



Ligand selective to alpha 6 subunit containing GABAA receptors and their method of use

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Market Needs:

This agent may treat schizophrenia, tic disorders, attention deficit hyperactivity disorders (ADHD), obsessive compulsive disorders (OCD), and other neuropsychiatric disorders with sensorimotor gating deficit, as well as migraine and trigeminal neuropathic pain.

According to the report from WHO, schizophrenia affects 24 million people worldwide of 2011. Current drug treatments for schizophrenia vary individually. Patients need to suffer for long time try-and-error process to find the best treatment strategy. In Taiwan, about one of every 200 children and 4-18% people world widely, suffer from tic disorders. Severe tic attacks affect daily life and sever cases may have difficult to learn or go to school, even lead to a life-long disability. Drug-reluctant cases and un-tolerable side effects with current treatments make these diseases unmet medical needs. Besides, many neuropsychiatric disorders also manifest sensorimotor gating deficit, such as but not limited to, ADHD, OCD, nocturnal enuresis, Huntington disease, antisocial personality disorder and bipolar disorder. The individual markets for these diseases may not be huge while novel drugs for treating some of these diseases, such as Tourette syndrome (TS), are categorized as FDA-recognized orphan drugs. Therefore, a total market with more than 10 billions is expected.

Migraine affects about 10% of people word widely. The prevalence in women is 3 times more than men. Current pharmacological therapies are mainly preventive but not curative. Besides, more than 20% refractory cases make this disease is also an unmet medical need. Trigeminal neuropathic pain includes, but not limit to, trigeminal neuralgia. Currently, there is no curative pharmacological therapy for trigeminal neuralgia. Never block therapy may remit symptoms but the refusal to an invasive treatment makes this disease also an unmet medical need.

Our Technology:

In hyper-dopaminergic animal models or animals with prepulse inhibition disruptions to model sensorimotor gating deficits in neuropsychiatric disorders, such as schizophrenia, tic disorders, attention deficit hyperactivity disorders (ADHD) and obsessive compulsive disorders, et

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al, we found a series of this subtype-selective ligands of GABA_A receptors were effective. Besides, since, this subtype-selective ligands of GABA_A receptors is also expressed in trigeminal ganglia, we also proved these compounds were effective in animal models of migraine and trigeminal neuropathic pain.

Strength:

The alpha 6 subunit-containing GABA_A receptor selectivity is an exclusive property of these compounds. Thus, they are first in the class in terms of treatments for the neuropsychiatric disorders mentioned above, migraine and trigeminal neuropathic pain .

Competing Products:

Currently, there is no any drug with the same mechanism in the market.

Intellectual Properties:

A PCT patent application has been filed.

Contact (do not need to fill out): Center for Industry-Academia Cooperation, NTU Tel: 02-3366-9945, E-mail: ntuciac@ntu.edu.tw

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