The name of the endocannabinoid system comes from *Cannabis sativa* which contains Δ⁹-THC that causes psychotropic effects through cannabinoid receptors. It was discovered that Δ⁹-THC is not the only ligand of the cannabinoid system but there also naturally exist endogenous cannabinoids in the human body. The main endogenous cannabinoids are anandamide and 2-arachidonoylglycerol which act on various receptors, primarily cannabinoid receptors CB1 and CB2 that fall into a group of G-protein coupled receptors, but they may also affect vanilloid receptor TRPV1 or nuclear peroxisome proliferator-activated receptor PPARγ. By studying the cannabinoid system, it was discovered that cannabinoids can modulate some of the cellular processes such as cell growth, proliferation and differentiation of cells, apoptosis and intracellular concentration of Ca²⁺. Recently they have been primarily studied for their usefulness in the treatment of neurodegenerative diseases, for example, Alzheimer’s disease, multiple sclerosis or epilepsy because it has been shown that they support the survival of neurons during excitotoxicity and they modulate the release of cytokines responsible for the regulation of the immune system and inflammatory response.

**Key words:** cannabinoid receptors, G proteins, neuroprotection, Δ⁹-THC, endocannabinoid system