

Abstract Information

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Participation :	symposium
Title of the Symposium :	Environmental toxins and brain alterations: from mild cognitive effects to severe consequences on neuronal cell death
Category :	Academic/Researcher
Thematic Area :	Pollutants, Neurotoxicity, and Brain Disorders
Title :	Chronic Glyphosate Exposure Associated with Neurobehavioral and Cognitive Impairments
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Abstract :	Glyphosate-based Herbicide (GBH) is a widely used pesticide that functions as a broad-spectrum, non-selective herbicide. Despite advanced research to describe the neurotoxic potential of GBH, the harmful effects on maternal behavior and neurodevelopment of offspring remain unclear. This study was conducted to highlight the effects of GBH on the antioxidant system, anxiety traits, social interaction, and cognitive and sensorimotor functions in pups exposed to 25 or 50 mg/l daily via their mother's milk. Concerning the biochemical biomarkers, GBH administered during the early stages of development negatively affected the status of antioxidant enzymes and lipid peroxidation in the brain structures of the pups. Furthermore, our results showed a significant decrease in acetylcholinesterase (AChE) specific activity within the brains of treated pups. The results of the behavioral tests indicated that the treated offspring developed anxiety, memory, and sociability disorders, as evidenced by the Open Field, Y-maze, object recognition task, and social interaction tests. Through neurodevelopmental testing, we also showed sensorimotor impairment (righting reflex and negative geotaxis) and abnormal maternal behavior. Altogether, our study clearly demonstrates that the developing brain is sensitive to GBH.
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