Novel Drug Leads for Preventing Benzodiazepine Side Effects

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APPLICATIONS

Pharmaceuticals, Chemical Addiction (Alcohol, Nicotine and Opioids), Medicinal Chemistry, Drug Discovery, Substance Abuse Treatments, Combination Therapy, Pain, Anxiety, Epilepsy

TARGET PROBLEMS

- Classically used benzodiazepines are addictive, sedating, ataxic, and amnesic with abuse liabilities.
- Patients using benzodiazepines often become tolerant to the drugs over time, losing the therapeutic effects.

KEY BENEFITS

- **Reduced Side Effects** - Compounds targeted to the α1 subunit of the GABA receptor in combination with benzodiazepines can alleviate side effects.
- **Safer** – Animal models show reduction/elimination of side effects while maintaining symptom treatment of the benzodiazepine.

TECHNOLOGY

Inventors at University of Wisconsin-Milwaukee have developed novel aza-beta carboline compounds that are useful for the treatment of several diseases and conditions including chemical addiction (alcohol, nicotine, and opioids), anhedonia, anxiety, and other conditions associated with withdrawal. These compounds are designed to bind selectively to the α1 subtype GABAA receptor. The inventors have shown that α1-preferring ligands when used in combination with benzodiazepines can reduce or eliminate common side effects such as sedation, tolerance, and ataxia.

INTELLECTUAL PROPERTY

U.S. Utility Patent 8,268,854; Aza-Beta Carbolines and Methods of Using Same
U.S. Utility Patent pending 2020/0316087; Novel Combination Therapy for Anxiety Disorders, Epilepsy And Pain

LEAD INVENTORS

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