Cannabinoids currently licensed for clinical use

THC

Nabilone

Endocannabinoids

2-archidonoylglycerol

2-archidonoylglycerol

N-arachidonoyldopamine

Noladin ether

ENDOCANNABINOID SYSTEM - A DEEPER LOOK

Written by Cannabis Training University (CTU)
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Humans have used drugs that have been derived from plants for many thousands of years to decrease and cope with pain.

In 1964 THC was discovered at the Weizmann Institute of Science in Rehovot, Israel by Dr. Raphael Mechoulam.

In the year 1973, scientists discovered the first opiate receptors in the human brain.

Opioid receptors are distributed widely in the brain and can be found in the digestive tract and spinal cord.

Opium is found in the seedpod of poppy plants.
Humans have used opiates for pain since the time of Ancient Greece.

In 1975 scientists discovered that the human brain had what are known as “endogenous opiates”, commonly known today as “endorphins”.

American researcher Allyn Howlett and her graduate student William Devane discovered the first cannabinoid receptors in the brain in 1988.

They named them cannabinoid 1 receptors (CB1).

In 1992 researchers in Israel found an endogenous cannabinoid and proceeded to name it N-arachidonoyl ethanolamine or anandamide.

In 1993 scientists found cannabinoid receptors in the immune system (CB2), and subsequently discovered a second endocannabinoid called 2-arachidonoyl glycerol.

So far there have been five endocannabinoids discovered, although as far as medicinal value, the first two found, anandamide and 2-AG appear to have the most importance.

Scientists have since realized that CB1 receptors are found mostly on neurons in the spinal cord, brain, and peripheral nervous system. This very reason explains the role of cannabinoids in pain modulation, memory processing, and motor control.

CB2 receptors are located mainly in immune cells such as the spleen and tonsils.

An amazingly extraordinary fact is that in the human body there are more receptors for cannabinoids than for any other substance.

In the middle area of the human brain there are systems that are critical to keep humans alive, such as heartbeat and breathing.
Cannabinoid receptors are almost completely missing in this area of the brain, whereas opioids have a profound affect on the midbrain.

This explains why cannabis is so safe and does not cause overdoses and deaths like opioid-based medicines so commonly do.
ENDOCANNABINOID SYSTEM:

The endocannabinoid system is involved with the regulation of appetite, pain, memory, mood, and movement in the human body.

The cannabinoid receptors, CB1, and CB2 are located in the brain, as well as throughout the human body.

Many scientists believe that the endocannabinoid system has been conserved in living organisms for more than 500 million years.

The endocannabinoid system affects a wide variety of biological processes including appetite and sleep, but its main function is to regulate homeostasis.

Homeostasis is extremely important when it comes to the biology of all living things.

Homeostasis is the ability to maintain stable internal conditions that are needed for survival or optimal health.

Disease, in its simplest form is merely a result of some aspect of inability of the body to achieve homeostasis.

Cannabinoids has been proven to provide assistance in battling against the effects of brain trauma, spinal cord injury and strokes.

Cannabinoids do this by interrupting the uptake of neurotransmitters that drive the progression of various diseases.
The endocannabinoid system works by sending one neuron to another.

Cannabis and the CB1 receptor has been found useful for:

- Anxiety and Stress
- Increase in Euphoria and Feelings of Happiness
- Decrease in Convulsions and Tremors
- Coping with Chronic Pain

CB2 receptors and cannabis have been found to have a positive affect for:

- Decreasing Cancer Cells
- Boosting the Immune System
- Coping with Alzheimer’s disease

The human body not only has CB1 & CB2 receptors internally, but they are also found in the skin.

This explains why topical cannabis applications if properly prepared can have a profound affect on the human body.

Phytocannabinoids are contained within plants.

THC and CBD are two types of phytocannabinoids.

Endocannabinoids are found in the human body naturally.

Anandamine and 2-AG are both endocannabinoids.
Dietary Cannabinoids are found in spices such as black pepper and cloves.

\[
\Delta-9\text{-tetrahydrocannabinol (THC)}
\]
CONCLUSION:

The endocannabinoid system is one of the most interesting systems found in the human body.

As more is learned about the endocannabinoid system, a greater interest in its therapeutic value has emerged.

The many undesirable side effects that opiate based medicines can cause have become too burdensome for many patients.

It is likely in the coming years that pharmaceutical corporations will exploit the many medicinal applications that cannabinoids can be prescribed for.

The race is on to be the first to market with the next great synthetic cannabinoid drug.

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