## CASTANEA SATIVA MILL. BARK EXTRACT EXHIBITS CHEMOPREVENTIVE PROPERTIES TRIGGERING EXTRINSIC APOPTOTIC PATHWAY IN JURKAT CELLS

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Chemoprevention represents the possibility to prevent, stop or reverse the cancerogenetic process. In this context the interest towards natural extracts and botanical drugs has constantly grown due to their phytochemical content. Castanea sativa Mill. (CSM) extracts showed to exert positive effect in the prevention/counteraction of chronic/degenerative diseases, therefore, we evaluated the potential chemopreventive effect of CSM bark extract.

Flow cytometry (FCM) analyses of Jurkat cells treated with CSM bark extract (0–500 µg•mL–1) for 24–72 h allowed evaluating its cytotoxicity and ability to induce apoptosis through the intrinsic or extrinsic pathways. Moreover, to evaluate CSM bark extract selectivity towards cancer cells, its cytotoxic and pro-apoptotic effect was also evaluated in human peripheral blood lymphocytes (PBL).

CSM bark extract induced apoptosis in Jurkat cells in a dose- and time- dependent manner activating the extrinsic pathways as evidenced by the increase of activated caspase-8 positive cells. Moreover, IC50calculated after 24 h treatment resulted 304 and 128  $\mu$ g•mL-1 in PBL and Jurkat cells respectively.

Our data suggest that CSM bark extract might be considered an interesting potential anti-cancer agent, since it induces apoptosis in cancer cells without appreciable cytotoxic effects on non-transformed cells.