

## Inhibition of carcinogen induced c-Ha-ras and c-fos proto-oncogenes expression by dietary curcumin

### ABSTRACT

Our research has revealed that curcumin can significantly reduce DMBA- and TPA-induced ras and fos gene expression in mouse skin.

### INTRODUCTION

Carcinogens are the most common cause of cancer worldwide. In the last decade, many studies have been published that suggest that curcumin may be able to inhibit cancer-causing molecules and modulate the pathogenesis. The aim of this study was to examine the effect of curcumin on c-Ha-ras and c-fos proto-oncogenes expression in human breast cancer cells.

### Methods:

The study was carried out on a human breast cancer cell line derived from a patient with metastatic breast cancer. The cells were treated with 2 mg/ml curcumin, and then the expression of C-ha-ras and C-fos proto-oncogenes was determined by Western blotting. The yellow pigment turmeric, also known as curcumin, is derived from the roots of *Curcuma longifolia* and is used in various Asian cultures as a spice, cheese, butter, or other products. It has antioxidant, free radical and inflammatory properties that allow it to inhibit carcinogenesis.

### CONCLUSION

Through topical application on mouse skin, Kakar and Roy found that curcumin inactivates TPA-induced oncology by inhibiting c-fos, junctomycis and a co-extensor oncobacteria. Their study concludes that dietary curcumin is effective in blocking DMBA- inducer of ras and fos gene expressions in mouse tissue, as it may prevent folic acid from entering specific sites on the signal transduction pathway (for example, T