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**Proliferating cell nuclear antigen expression on tongue of mice after intake  
of, or topical exposure to, alcohol**

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## **ABSTRACT:**

The purpose of the current study was to evaluate the effects of alcohol on cellular proliferation. Sixty mice were separated into three groups of 20 mice in each. The first group, exposed to alcohol continuously, ingested 40% [volume/volume (vol./vol.)] alcohol instead of water during the experiment. For the second group, exposed to alcohol topically, alcohol was applied to the dorsum of the tongue twice a week. The third group served as the control group. We used the proliferating cell nuclear antigen (PCNA) immunohistochemical expression technique to perform quantitative measurements of cellular proliferation in the basal and intermediate layers of the epithelial tissue of the tongue. Cell proliferation was quantified at three different time points: just before the beginning of the experiment and at 6 and 12 months. Results were compared for mice in each group and for the three groups. At 12 months, we observed an increase in cellular proliferation in the intermediate layer of the epithelium of mice in the group that consumed alcohol ( $P=.01$ ). Results for topical alcohol-exposed and control groups did not show significant differences in cellular proliferation at any time point during the study. We concluded that the effects of alcohol on cellular proliferation may be caused by continuous intake of alcohol and occur throughout life.