

## World Congress on **Breast Cancer**

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### **Effect of butylphenylmethylpropional on DNA damage and repair in immortalised non-transformed human breast epithelial cells**

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Chemical constituents of personal care products may be a contributory factor in breast cancer development. Butylphenylmethylpropional (Lilial) (CAS 80-54-6) is added for purposes of fragrance at up to 2.5% concentration to a range of cosmetic products. It has been shown previously to possess oestrogenic activity, and exposure to oestrogen is a risk factor for breast cancer. However, it has not previously been investigated in breast cells for effects on genomic stability which is an enabling characteristic underlying cancer development. We report here that exposure to Lilial of either MCF10A or MCF10F immortalised, non-transformed human breast epithelial cells causes dose-dependent DNA damage as measured in a comet assay, and enables dose-dependent cell growth in suspension culture which is a characteristic of cell transformation. Furthermore, long-term (28-30 weeks) exposure to Lilial at  $10^{-5}$  M concentrations results in loss of expression of the breast cancer susceptibility genes BRCA1 and BRCA2 which are key genes in repair of DNA in breast cells. Alterations to expression of other DNA repair genes will be discussed. Research is now needed to determine the extent to which this compound can enter human breast tissues. If it is present in the human breast and can both damage DNA and compromise DNA repair systems, then there is the potential for it to impact on breast carcinogenesis.

#### **Biography**

Abdullah Farasani graduated in 2009 with a Master's Degree in Biomedicine from the University of Portsmouth, UK and is now based at the University of Jazan in Saudi Arabia. He is currently pursuing his PhD studies at the University of Reading, UK, supported financially by Jazan University.

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