

## **Assessment of medical marijuana bioactive substances in a mouse model of neuropathic pain**

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Medical marijuana has been heavily debated for many years, however, it is emerging to offer treatment benefit for a range of medical conditions such as neurological disorders, cancer, HIV/AIDS, seizures, muscle spasms, and currently represents a promising alternative treatment strategy for pain disorders. The plant derived cannabinoids bind to and activate specific receptors such as CB1, CB2, TRPV1, and GPR55 that are expressed in cell membranes throughout the entire human body. When people are ingesting or inhaling medical marijuana, the bioactive substances stimulate the mentioned receptors to cause pain-relief and anti-inflammatory effects. Medical marijuana can alleviate different types of pain, including pain resulting from nerve damage, which is our main interest. In addition to the well-known cannabinoids cannabidiol (CBD) and tetrahydrocannabinol (THC) other bioactive substances may be present in marijuana extracts that so far have received little attention.

In the first part of the project we are investigating the ability of medical marijuana bioactive substances to activate CB1, CB2 or GPR55 receptors. By working with cultured cells that are expressing the receptors of interest we are investigating changes in the signaling molecules that are promoted following receptor activation. Then, we are interested to identify whether medical marijuana bioactive substances, other than THC could mimic these effects, have analgesic effect on their own or intensify the biomedical action of CBD or THC with the overall aim to develop novel treatments for neuropathic pain disorders possibly through discovering novel medical marijuana bioactive substances.



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