

Title

Cannabidiol (CBD) in hemp seed oil: "impurity" as a marker of "purity"

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Abstract

Hemp seed oil from *Cannabis sativa* L. is a very rich natural source of important nutrients, not only polyunsaturated fatty acids and proteins, but also terpenes and cannabinoids, which contribute to the overall beneficial effects of the oil. Hence, it is important to have an analytical method for the determination of these components in commercial samples. At the same time, it is also important to assess the safety of the product in terms of amount of any psychoactive cannabinoid present therein. The work herein presented deals with the development and validation of a highly sensitive, selective and rapid HPLC-UV method for the qualitative and quantitative determination of the main cannabinoids, namely cannabidiolic acid (CBDA), tetrahydrocannabinolic acid (THCA), cannabidiol (CBD), tetrahydrocannabinol (THC), cannabinol (CBN), cannabigerol (CBG) and cannabidivarin (CBDV), present in 13 commercial hemp seed oils. Moreover, since decomposition of cannabinoid acids generally occurs with light, air and heat, decarboxylation studies of the most abundant acid (CBDA) were carried out in both open and closed reactor and the kinetics parameters were evaluated at different temperatures in order to evaluate the stability of hemp seed oil in different storage conditions.