

THE INFLUENCE OF β -CAROTENE AND THE TUMOUR PROMOTER, TPA, ON THE INDUCTION OF MICRONUCLEI IN MOUSE EPIDERMAL KERATINOCYTES

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TPA, 12-*O*-tetradecanoylphorbol-13-acetate is a commonly used promoting agent for the induction of skin papillomas. In our animal model (HRA/Skh mice) however, this compound has also been shown to exhibit genotoxic activity in epidermal keratinocytes. Furthermore, beta-carotene was able to suppress the induction of papillomas. We were interested to investigate if this suppression by beta-carotene occurred at either the promotional or genotoxic level.

Three groups of mice were fed diets shown to suppress tumour promotion. After 30 weeks they were treated with either 50 μ l acetone (control) or 0.5 μ g TPA. After another 48 h, the mice were killed and their epidermal keratinocytes were assayed in a newly developed *ex vivo* micronucleus assay. All control mice exhibited a background incidence of 5.0 - 6.6 micronuclei (MN)/1000 binucleated (BN) cells, compared with 12.6 - 16.0 MN/1000 BN cells in mice treated with TPA. The results indicate that beta-carotene interferes with the promotional effects of TPA.

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