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Amygdalar Theta Rhythm

Lauren Koteles, '07

Illinois Wesleyan University

Joseph Williams, Faculty Advisor

Illinois Wesleyan University

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Poster Presentation P51

AMYGDALAR THETA RHYTHM

Lauren Koteles and Joseph Williams*
Psychology Department, Illinois Wesleyan University

Theta rhythm, the intrinsic oscillation of extracellular current at a frequency of 4-12 Hz, has been recorded in a multitude of brain structures. Extensive research of the hippocampal (HPC) form of this phenomenon has shown that its production within this structure is mediated by muscarinic cholinergic inputs from the medial septal area. Although relatively little is known about the production and control of amygdalar theta, reported interactions between HPC theta and amygdalar theta during the consolidation of emotionally-relevant memories leads to suggestions that the two types of theta may have similar underlying mechanisms. This study recorded amygdalar theta using an electrode implanted into the basolateral amygdala of eight male Long-Evans rats. Rats were anaesthetized during all recordings. The dominant frequency and power of theta during intraperitoneal (IP) injections of atropine, a muscarinic cholinergic antagonist, were recorded and compared to control saline injections using an analysis of variance (ANOVA) test. The dominant frequency and power of theta during intracranial injections of tetracaine, a local anaesthetic, into the medial septal area were also recorded and compared to control saline injections.