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Olive oil oleuropein has anti-breast cancer properties with higher efficiency on ER-negative cells

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Breast cancer constitutes a major health problem for women worldwide. However, its incidence varies between populations and geographical locations. These variations could be diet-related, since there are several carcinogenic compounds in the modern diet, while natural products contain various anti-cancer elements. Several lines of evidence indicate that, in addition to their clear preventive effect, these compounds could also be used as therapeutic agents. In the present report we have shown that oleuropein, a pharmacologically safe natural product of olive leaf, has potent anti-breast cancer properties. Indeed, oleuropein exhibits specific cytotoxicity against breast cancer cells, with higher effect on the basal-like MDA-MB-231 cells than on the luminal MCF-7 cells. This effect is mediated through the induction of apoptosis via the mitochondrial pathway. Moreover, oleuropein inhibits cell proliferation by delaying the cell cycle at S phase and up-regulated the cyclin-dependent inhibitor p21. Furthermore, oleuropein inhibited the anti-apoptosis and pro-proliferation protein NF-κB and its main oncogenic target cyclin D1. This inhibition could explain the great effect of oleuropein on cell proliferation and cell death of breast cancer cells. Therefore, oleuropein warrants further investigations to prove its utility in preventing/treating breast cancer, especially the less-responsive basal-like type.

Biography

Maha H Elamin received B.Sc from Cairo University, Egypt. M.Sc and Ph.D, from Gezira University, Sudan. The Ph.D was in Medical and molecular parasitology. I have joined the department of Molecular Oncology at King Faisal Specialist Hospital and Research Center, Riyadh, KSA as a researcher in breast cancer for 7 years. Currently, Iam working as an Associate professor in Zoology department, King Saud University, Riyadh, KSA.

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