

Role of the endocannabinoid system in the modulation of memory for emotional experiences

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Enhanced memory for emotional events is a well-recognized phenomenon, which has obvious adaptive value in evolutionary terms. However, the efficient encoding of emotional memories can, in certain conditions, become maladaptive. An appropriate emotional response to an aversive event requires fine-tuned neurotransmitter release regulation and functional neuronal circuits. The endogenous cannabinoid system is a crucial modulator of these processes, playing an important role in the modulation of synaptic plasticity and memory function. Emerging evidence demonstrates that the level of stress associated to the environmental conditions plays a crucial role in modulating cannabinoid effects on emotional behaviors. Therefore, in this talk I will discuss to what extent the level of stress, associated to the level of training-induced emotional arousal, might have implications on cannabinoid effects on memory performances in rats. In particular, I will present data demonstrating that variations in the level of emotional arousal, associated to the experimental conditions, shape cannabinoid effects on memory functions.