

# *In vitro* Evaluation of Potential Antitumor or Anti-inflammatory Novel Drug Candidates †

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**Abstract:** The search for novel antitumor and/or anti-inflammatory compounds (including natural and synthetic) is a major challenge in life sciences. Here we employed *in vitro* investigation of original synthetic compounds, and some novel means of end-point measurement were used. Computer modeling for candidates was achieved using Spartan 14, followed by synthesizing the best candidates in the series. Additional investigations (data not presented) were performed before *in vitro* assessment. *In vitro* evaluation was performed using Jurkat cells exposed to the quinolonic compounds HPQ16, HPQ11, 6FPQ16, 6FPQ11, and 5 fluorouracil (5FU). Antitumor and cytotoxic activities were evaluated for four selected compounds applying the standard methodology. Also, supernatants of the cell cultures were used in a set of pharmacoproteomic experiments using the ProQuantum kits for IL2 and IFN-gamma according to the manufacturer's instructions. The set of the mentioned compounds was synthesized and further applied to *in vitro* testing and outlined the antitumor activity of 6FPQ16 (EC50 200 microG/mL, cell viability below 30% compared to control). Further, the evaluation using toxico-proteomic methods revealed stimulation of cytokine secretion (IL2 and IFN gamma) in the supernatants of treated cells, compared to the control. In conclusion, applying a set of computer modeling, synthesis followed by *in vitro* testing was possible to outline the potential to stimulate IL2 and IFN gamma production and the antitumor actions of original compounds.

**Keywords:** cytotoxicity; antitumor activity; toxico-proteomic; original synthetic compounds.

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## Conflicts of Interest

The authors declare no conflict of interest.