

Boldo prevents UV light and nitric oxide-mediated plasmid DNA damage and reduces the expression of Hsp70 protein in melanoma cancer cells

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Objectives This study was designed to investigate the potential protective effect of a methanolic extract of *Peumus boldus* leaves on UV light and nitric oxide (NO)-mediated DNA damage. In addition, we investigated the growth inhibitory activity of this natural product against human melanoma cells (M14). **Methods** Boldine, catechin, quercetin and rutin were identified using a HPLC method. The extract was incubated with plasmid DNA and, before irradiating the samples with UV-R, H₂O₂ was added. For analysis of DNA single-strand breaks induced by NO, the experiments were performed by incubating the extract with Angeli's salt. In the study on M14 cell line, cell viability was measured using MTT assay. Release of lactate dehydrogenase, a marker of membrane breakdown, was also measured. For the detection of apoptosis, the evaluation of DNA fragmentation (COMET assay) and caspase-3 activity assay were employed. The expression of heat shock protein 70 (Hsp70) was detected by Western blot analysis