New multitarget drugs derivatives of l-indazolylketones

CSIC, Rey Juan Carlos University and Alcorcón’s Hospital have developed new indazolylketones with cannabinoid properties and/or cholinergics and/or β-amyloid peptide regulators. These compounds could be used for treatment and prevention of diseases and disorders regulated by theses systems and especially for the treatment of Alzheimer's disease.

Pharmaceutical companies interested in a patent licence are sought.

An offer for Patent Licensing

Multitarget profile: cannabinoid and/or cholinergic and/or regulating β-amyloid peptide properties

In the present invention, it describes a series of chemical compounds able to interact with multiple molecular targets related with cannabinoid CB2 receptor and/or the cholinergic system and/or the enzyme BACE-1. The scientific community is studying these systems individually as potential drug targets for the treatment of Alzheimer disease using classical search strategy to develop compounds of high selectivity and potency that acting in an unique target. However, the present invention report a novel strategy for drug discovery based on the design of multitarget compounds acting simultaneously in two or three of these targets.

The disclosed compounds, derivatives of (aralkyl or aryl)(indazolyl) ketones may be useful in the treatment or prophylaxis of diseases associated with the regulation of different systems, such as Alzheimer’s disease, Lewy body dementia, the multiple sclerosis or amyotrophic lateral sclerosis, and for the prevention or treatment of myasthenia gravis, autism, fragile X syndrome (Martin-Bell), Parkinson disease, Huntington disease, and schizophrenia syndrome.

Main innovations and advantages

- These indazolylketones compounds may act simultaneously at two pharmacological targets as agonist CB2/inhibitor BACE-1; inhibitor BuChE/BACE-1) being a more effective therapeutic treatment to the neurodegenerative diseases and dementias.
- To highligh the results of a study in an animal model of Alzheimer disease (male mice TgAPP). These in vivo studies reveal that one of the compounds, NP137, is able to restore cognitive abilities of TgAPP mice, so coul be being a very promising candidate to the development of a new multitarget drug to the treatment of AD.

Patent Status
PCT patent application filed

For more information, please contact:
Juan Pablo Duque
Deputy Vice-Presidency for Knowledge Transfer
Spanish National Research Council (CSIC)
Tel.: 983 37 84 22
E-mail: duque@csic.es