

EVENT ABSTRACT

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Effects of sinapic acid on oxidative DNA damage in V79 cell line

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Phenolic compounds, due to their antioxidant properties, play an important role in the prevention of various degenerative disorders or diseases related to oxidative damage. Sinapic acid (SA), a phenolic compound, is widely distributed in the plant kingdom and commonly consumed in human diets. SA has been described as a chain-breaking antioxidant that probably acts as a radical scavenger. SA was reported to exhibit a protection against H₂O₂-mediated cytotoxicity in a dose-dependent manner. SA is believed to be therapeutically beneficial and non-toxic. However the data about the genotoxicity of SA are limited. In this study, the genotoxic/antigenotoxic activities of SA were evaluated in V79 cells by alkaline single cell gel electrophoresis. No significant increase in DNA strand breakage expressed as DNA tail intensity was observed below 1000 μM; however, at the concentrations of 1000–5000 μM SA alone caused an increase in DNA damage in a dose-dependent manner. At the concentrations of 50–2000 μM, SA seemed to significantly decrease H₂O₂-induced DNA damage. However, at the highest concentration of 5000 μM, SA did not decrease H₂O₂-induced DNA damage in V79 cells. In conclusion, at low concentrations SA might protect against various oxidative stress related-diseases by reducing oxidative DNA damage.

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