

ABSTRACT

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Title: PRENATAL EXPOSURE TO A CANNABINOID AGONIST DURING CRITICAL PERIODS OF NEURAL DEVELOPMENT

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Due to increased instances of cannabis use among pregnant women (Brown et al., 2016) and evidence suggesting neuroteratogenic effects of the drug (Campolongo et al., 2011), it is vital to public health that we further examine the potential adverse effects of cannabis use during pregnancy on offspring. WIN 55,212-2, a synthetic CB1/2R agonist, has been used previously to model the neurological effects of cannabis use, acting as a substitute for delta-9-tetrahydrocannabinol (THC) (Mereu et al., 2003; Bernard et al., 2005; Vargish et al., 2017). Our study examines the effects of prenatal exposure to WIN 55,212-2 on neurological and behavioral development, with a focus on the hippocampus and hippocampal-dependent tasks of Sprague-Dawley rat offspring. Pregnant dams were either administered subcutaneous injections of the substance during early development (GD 0-6) late development (GD 15-21), or vehicle at both periods. The offspring of each group was subjected to a number of assessments, including body weight, gross brain weight, hippocampal weight, a voluntary alcohol intake test, a light/dark chamber test, and a Morris water maze task. The results of this study will provide insight into the effects of activating the endocannabinoid system during prenatal development, which will lead us to a more informed picture of the risks of using cannabis while pregnant.