

wśród syntetycznych analogów kannabinoidów, jeśli poprzez modyfikacje ich struktury uda się wyeliminować działanie psychotropowe zachowując efekt leczniczy.

Nowe badania wskazujące na istnienie w mózgu i śledzienie miejsc o bardzo wysokim powinowactwie do kannabinoidów (receptorów kannabinoidów) oraz endogennego ligandu – anandamidu, zachowującego się w testach farmakologicznych jak THC, a także doniesienia o otrzymaniu drogą syntezy dwóch silnych agonistów kannabinoidów: CP 55,940 i HU 210. Ten ostatni jest analogiem strukturalnym 11-hydroksy-8-THC, w którym przy C-3 zamiast rodnika pentylowego występuje dłuższy, rozgałęziony rodnik dimetyloheptyłowy.

Wyniki tych badań zbliżają nas do poznania molekularnego mechanizmu uzależnień i stworzenia podstaw ich skutecznej farmakoterapii.

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Cannabis: biochemistry, pharmacology, toxicology

Summary

Production and properties of marijuana, hashish and cannabis oil - psychoactive derivatives of *Cannabis sativa* L trafficked on the black market - are discussed in the paper. The component responsible for the psychotropic action of these products is delta-9-Tetrahydrocannabinol (THC), which undergoes changes in the human organism yielding a number of metabolites, including 9-carboxy-THC and its glucuronian (inactive metabolites predominating in urine), as well as 11-hydroxy-THC and 8-beta-hydroxy-THC (metabolites characterized by a biological action similar to that of THC).

Moreover, carcinogenic action of the smoke inhaled during smoking of the cannabis products was outlined, as well as noxious effects of the smoke on the respiratory and circulatory systems, reproductive organs, immunity, and the brain. The above-described action of THC and cannabis products casts serious doubt on attempts reported in the literature to use these substances in the treatment of glaucoma and convulsive conditions, or in order to alleviate nausea and vomiting in the course of chemotherapy of neoplasms. Perhaps new, valuable drugs of this group of compounds may be obtained among synthetic analogues of cannabinoids, if it turns out possible to eliminate their psychotropic effects and preserve the therapeutic action.

Some new studies were also reported indicating the presence of areas in the brain and spleen characterized by a very high affinity for cannabinoids (cannabinoid receptors) and with endogenous ligand - anandamide behaving in pharmacological tests like THC. There are also reports in the literature about obtaining by synthesis two strong cannabinoid agonists: CP 55,940 and HU 210. The latter is a structural analogue of 11-hydroxy-8-THC, containing a longer, branched dimetyloheptyl radical instead of the pentyle radical.

These research results bring us closer to finding out the molecular mechanism of substance dependence and to establishing foundations of its effective pharmacotherapy.

Key words: delta-9-Tetrahydrocannabinol, marijuana, hashish, cannabis oil, anandamide

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