ABSTRACT

Synthesis and cytotoxic activity test of 10-N- (4’-fluorobenzoyl) folic acid on HeLa cells
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It is necessary to modify the folic acid molecule to produce another analogue that is expected to provide an optimal activity but have low toxicity. Folic acid modification begins with drafting a compound where folic acid is added the group which have lipophilic properties, electronic and steric certain. Then tested in silico to predict bond strenght analogous to receptors. Then do the synthesis of these compounds with acylation method and its analogue results tested the activity with in vitro assay in HeLa cells that compared to the positive control (methotrexate) with MTT assay method. Results compound from synthesis is 10-N- (4’-fluorobenzoyl)folic acid with 9% yield and proved by TLC and ^1H-NMR spectrophotometric test. Then results compound from synthesis tested with MTT assay test against HeLa cell culture that compared with methotrexate at a level of 1000 ppm until 10 ppm. The result from MTT assay test can not be analyzed because the method does not show the good hindrance between 10-N- (4’-fluorobenzoyl) folic acid and methotrexate. This research resulted in 10-N- (4’-fluorobenzoyl)folic acid as antifolate.

Keyword: Cancer, folic acid, in silico, acylation, 10-N- (4’-fluorobenzoyl)folic acid, MTT assay, HeLa cell.