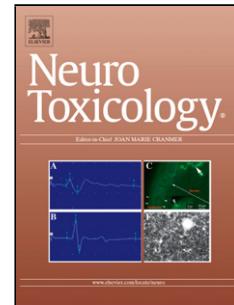


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**Fluoride activates microglia, secretes inflammatory factors and influences synaptic neuron plasticity in the hippocampus of rats**

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**Highlights**

- In this study, hippocampal-dependent memory status was evaluated in rat models sub-chronically exposed to fluoride in their drinking water. Microglial activation in the hippocampus.
- Fluoride exposure activated microglia and increased the expression of DAP12 and TREM2, as well as promoted pro-inflammatory cytokines secretion via ERK/MAPK and P38/MAPK signal pathways.
- Fluoride depressed LTP and decreased PSD-95 protein levels as well as expression of ionotropic glutamate receptors GluR2 and NMDAR2 $\beta$ . We concluded that the role of fluoride on synaptic plasticity may be associated with neuroinflammation induced by microglia.

**ABSTRACT**

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