Title: Cytotoxic activities of 2-benzylidene-6-(nitrobenzylidene)cyclohexanones against three human cancer cell lines

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Abstract: Background: Chalcones represent a class of cytotoxic compounds that are useful for cancer chemotherapy. The advantage of chalcones is the low propensity to interact with DNA; which decreases the risk of mutagenesity as the common side effect of current chemotherapeutic agents. A new series of compounds (2-benzylidene-6-(nitrobenzylidene) cyclohexanones) were synthesized with structural modifications of chalcones. In this study, we investigate the cytotoxic activities of these compounds against three cancer cell lines.

Methods: The dose dependent anticancer effects of these compounds were studied against SK-N-MC, MDA-MB-231 and K562 human cancer cell lines using MTT colorimetric assay. Etoposide was used as standard anticancer drug. The IC50 (50% inhibitory concentration) value were determined for each compound.

Results: All compounds with the exception of two showed significant cytotoxicity activity against tested cancer cell lines (IC50 values = 1.4-28.3 µg/ml). Most compounds displayed greater cytotoxicity than etoposide (IC50 = 21.9 µg/ml).

Conclusion: 3-(4-alkoxy-3-bromo-5-methoxybenzylidene)-4-chromanones compounds may be considered promising for the development of new anticancer agents.

Cytotoxic agents, Cancer

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