

## **Analogues of Modafinil for treating sleep and attention disorders**

### **Summary**

The National Institute on Drug Abuse's Medicinal Chemistry Section seeks partners interested in collaborative research to co-develop analogues of modafinil for the treatment of drug abuse and sleep and attention disorders.

### **NIH Reference Number**

E-073-2013

### **Product Type**

- Therapeutics

### **Keywords**

- narcolepsy
- attention deficit/hyperactivity disorder (ADHD)
- modafinil
- dopamine (DAT)
- serotonin (SERT)
- norepinephrine (NET)

### **Collaboration Opportunity**

This invention is available for licensing.

### **Contact**

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### **Description of Technology**

Modafinil has attracted attention for the treatment of cognitive dysfunction in disorders such as attention-deficit/hyperactivity disorder (ADHD) as well as cocaine and methamphetamine dependence. However, modafinil has relatively low affinity for binding to the dopamine transporter (DAT) to block dopamine reuptake, and is water-insoluble, thus requiring large doses to achieve pharmacological effects.

Investigators at the [National Institute of Drug Abuse](#) have synthesized a series of modafinil analogues that have higher affinity for the dopamine (DAT), serotonin (SERT) and/or norepinephrine (NET) transporters and improved water solubility. These novel

analogues present the advantage of higher potency, which may translate into lower effective doses and better bioavailability over modafinil.

### **Potential Commercial Applications**

- Therapeutic agent for substance abuse (such as nicotine, cocaine, methamphetamine, opioids), for attention/cognitive disorders (such as ADHD), and for sleep disorders.

### **Competitive Advantages**

- Higher affinity for monoamine transporters (DAT, SERT, and NET) compared to modafinil
- Analogues have lower effective doses
- Better bioavailability than modafinil
- Improved water solubility over modafinil

### **Inventor(s)**

[Amy H. Newman \(NIDA\)](#)

### **Development Stage**

- Discovery (Lead Identification)

### **Patent Status**

- **U.S. Patent Filed:** U.S. Patent Application Number 14/772,486, Filed 03 Sep 2015
- **Foreign Filed:** - Patent Application

### **Related Technologies**

- E-251-2002

### **Updated**

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