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Antiangiogenic Activities of Natural Compounds

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In the present work, we tested different chalcones for their antiproliferative and antiangiogenic effects.

Among the tested compounds, 4-hydroxychalcone (4-H) was the most potent angiogenic inhibitor. At non-toxic concentration inhibited proliferation and migration of HUVECs as well as the differentiation into tube structures. Furthermore, we observed that 4-H inhibited the phosphorylation of Akt and ERK1/2 pathways in response to VEGF or bFGF. The potent inhibitory effect of 4-HC on neovascularization has also been demonstrated *in vivo* using the CAM assay.

Furthermore, E-2-(4'-methoxybenzylidene)-1-benzosuberone (MB) was the most active antiproliferative compound with $IC_{50}=10^{-7}$ mol/L in Jurkat cells. Furthermore, in non-toxic concentrations it inhibited VEGF-induced migration of human umbilical vein endothelial cells (HUVECs). Moreover, it also decreased secretion of MMP-9 and VEGF.

In conclusion, both chalcones are promising candidates for future study focused on elucidating the more detailed mechanism of action.

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