Household chemical may affect breast development

December 6 2007

A chemical found in household fittings has been found to affect the development of the mammary gland in rats and further studies will be required to determine if the presence of this chemical could lead to breast cancer. New research published in the online open access journal *BMC Genomics* is the first to show that this chemical can affect the breasts' genomic profile.

Jose Russo and coworkers from the Fox Chase Cancer Center in Philadelphia, along with colleagues from the University of Alabama in Birmingham, US, fed lactating rats with butyl benzyl phthalate (BBP), which their offspring then absorbed via breast milk. The offspring ingested levels of chemical estimated to be nearly equivalent to the Environmental Protection Agency's safe dose limit of BBP for humans.

The researchers found that BBP had a transitory effect on certain characteristics of the female offspring of the rats, such as the ratio of uterine weight to body weight and the genetic profile of the mammary gland. Dr Russo stated: "We are the first to report that neonatal/prepubertal exposure to BBP induced modifications in the gene expression of the mammary tissue."

Although these effects wore off once exposure to BBP was removed, the subtle changes in the mammary gland may have an effect later in life.

BBP is widely used as a plasticizer, an additive used to soften polymers, and is found in household fittings such as pipes, vinyl floor tiles and

carpet backing. This type of chemical is known to be an endocrine disruptor, which mimics the effect of hormones. Endocrine disruptors are known to damage wildlife and they have also been implicated in reduced sperm counts and neurological problems in humans.

Source: BioMed Central