

Aspartame administered in feed, beginning prenatally through life span, induces cancers of the liver and lung in male Swiss mice.

[Soffritti M](#), [Belpoggi F](#), [Manservigi M](#), [Tibaldi E](#), [Lauriola M](#), [Falcioni L](#), [Bua L](#).

Cesare Maltoni Cancer Research Center, Ramazzini Institute, Bentivoglio, Bologna, Italy.
soffrittim@ramazzini.it

Abstract

BACKGROUND: Aspartame (APM) is a well-known intense artificial sweetener used in more than 6,000 products. Among the major users of aspartame are children and women of childbearing age. In previous lifespan experiments conducted on Sprague-Dawley rats we have shown that APM is a carcinogenic agent in multiple sites and that its effects are increased when exposure starts from prenatal life.

OBJECTIVE: The aim of this study is to evaluate the potential of APM to induce carcinogenic effects in mice.

METHODS: Six groups of 62-122 male and female Swiss mice were treated with APM in feed at doses of 32,000, 16,000, 8,000, 2,000, or 0 ppm from prenatal life (12 days of gestation) until death. At death each animal underwent complete necropsy and all tissues and organs of all animals in the experiment were microscopically examined.

RESULTS: APM in our experimental conditions induces in males a significant dose-related increased incidence of hepatocellular carcinomas ($P < 0.01$), and a significant increase at the dose levels of 32,000 ppm ($P < 0.01$) and 16,000 ppm ($P < 0.05$). Moreover, the results show a significant dose-related increased incidence of alveolar/bronchiolar carcinomas in males ($P < 0.05$), and a significant increase at 32,000 ppm ($P < 0.05$).

CONCLUSIONS: The results of the present study confirm that APM is a carcinogenic agent in multiple sites in rodents, and that this effect is induced in two species, rats (males and females) and mice (males). No carcinogenic effects were observed in female mice. *Am. J. Ind. Med.* 53:1197-1206, 2010. © 2010 Wiley-Liss, Inc.

PMID: 20886530 [PubMed - in process]