MECHANISMS OF ACETYLEUGENOL POLY(EPSILON-CAPROLACTONE) LIPID-CORE NANOCAPSULES ON MELANOMA DEVELOPMENT

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Eugenol displays antiproliferative and pro-apoptotic activities in different types of cancer cells, although effects of Acetyleugenol (AC) and Acetyleugenol Nanocapsules (NCAC) have not been elucidated. Here the role of NCAC on *in vivo* melanoma model and their actions on *in vitro* melanoma and endothelial cell cultures were investigated. Murine melanoma cells (B16F10, $8X10^5$/100µL) were s.c. injected in the dorsal region of C57BL6 mice. Animals were p.o. treated with Saline, AC, NCAC (50 mg/kg/day) or with their respective controls during 7 days. *In vitro* human endothelial cells (HUVEC) and melanoma cells (SK-Mel-28) were incubated with RPMI, DMSO, NC, AC or NCAC. Cell viability, nitric oxide (NO), cell proliferation and cell adherence were monitored. P.o administration of NC or NCAC reduced melanoma growth more than AC, and NC, AC or NCAC treatments decreased the number of circulating leukocytes. Only NCAC (100µM and 300µM), treatment reduced the endothelial and melanoma cell viability. NC and NCAC (60µM) treatments reduced the cell proliferation in endothelial and melanoma cells and AC (60µM) treatment reduced cell proliferation only in melanoma cells. AC and NCAC (60µM) treatments inhibited endothelial and melanoma cells adherence. Both NC and NCAC (10, 30 and 60µM), but not AC, treatments increases the NO production by endothelial and melanoma cells. Together, data obtained show that the efficiency of NCs on tumor cell growth detected by p.o. may be due to their activity on cell proliferation and by inducing NO production.
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