

MEETING ABSTRACTS

PROTECTIVE EFFECT OF NATURAL COMPOUNDS: A CURCUMIN STUDY

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Since cancer is one of the most common medical causes of death worldwide, its prevention remains the most promising strategy for reducing its incidence and mortality. The study of the potential protective effects of natural compounds, that could be used in health protection, is therefore very important. Plants represent a source of secondary metabolites possessing such properties and curcumin isolated from plant *Curcuma longa* L. with many beneficial biomedical effects is one of them.

The objectives of our study were (I) to investigate the potential DNA-damaging/DNA-protective effects of curcumin using DNA topology assay; (II) to determine the possible mechanism of its protective activity using cell-free methods and (III) to evaluate its potential anti/genotoxic effect by comet assay on human lymphocytes.

Curcumin displayed DNA-protective effects against ROS induced by ferrous ions on plasmid DNA that increased in a concentration-dependent manner. Higher doses showed significant reducing power and DPPH radicals scavenging activity. Curcumin did not exhibit any chelating activity. Moreover, genotoxic effects of curcumin were observed in human lymphocytes. On the other hand, using the same concentration range, curcumin exhibited ability to protect human cells against H₂O₂ mostly in the higher concentrations. Our results represent basis in examining the effects of curcumin on biological systems, and therefore further research is needed to explain its dual effects.

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