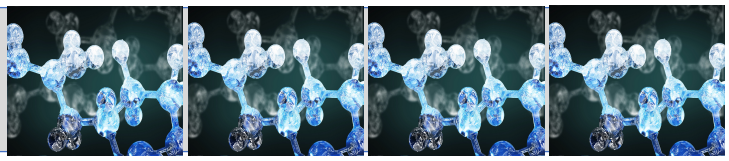
Technology Overview



GABA receptor selective ligands for pain & CNS disorders
OTT ID #1410

APPLICATIONS

Recent studies have implicated the α6GABAARs as the valid target in trigeminal orofacial pain, neuropsychiatric disorders with sensori-motor gating deficits, and migraine. Promising results were found in animal models for several of these indications, and the lead compounds show a lack of cytotoxicity, improved metabolic stability, an excellent bioavailability after oral administration, and appropriate brain concentrations, rendering them potential candidates for treatment of CNS disorders.

TARGET PROBLEMS

Many GABAergic drugs on the market today offer little subtype selectivity and thus exhibit undesired side effects (sedation, ataxia, amnesia, tolerance, and addiction). There has been a lack of new drugs developed for CNS disorders, while the social, clinical, and economic need remains.

TECHNOLOGY

Through a joint collaboration, the inventors have synthesized and tested novel non-benzodiazepine $GABA_A$ receptor ligands functionally selective to the alpha 6 subtype (α6$GABA_AR$). The team continues to explore indications including schizophrenia and migraine.

KEY BENEFITS

- **Functionally selective** – The novel compounds are functionally selective for the α6$GABA_A$Rsubtypes
- **Non-Sedating** – Avoidance of the α1-subtype aids in preventing sedative and other psychomotor-impairing effects
- **Metabolically stable** – Deuteration of the methoxy group of aryl-pyrazoloquinolinones improves metabolic stability and optimizes bioavailability
- **Safer/Less addictive** – Compounds which are silent or nearly silent at the α1-and α5- receptor subtypes should demonstrate limited tolerance and less addictive effects

INTELLECTUAL PROPERTY

US Patent Allowed and Pending
EP Notice of Acceptance PCT/US2016/035761

PUBLICATIONS

INVENTORS

James Cook, Margot Ernst, Miroslav Savic, Werner Sieghart, Lih-Chu Chiou, Pi-Chuan Fan

For further information please contact:
Jessica Silvaggi, Ph.D., C.L.P.
Director of Technology Commercialization | UWM Research Foundation
1440 East North Avenue | Milwaukee, WI 53202
Tel: 414-906-4654
Please reference: OTT ID. 1410