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Guest Editorial

### Cannabidiol (CBD) – An update

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Cannabinoids are synthetic, semisynthetic or natural organic molecules that bind to cannabinoid receptors, and they have similar pharmacological properties as produced by the plant, *Cannabis sativa* L. (Nahar et al., 2020). Of the 113 naturally occurring cannabinoids identified to date,  $\Delta^9$ -tetrahydrocannabinol ( $\Delta^9$ -THC or simply, THC) and cannabidiol (CBD) are the two major cannabinoids, biosynthesized by *C. sativa* (Lafaye et al., 2017). While  $\Delta^9$ -THC is the main contributor to the psychoactive property of *C. sativa*, interestingly, the other major compound, CBD, possesses antipsychoactive property as well as other beneficial medicinal properties, because of which, this compound has been in the lime light for its potential pharmaceutical/medicinal and cosmeceutical applications. However, because of various legislative bottlenecks and restrictions regarding the use, sell and possession of *Cannabis* and *Cannabis* products including CBD have made difficult its breakthrough in the market in many countries, especially in the UK.

In the USA, since CBD has been an investigational drug, it cannot be legally included in foods or dietary supplements, and in any products marketed with therapeutic claims (MedlinePlus, 2019). However, CBD is permitted to be used in cosmetics products and only if it contains less than 0.3%  $\Delta^9$ -THC. Medicinally, CBD is most commonly indicated for its use in seizure disorder (epilepsy), as well as for anxiety, pain, a muscle disorder called dystonia, Parkinson disease, Crohn disease, and many other conditions. Despite its complex and rapidly evolving regulatory status in the USA, projected retail sales of CBD products, hemp, *Cannabis* and pharmaceuticals, are over \$1.9 billion by 2020 (Corroon and Kight, 2018). FDA regulations of *Cannabis* and *Cannabis*-derived products, including CBD can be found in their website <https://www.fda.gov/news-events/public-health-focus/fda-regulation->

[cannabis-and-cannabis-derived-products-including-cannabidiol-cbd.](#)

While cannabidiol oil has long been sold in the UK, only recently, two *Cannabis*-based medicines used to treat epilepsy and multiple sclerosis have been approved for use by the National Health Service (NHS) in England. Guidance issued by the National Institute for Health and Care Excellence (NICE) recommended the substances after examining *Cannabis*-based products for several conditions. In November 2019, the NICE has recommended the medicine Epidiolex, a purified CBD oral solution introduced by the UK-based pharmaceutical company GW Pharmaceuticals, for use in the NHS. The recommendation is for two rare and severe epilepsies, Dravet syndrome and Lennox-Gastaut syndrome; there are, respectively, 3000 and 5000 patients suffering from these two conditions in the UK. Earlier, the European Medicines Agency (EMA) licensed Epidiolex for use in the EU countries. In the mid-2018, the USA, FDA announced its first-ever approval of a *Cannabis*-derived pharmaceutical drug, Epidiolex for the treatment of the above two rare syndromes. The second *Cannabis*-containing medicine is Sativex, which is a mouth spray that contains a mix of  $\Delta^9$ -THC and CBD has been approved for treating muscle stiffness and spasms, known as spasticity, in multiple sclerosis, but doctors are not allowed to prescribe it to treat pain.

As CBD helps inhibit flare ups in some skin conditions and offers a soothing sensation to easily irritated skin, incorporation of CBD in cosmetics and cosmeceutical products is a current trend; a CBD-infused beauty product can help nourish skin and lock in moisture for a healthy and glowing face. There are hundreds of CBD containing cosmetic and cosmeceutical products now available in the market, which have entered the mainstream beauty and skincare market. It is assumed that this is just the beginning of the dawn in *Cannabis* and

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CBD usage in medicine, food and cosmetics; further outcomes from ongoing research will lead to further applications and subsequent global approvals.

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