Benzodiazepine Derivatives with Reduced Side Effects for the Treatment of Schizophrenia, Alcoholism, Anxiety and

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The WiSys Technology Foundation is seeking commercial partners interested in developing anxiolytic and anticonvulsant benzodiazepines that offer little or no side effects.

OVERVIEW

Benzodiazepines like Valium and Xanax are commonly used as anxiolytics (anti-anxiety medications) and anticonvulsants. They bind to neurotransmitter receptors, particularly gamma-aminobutyric acid (GABA) type A receptors. However, benzodiazepines can cause significant side effects, including drowsiness, dizziness, impaired memory and decreased coordination. They can also lead to tolerance, dependence and abuse. Other anxiolytics, such as serotonergic agents, were developed to provide reduce side effects, but they have other drawbacks. Improved therapeutics for the treatment of anxiety and seizure disorders are needed.

THE INVENTION

Researchers at UW-Milwaukee have developed benzodiazepine derivatives that perform anxiolytic and anticonvulsant functions with little or no side effects. The modified benzodiazepines are stereospecific and offer increased binding selectivity for GABA type A receptors. They show little or no sedative, hypnotic, ataxic or muscle relaxing side effects.

These derivatives can be used to treat schizophrenia, anxiety disorders and phobias, along with seizures and other convulsant disorders. Because specific GABA type A receptors may play a role in alcohol addiction, these derivative-s can also be used to treat alcoholism. Current animal model data demonstrates the ability of one of these compounds to selectively modulate hippocampal information processing and to reverse the dopamine hyperactivity in a rat model of schizophrenia.
APPLICATIONS

- Treatment of schizophrenia, anxiety, convulsant and psychotic disorders, including panic disorder, agoraphobia, phobias, OCD, general anxiety disorder, attention deficit disorder, post-traumatic and acute stress disorder, substance-induced anxiety disorder, neuroses, convulsions, migraine, depression, bipolar disorder, schizophrenia, alcoholism, emesis, eating disorders, infantile autism and menopausal disorders.

KEY BENEFITS

- Exhibit few sedative, hypnotic, muscle relaxant, or ataxic side effects
- May diminish alcohol craving and self-administration of alcohol
- May be a treatment for schizophrenia

STAGE OF DEVELOPMENT

Compounds Isolated

ADDITIONAL INFORMATION

Related Technologies
See WiSys reference number T02017US for previously developed compounds.

Tech Fields
Pharmaceuticals & Vitamin D - Neurological & mental health

CONTACT INFORMATION

For current licensing status, please contact Jennifer Cook at jennifer@wisys.org or (608) 316-4131.