanation of the Discovery**

Discovery is a composition which is formed for the treatment of dementia derivations. The composition which is subject to the discovery supports release of acetylcholine, repress beta-amyloid accumulation and supports cholinasetiltransferase expression to treat dementia symptoms.

Related composition supports brain’s insulin metabolism and cerebrovascular circulation. By increasing neurotrophin expression it helps to regenerate brain cells and protects neuron structures.

The composition which is subject to the discovery contains 2-[(4-fluorethyl)sulfonyl]dihydropyrrolo[5,6-a]pirazine-4(2H)-dione,5,6-tetramethyl-3,4-methoxybenzo[g]-1,3-benzopentaoksolo[5,6-vinilpiridinol, 5,6-trimethyl-3,4-methylbenzo[g]-1,4-benzodioxolane[1,3-vinilpiridinol.

The formulation in question is obtained by the mixture of the compounds mentioned above at the amounts given below.

16-43% of 2-[(4-fluorethyl)sulfonyl]dihydropyrrolo[5,6-a]pirazine-4(2H)-dione,

46-28% of 5,6-tetramethyl-3,4-methoxybenzo[g]-1,3-benzopentaoksolo[5,6-vinilpiridinol,

38-29% of 5,6-trimethyl-3,4-methylbenzo[g]-1,4-benzodioxolane[1,3-vinilpiridinol.

The compounds given above are obtained from the individual or combined union of the compounds picked from the groups at above in the amounts at the percentage intervals given above.

The discovery in question also includes a composition usage of the composition in question for the treatment of enuresis disease and production for this purpose.

**CLAIMS**

1. The discovery is a composition for the treatment of dementia derivations which is obtained from the combination of compounds picked from groups that contain 2-[(4-fluorethyl)sulfonyl]dihydropyrrolo [5,6-a]pirazine-4(2H)-dione,5,6-tetramethyl -3,4-methoxybenzo[g]-1,3-benzopentaoksolo [5,6-vinilpiridinol, 5,6-trimethyl -3,4-methylbenzo [g]-1,4-benzodioxolane [1,3-vinilpiridinol.
2. It’s a composition which is in accordance with Claim 1 and it contains 16-43% of2-[(4-fluorethyl)sulfonyl]dihydropyrrolo [5,6-a]pirazine-4(2H)-dione.
3. It’s a composition which is in accordance with Claim 1 and it contains46-28% of5,6-tetramethyl -3,4-methoxybenzo[g]-1,3-benzopentaoksolo [5,6-vinilpiridinol.
4. It’s a composition which is in accordance with Claim 1 and it contains38-29% of 5,6-trimethyl -3,4-methylbenzo [g]-1,4-benzodioxolane [1,3-vinilpiridinol.
5. The discovery is used for the production of composition for the treatment of dementia derivations which is obtained from the individual or combined union of the compounds picked from groups that contain 2-[(4-fluorethyl)sulfonyl]dihydropyrrolo [5,6-a]pirazine-4(2H)-dione,5,6-tetramethyl -3,4-methoxybenzo[g]-1,3-benzopentaoksolo [5,6-vinilpiridinol, 5,6-trimethyl -3,4-methylbenzo [g]-1,4-benzodioxolane [1,3-vinilpiridinol.

**SUMMARY**

**USING 2-[(4-FLUOROETHYL)SULFONYL]DIHYDROPYRROLO[5,6-A]PYRAZINE-4(2H)-DIONE  AND ITS ANALOGUES TO TREAT DEMENTIA DERIVATIONS**

Discovery is about a composition which is formed for the treatment of dementia derivations.

There are no diagrams.