2-methoxy-1,4-naphthoquinone (MNQ) Suppresses Protein Kinase C βI, δ, and ζ expression in Raji cells

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Abstract

Protein Kinase C (PKC) is widely documented to be involved in the regulation of cancer cell growth, proliferation, survival, inflammation and apoptosis. This study evaluates the capability of 2-Methoxy-1,4-Naphthoquinone (MNQ) in regulating PMA-induced PKC expression in human Burkitt's lymphoma cell line (Raji cells). MNQ exhibited stronger anti-tumour-promoting activity than genistein based on the inhibitory assay of Epstein-Barr virus (EBV) activation. The IC50 values attained were 2.92 and 7.40 μM, respectively. The suppressive effects of MNQ on PKC expression was determined by using the PepTag® non-radioactive detection of PKC assay. The IC50 values achieved for staurosporine and rottlerin (standard control), and MNQ were 0.01, 6.38, and 13.13 μM, respectively. These preliminary results indicate that MNQ specifically suppressed the expression of PKC βI, δ, and ζ in a concentration-dependent manner in Raji cells. © 2015 Wong Teck Yew et al.

Author keywords

- 2-Methoxy-1,4-Naphthoquinone
- Antitumour-promoting
- Cancer chemoprevention
- Protein kinase C