Antiproliferative and antibacterial activity of some *para* substituted Benzylideneacetophenones and establishing their structure activity relationship (SAR) Among

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Abstract

We herein reports *in-vitro* antiproliferative and antibacterial activity of *para* substituted benzylideneacetophenones and established their structure activity relationship (SAR) to optimize *para* position as a *biologically-oriented-synthetic* target for design of small molecule based future anticancer/antibacterial agents. Among synthesized compounds, **1c** exhibits excellent antiproliferative activity against human osteosarcoma cell line (MG-63) compared to **1b** and **1a** suggesting dimethylamino **(-N(CH_3)$_2$** functionality as a better *para*-substituted analogue for *in-future* anticancer agents. Similarly antibacterial screening of aforesaid compounds against against different strains of Gram negative and Gram positive bacteria reveals methoxy **(-OCH_3)** rather than dimethylamino **(-N(CH_3)$_2$** as a better *para*-substituted functionality on ring B comparatively. Furthermore, we in this study concluded and justify our theory "*lipophilicity affects antibacterial activity*".

Keywords

Benzylideneacetophenone, Antiproliferative, MTT assay, Antibacterial assay