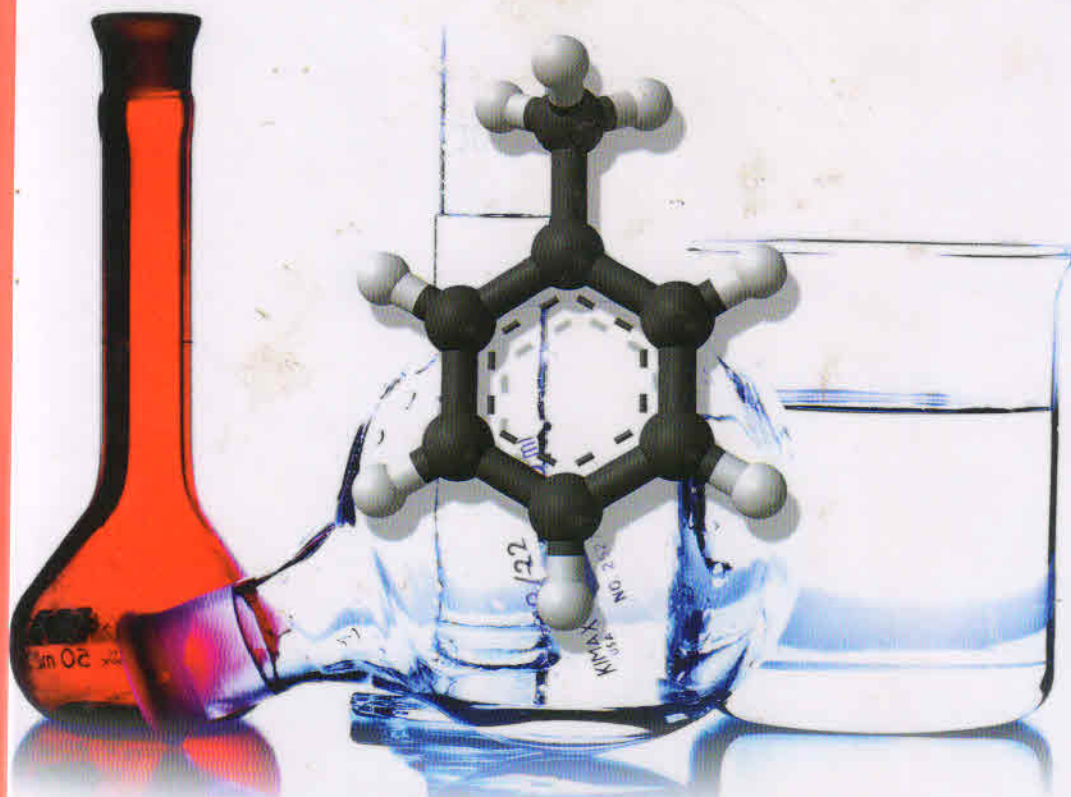


Chemistry Research and Applications

TOLUENE

*Chemical Properties, Applications
and Toxicology*



Marco C. Palminteri
Editor

NOVA

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Chapter 2

**IMMEDIATE AND PERSISTING EFFECT OF
TOLUENE CHRONIC EXPOSURE ON
HIPPOCAMPAL CELL LOSS, LEARNING AND
MEMORY IN ADOLESCENT AND ADULT RATS**

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ABSTRACT

The present study has been undertaken to determine whether toluene chronic exposure provokes immediate and/or persistent effect on the structure of hippocampus, learning and memory in adolescent and adult rats. We exposed male Wistar rats at ages P 28-32 (adolescents) and P 70-75 (adults) to 2000 ppm inhaled toluene for 40 days. The immediate and persisting effects of toluene misuse (immediately after the end of toluene chronic inhalation and 90-day after the end of toluene chronic inhalation, correspondingly) on (i) pyramidal cell loss in the CA1 and CA3 of the hippocampus, (ii) exploratory behavior and recognition memory in the open field and (iii) behavior in multi-branch maze were evaluated. The