Physiol Behav. 2014 Aug:135:119-24. doi: 10.1016/j.physbeh.2014.06.003. Epub 2014 Jun 13.

β-Caryophyllene, a CB2 receptor agonist produces multiple behavioral changes relevant to anxiety and depression in mice

Amine Bahi [1], Shamma Al Mansouri [2], Elyazia Al Memari [2], Mouza Al Ameri [2], Syed M Nurulain [3], Shreesh Ojha [3]

Affiliations

PMID: 24930711 DOI: 10.1016/j.physbeh.2014.06.003

Abstract

Recent evidence suggests that the cannabinoid receptor subtype 2 (CB2) is implicated in anxiety and depression disorders, although few systematic studies in laboratory animals have been reported. The aim of the current experiments was to test the effects of the CB2 receptor potent-selective agonist β-caryophyllene (BCP) in animals subjected to models of anxiolytic- and antidepressant-like effects. Therefore effects of BCP (50mg/kg) on anxiety were assessed using the elevated plus maze (EPM), open field (OF), and marble burying test (MBT). However for depression, the novelty-suppressed feeding (NSF), tail suspension test (TST), and forced swim tests (FST) were used. Results indicated that adult mice receiving BCP showed amelioration of all the parameters observed in the EPM test. Also, BCP significantly increased the time spent in the center of the arena without altering the general motor activity in the OF test. This dose was also able to decrease the number of buried marbles and time spent digging in the MBT, suggesting an anti-compulsive-like effect. In addition, the systemic administration of BCP reduced immobility time in the TST and the FST. Finally, BCP treatment decreased feeding latency in the NSF test. Most importantly, pre-administration of the CB2 receptor antagonist AM630, fully abrogated the anxiolytic and the anti-depressant effects of BCP. Taken together, these preclinical results suggest that CB2 receptors may provide alternative therapeutic targets for the treatment of anxiety and depression. The possibility that BCP may ameliorate the symptoms of these mood disorders offers exciting prospects for future studies.

Keywords: AM630; Anxiety; CB(2) receptors; Depression; β-Caryophyllene.

Related information

MedGen
PubChem Compound (MeSH Keyword)

LinkOut - more resources

Full Text Sources

ClinicalKey
Elsevier Science

Other Literature Sources

The Lens - Patent Citations
scite Smart Citations

Medical

MedlinePlus Consumer Health Information
MedlinePlus Health Information

Research Materials

NCI CPTC Antibody Characterization Program

Miscellaneous

NCI CPTAC Assay Portal