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Effect of Non-psychotropic Plant-derived Cannabinoids on Bladder Contractility: Focus on Cannabigerol

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Abstract

There are anecdotal reports that some Cannabis preparations may be useful for bladder dysfunctions. Here, we investigated the effect of a number of non- psychotropic phytocannabinoids, namely cannabidiol (CBD), cannabigerol (CBG), cannabidivarin (CBDV), Δ9-tetrahydrocannabivarin (THCV) and cannabichromene (CBC) on mouse bladder contractility in vitro. CBG, THCV, CBD and CBDV, but not CBC, at concentration ranging from 10(-8) M to 10(-4) M, decreased (with similar potency), the contractions induced by acetylcholine without significantly modifying the contractions induced by electrical stimulation. The rank order of efficacy was CBG=THCV>CBD>CBDV. In depth studies on CBG showed that the effect of this phytocannabinoid on acetylcholine-induced contractions was not affected by CB1 or CB2 receptor antagonists. Additionally, CBG also reduced acetylcholine-induced contractions in the human bladder.

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