



Cannabinoids and The Endocannabinoid System

In the human body there is an Endocannabinoid system. This is a lipid signaling system. This system has important regulatory cellular effects that have a profound impact on physiological systems that control functions in all vertebrates. The signal messengers are cannabinoids. Endocannabinoids are signal messengers that the body already produces. Endocannabinoids are released upon demand in a receptor dependent manner. Anandamide is the chemical produced by the body naturally and is received by the cannabinoid receptors. The anandamides activate the cannabinoid receptors. The effects of this natural chemical is similar to the effects of THC but are less powerful. Anandamides may play a critical role in controlling many of the body's biochemical systems, including reproduction, sleep, fight or flight and appetite cycles.

Phytocannabinoids are signal messengers introduced into the body through the consumption of cannabis. Marijuana is composed of over 400 compounds, including about 60 cannabinoids, which are a class of molecules unique to the cannabis plant. The cannabinoids, endo or phyto, bind to one of two cannabinoid receptors, CB1 or CB2. The cannabinoid signals are received by CB1 or CB2 receptors. Cannabinoid receptors are found in very large quantities in many different parts of the nervous system, which includes the brain, spinal cord and the nerves that carry signals between the brain and body.

CB1 receptors have roles in pain perception, motor control, cognition, emotional responses, and physical homeostasis (biochemical balance). Outside the brain, these receptors modulate the autonomic nervous system, the immune system and micro circulation, although, they are virtually absent from areas that control the lungs and heart. Cannabis bypasses these systems, making it essentially non-toxic.

CB2 receptors are found primarily in the spleen and in the immune system and regulate the body's innate immunity. CB2 receptors are found in other organs as well. The receptors receive the signals and start a cascade of secondary signals. This will cause changes in the cells and this is how the functions of the body are controlled. This also leads to the medicinal effects of cannabis, when cannabis is consumed. They appear to be responsible for the anti-inflammatory and stress reduction effects of cannabis. The CB2 receptors may hold the key to many other therapeutic effects that this plant offers, such as immune modulation and tumor reduction.

Cannabinoids were first identified in the 1940's, but it was not until 1964 that D. Raphael Mechoulam of the Hebrew University of Jerusalem isolated delta-9 tetrahydrocannabinol (THC), as the primary psychoactive ingredient in cannabis.

THC (Tetrahydrocannabinol) is the most well known cannabinoid and the most psychoactive. THC has an affinity for both CB1 and CB2 receptors. When it binds to CB1 in your brain it gives the euphoric feeling of being high. It also has stimulant, muscle relaxing, anti epileptic, anti emetic, anti-inflammatory, appetite stimulation, bronchodilating, hypotensive, antidepressant, analgesic as well as mild pain and nausea reducing effects. High potency cannabis contains at least 15% THC.

CBD (Cannabidiol) is not psychoactive. CBD has anti-anxiety, anti-inflammatory, anti-nausea, neuroprotective, blood pressure lowering, and pain killing properties among others. It is hypothesized that CBD is an allosteric antagonist of CB1 receptors. CBD makes it harder for THC to bind to CB1 which lessens the pschoactivity, resulting in a more manageable high. CBC promotes the analgesic effects of THC and has a sedative effect.

CBG (Cannabigerol) has sedative effects and antimicrobial properties, as well as lowering intraocular pressure. It is the biogenetic precursor of the other cannabinoids.

CBN (Cannabinol) is roughly 10% as psychoactive as THC. CBN is the break down product of THC when it is exposed to light and or heat. CBN is a mildly psychoactive degradation of THC. Its primary effects are to lower intr-ocular pressure and antiepileptic.

The other 56 cannabinoids are either slight chemical variations on these main molecules, or are only present in extremely small quantities in camparison.

Please note that even though a compound is not psychoactive, it may still have tremendous effects. Cannabinoids are thought to have numerous synergistic interactions with one another within the body that are not fully understood and that do not take place with the sole administration of THC.