



## Section 2: Non-Confidential Abstract

Please provide a scientific abstract of the Project. Clearly state the problem you are trying to solve, your hypothesis and approach, and expected results. **Please Note: This section may be provided to a diverse set of stakeholders including the public.**

An estimated one in five Albertans live in chronic pain. The prevalence of chronic pain increases with age, so the proportion of Albertans needing to managing this complex disease will grow. Chronic pain dramatically reduces quality of life, exacts high societal costs due to lost productivity, and places an enormous burden on the health care system. The indirect and direct costs of chronic pain are estimated between 56-60 Billion dollars per year in Canada. Current treatments have poor outcomes, so new improved therapies are desperately needed.

Pain reduction is one of the most common reasons for medicinal cannabis use. Large knowledge gaps remain regarding the efficacy and safety of cannabis for the management of chronic pain. Moreover, the psychoactive nature of some compounds in cannabis remains a barrier for therapy. However, many cannabis-derived compounds lack psychoactive effects and appear to have therapeutic value as analgesics. It is not clear which cannabis components confer benefits, which may include independent effects on the three key interrelated dimensions of pain perception: pain transmission; inflammation; and depression. Our understanding of non-psychoactive cannabinoid effects on pain processing on these dimensions is virtually unknown, but likely involve multiple mechanisms in both the peripheral nervous system and brain. Identifying the most impactful component of cannabis, or set of components, with synergistic effects on these dimensions is a key step for developing the most efficacious therapies and drug development for safe and effective pain management.

The goal of the proposed project is to evaluate the therapeutic potential of 6 candidate non-psychoactive cannabinoids in a rodent model of chronic inflammatory pain, and identify the peripheral and central sites of action. Ultimately, our goal is to fill in key knowledge gaps that will help pave the way to develop cannabinoid-based therapies with the highest clinical value in inflammatory bowel disease, rheumatoid arthritis, and other illnesses with debilitating inflammation-related pain. The knowledge generated from this project can be translated immediately by practitioners recommending commercially available cannabis products, and provides a foundation for developing more targeted treatments based on naturally-occurring cannabis compounds. This synergizes with Alberta's burgeoning cannabis industry, and provide a route for high-value product development for positive economic impact in our province.