

Evaluation of Bisphenol A in Male and Female Rats

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Studies in this project address effects of bisphenol A (BPA) arising from very different dosing designs (drinking water vs. gavage). Bisphenol A is a monomer used to manufacture resins that have broad application in the food packaging industry as a constituent of plastic coatings. Exposure to endocrine modulators during prenatal and postnatal development is the most sensitive period to alter normal development and function of the reproductive system. Potentially irreversible effects of hormonally active chemicals such as BPA on the reproductive system are a major concern. At high doses BPA has weak estrogenic activity in vitro and has adversely affected reproduction in mice. The research is being conducted in Sprague-Dawley rats. Pre- and postnatal exposure-induced reproductive toxicity in the offspring following maternal BPA intake via drinking water during sexual differentiation were evaluated. A very wide range of doses (extending over four orders of magnitude) was administered by a relevant route and mode of entry, including daily intake levels in the range of worst case scenario human dietary intake. Such exposure was contrasted with high dose bolus administrations. These comprehensive in vivo studies with a complex set of end points are designed to test the hypothesis that BPA exposure might interact with estrogen/androgen receptors during pre- and early postnatal development and elicit reproductive functional consequences. The data from these studies in rats will provide critical information that will be used in the ongoing debate about low dose effects of BPA and for future human risk assessment.

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Presentation(s):

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Other publication(s): None to date.

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