exposure to this substance of abuse are still inconclusive and controversial. In particular, the implications of possible long-term consequences of in utero exposure to cannabis derivatives on brain circuitry are poorly understood.

In this study the synthetic CB1 agonist WIN 55.212-2 (WIN) was administered daily to pregnant rats from gestational day 5 to 20 (0.5 mg/kg). This dose is equivalent to a moderate or low exposure to marijuana in humans and has no overt toxic effects. The treatment with WIN did not affect gestational and reproduction parameters and WIN-exposed pups did not show any sign of malformations or malnutrition. The offspring were sacrificed at 40 and 80 days-old. Behaviorally, prenatal treatment with WIN initially altered pup performance in homing behavior and produced a decrease in the rate of separation-induced ultrasonic vocalizations. Behavioral deficits that resulted were long-lasting, since prenatal WIN exposure caused a disruption of memory retention in young and adult offspring subjected either to a passive or an active avoidance task.

Morphologically, compared to age-matched controls, an analysis of dendritic branching of Golgi-impregnated hippocampal granule cells of the dentate gyrus in prenatal WIN-exposed rats showed a significant increase in the amount of dendritic arbor and in the complexity of the dendritic trees at both ages. These findings suggest that mild to moderate exposure to cannabinoids during crucial periods of brain development can cause dysmorphic dendritic growth and/or the failure of these neurons to undergo normal maturational dendritic pruning. Such subtle morphological alterations and commensurate changes in brain circuitry would be, in turn, a factor underlying the behavioral deficits observed both in juvenile and adult rats. The findings suggest that even mild prenatal exposure to a cannabinoid agonist may result in long-term deleterious consequences with respect to structure and function.

Morphologically compared to age-matched controls, an analysis of dendritic branching of Golgi-impregnated hippocampal granule cells of the dentate gyrus in prenatal WIN-exposed rats showed a significant increase in the amount of dendritic arbor and in the complexity of the dendritic trees at both ages. These findings suggest that mild to moderate exposure to cannabinoids during crucial periods of brain development can cause dysmorphic maturation of the granule cells associated with exuberant dendritic growth and/or the failure of these neurons to undergo normal maturational dendritic pruning. Such subtle morphological alterations and commensurate changes in brain circuitry would be, in turn, a factor underlying the behavioral deficits observed both in juvenile and adult rats. The findings suggest that even mild prenatal exposure to a cannabinoid agonist may result in long-term deleterious consequences with respect to structure and function.

**[P1.71]**
MYC increases self-renewal in neural progenitor cells through Miz-1

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Keywords: Myc; Miz-1; Self-renewal; Neurospheres

The mechanisms underlying the decision of a neural stem or progenitor cell to either self-renew or differentiate are incompletely understood. To address the role of c-myc (Myc) in this process, we expressed different forms of the proto-oncogene c-myc in multipotent neural progenitor cells (NPCs) using retroviral transduction. In the neurosphere model, the proportion of self-renewing cells increased five fold by Myc transduction and 1% of the Myc overexpressing cells, but none of the control cells, retained self-renewal capacity even under differentiation inducing conditions. A Myc mutant deficient in binding to Miz-1 (MycV394D), was able to stimulate short term proliferation of NPCs as efficiently as wild type Myc, but did not enhance self-renewal, thus indicating that these two cellular phenomena are at least partially regulated by different pathways. Our results suggest that Myc, through Miz-1, enhances self-renewal of NPCs and influences the way how progenitor cells react to the environmental cues which normally dictate the cellular identity of tissues containing self-renewing cells.

**[P1.72]**
Differential effects on stem and progenitor cells in the subventricular zone and hippocampus after ionizing radiation

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Keywords: Stem/progenitor cells; Ionizing radiation; Neurogenesis

Introduction: Radiation therapy is one of the most effective tools in the treatment of malignant CNS tumors. Mature neurons are in a permanent state of differentiation, whereas stem and progenitor cells have a high proliferative capacity and are therefore highly vulnerable to irradiation. In most brain regions the generation of neurons is complete at birth; however, in a few discrete regions such as the hippocampus and the subventricular zone (SVZ) of the lateral ventricle, new neurons are continuously generated...