Cannabinoid modulation of socio-emotional behavior

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The endocannabinoid system consists of cannabinoid receptors, their endogenous lipid ligands (endocannabinoids) and the enzymatic machinery for their synthesis and degradation. In recent years, the endocannabinoid system has emerged as a key modulator of affect, motivation and emotions, that is functional already at early developmental ages. Cannabinoid receptors are indeed highly expressed in brain areas that modulate socio-emotional states, where endocannabinoids regulate ion channel activity and neurotransmitter release. In this talk, I will focus on the role of endocannabinoid neurotransmission in the modulation of different forms of socio-emotional behaviors in rats, spanning from infant isolation-induced ultrasonic vocalizations, that play a key role in mother-offspring interaction, to adolescent social play behavior, that is the most characteristic social activity displayed by developing mammals, to adult forms of social interaction. I will show how animal paradigms of normal and abnormal socio-emotional behavior contributed to clarify the role of the endocannabinoid system in socio-emotional processes, leading to the hypothesis that drugs targeting the endocannabinoid system may be useful to treat the socio-emotional dysfunctions that characterize several psychiatric diseases, particularly at young ages.