



## TECHNOLOGY LICENSING OFFICE

4301 West Markham Street, #831

Little Rock, AR 72205

501.686.6696

email: nmgray@uams.edu

### **BV 2012-17 - *Antibody-Nanoparticle Conjugates for the Treatment of Drug Abuse***

**APPLICATION:** An antibody composition to treat drug use, drug addiction, and effects of drug use

**KEY BENEFITS:**

- Multivalent antibody specific for methamphetamine
- High affinity
- Long lasting effect

**MARKET SUMMARY:** The socioeconomic impact of (+)-methamphetamine (METH) abuse is of great concern worldwide. Due to its multiple sites of action in the central nervous system (CNS), it is difficult to attenuate the detrimental effects of METH using a brain receptor antagonist or agonist. Currently, there are no FDA approved medications to treat METH addiction. The available therapies are mainly supportive and involve behavior modification. METH specific antibody-based medications that act as pharmacokinetic (PCKN) antagonists by reducing the concentration of METH in the brain and other crucial organs have shown promise as potential therapeutics. They alter the disposition of METH in the body, thus reducing the associated medical complications. However, the in vivo half-life of these METH specific antibody-based medications is too short to offer longer-term protection from the effects of METH and the active metabolite (+)-amphetamine (AMP). Accordingly, a need still exists for METH specific therapeutics that could reduce the concentration of METH in the CNS and offer long-term protection from the effects of METH and AMP.

**TECHNICAL SUMMARY:** The present invention provides antibody compositions including antibodies conjugated to nanoparticles having a higher in vivo half-life compared to either the antibody or nanoparticle alone. The antibody compositions have specificity and affinity for amphetamine compounds. These antibody compositions recognize at least one of (+)amphetamine, (+)methamphetamine, and (+)3,4-methylenedioxymethamphetamine ((+)MDMA). Because of their specificity and affinity, the antibody compositions may be used to treat drug use, drug addiction, and effects of drug use in a subject.

**BV 2012-17 - Antibody-Nanoparticle Conjugates for the Treatment of Drug Abuse**  
**Continued**

**DEVELOPMENTAL**

Validated in an animal model

**STAGE:**

**PATENT**

App Type: NonProv

**INFORMATION**

Country: US

**AND CONTACT:**

Serial No.: 14/775,227

Patent No.:

File Date: 03/13/2013

Issue Date:

Inventor(s): Eric Peterson, Guillermo Gonzalez, Nisha Nanaware

Tech ID: 1217

Contact: Joe Underwood, Associate Director – Licensing, [junderwood@uams.edu](mailto:junderwood@uams.edu)