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Overcoming the Bell-Shaped Dose-Response of Cannabidiol by Using *Cannabis* Extract Enriched in Cannabidiol

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ABSTRACT

Cannabidiol (CBD), a major constituent of *Cannabis*, has been shown to be a powerful anti-inflammatory and anti-anxiety drug, without exerting a psychotropic effect. However, when given either intraperitoneally or orally as a purified product, a bell-shaped dose-response was observed, which limits its clinical use. In the present study, we have studied in mice the anti-inflammatory and anti-nociceptive activities of standardized plant extracts derived from the *Cannabis sativa* L., clone 202, which is highly enriched in CBD and hardly contains any psychoactive ingredients. In stark contrast to purified CBD, the clone 202 extract, when given either intraperitoneally or orally, provided a clear correlation between the anti-inflammatory and anti-nociceptive responses and the dose, with increasing responses upon increasing doses, which makes this plant medicine ideal for clinical uses. The clone 202 extract reduced zymosan-induced paw swelling and pain in mice, and prevented TNF α production in vivo. It is likely that other components in the extract synergize with CBD to achieve the desired anti-inflammatory action that may contribute to overcoming the bell-shaped dose-response of purified CBD. We therefore propose that *Cannabis* clone 202 (Avidekel) extract is superior over CBD for the treatment of inflammatory conditions.