

Non-psychoactive CB2 receptor agonists for treatment for opioid addiction

Opioid use disorders are responsible for a huge number of deaths in the US and abroad. Treatments like methadone offer a path to recovery for heroin addiction, but are burdened with high relapse rates, strict governmental oversight, and continued abuse potential, highlighting the need for non-opioid alternatives.

Cannabis derivatives offer a possible treatment for opioid dependence. Rodent studies from Stanford's Shamloo and Barron laboratories suggest that the CB2 cannabinoid receptor is a mediator of the anti-addictive properties of cannabis derivatives. Selective targeting of the CB2 receptor- while avoiding the psychoactive effects of the CB1 receptor- can therefore be a viable strategy for the treatment of opioid use disorder.

The inventors have designed a library of agonists for the CB2 receptor that maximize selectivity without activating CB1. As a result, the compounds minimize the psychoactive effects of cannabinoid use, while maximizing the mitigation of addiction behaviors.

Beyond opioid use dependence, the compound library also has applications in pain relief and management, inflammatory disorders, and neuroinflammation.

Applications

- Treatment for
 - opioid use dependence
 - pain management
 - inflammatory diseases
 - stroke

- neuroinflammation
- Animal models of opioid addiction

Advantages

- Non-opioid option for addiction treatment
- Avoids psychoactive effects of cannabis derivatives
- Non-addictive option for pain relief

Patents

- Published Application: [WO2022132803](#)
- Published Application: [20240158384](#)

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