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An Orally Active *Cannabis* Extract with High Content in Cannabidiol attenuates Chemically-induced Intestinal Inflammation and Hypermotility in the Mouse.

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Abstract

Anecdotal and scientific evidence suggests that *Cannabis* use may be beneficial in inflammatory bowel disease (IBD) patients. Here, we have investigated the effect of a standardized *Cannabis sativa* extract with high content of cannabidiol (CBD), here named CBD BDS for "CBD botanical drug substance," on mucosal inflammation and hypermotility in mouse models of intestinal inflammation. Colitis was induced in mice by intracolonic administration of dinitrobenzenesulfonic acid (DNBS). Motility was evaluated in the experimental model of intestinal hypermotility induced by irritant croton oil. CBD BDS or pure CBD were given - either intraperitoneally or by oral gavage - after the inflammatory insult (curative protocol). The amounts of CBD in the colon, brain, and liver after the oral treatments were measured by high-performance liquid chromatography coupled to ion trap-time of flight mass spectrometry. CBD BDS, both when given intraperitoneally and by oral gavage, decreased the extent of the damage (as revealed by the decrease in the colon weight/length ratio and myeloperoxidase activity) in the DNBS model of colitis. It also reduced intestinal hypermotility (at doses lower than those required to affect transit in healthy mice) in the croton oil model of intestinal hypermotility. Under the same experimental conditions, pure CBD did not ameliorate colitis while it normalized croton oil-induced hypermotility when given intraperitoneally (in a dose-related fashion) or orally (only at one dose). In conclusion, CBD BDS, given after the inflammatory insult, attenuates injury and motility in intestinal models of inflammation. These findings sustain the rationale of combining CBD with other minor *Cannabis* constituents and support the clinical development of CBD BDS for IBD treatment.

KEYWORDS: Cannabis sativa; cannabidiol; cannabinoids; colitis; inflammatory bowel disease; intestinal motility

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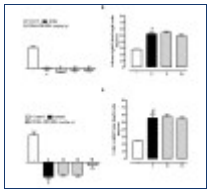
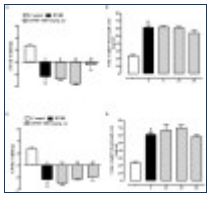
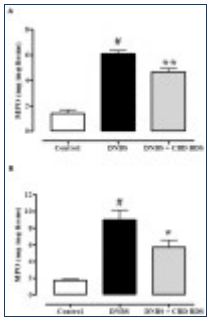
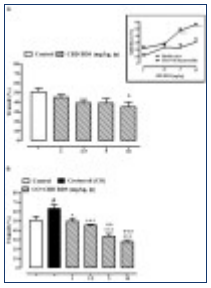
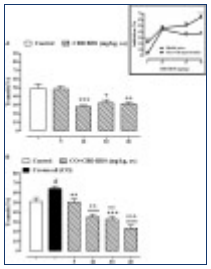
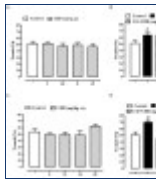

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