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## Poster Presentation

# The Antioxidant Effect of Nanomicelle Curcumin in Bisphenol A-Induced Brain Toxicity Following Subacute Exposure in Rats

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### *Abstract*

Bisphenol A (BPA) is used in the manufacture of polycarbonate plastics and epoxy resins; therefore, exposure to BPA is increasing every day. BPA has toxic effects on various human tissues. Curcumin, a yellow polyphenol, is the active turmeric ingredient. It is an efficacious and safe compound with multiple pharmacological activities including antioxidant, ant carcinogenic, ant proliferative, and anti-inflammatory properties. This study was designed to determine the potential protective effect of nanomicelle curcumin on BPA-induced subacute brain toxicity in rats. The wistar rats were divided into six groups (8 rats/group). The first group served as the control (dextrose 5% + sesame oil); the second group received 50 mg/kg nanomicelle curcumin; the third group was fed 50 mg/kg BPA; the fourth, fifth, and sixth groups received 10, 25, and 50 mg/kg nanomicelle curcumin, respectively, supplemented with 50 mg/kg BPA, after one hour. At the end of the study period (4 weeks), MDA level and GSH content were measured in the cerebellum, cortex and hippocampus. This study revealed that the dose of 50 mg/kg of BPA significantly increased malondialdehyde in the cerebellum ($P< 0.001$), cortex ($P< 0.001$) and hippocampus ($P< 0.01$). In addition, BPA decreased glutathione content in the cerebellum ($P< 0.001$), cortex ($P< 0.001$) and hippocampus ($P< 0.01$) as well. However, nanomicelle curcumin (50 mg/kg) significantly improved these toxic effects of BPA in rat brain tissue. The results provide evidence that nanomicelle curcumin has preventive effects in subacute exposure to BPA (50 mg/kg) induced toxicity in rat brain tissue.

***Keywords:*** Bisphenol A, Nanomicelle Curcumin, Malondialdehyde, Glutathione, Reactive Oxygen Species, Brain Toxicity, Rat

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