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Genetic and pharmacological dissection of the roles of the endocannabinoid system in the brain

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ABSTRACT OF THE TALK

The endocannabinoid system (ECS) has recently emerged as an important neuromodulatory system in the brain. Several neuronal functions are under the control of the cannabinoid receptor type 1 (CB1 receptor) and of its endogenous lipid ligands (endocannabinoids). CB1 receptors are widely expressed in the brain and their expression pattern reflects the complexity and the variety of functions of the ECS in neuronal activity. In particular, CB1 receptors are present at different levels in several brain regions and in distinct neuronal subpopulations. Endocannabinoids were described to act as retrograde transmitters at synaptic level in many brain regions. Interestingly, the mechanisms governing endocannabinoid-controlled synaptic modulation can vary depending on the region and the neuronal circuit.
At physiological and pathophysiological level, the ECS has recently been shown to play important regulatory roles in several brain processes, including the modulation of memory processing and the control of excessive neuronal activity.
The discovery of the ECS represents a hallmark in neuroscience research, and the exploitation of its numerous physiological and pathophysiological functions is a promising avenue for therapeutic applications.

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