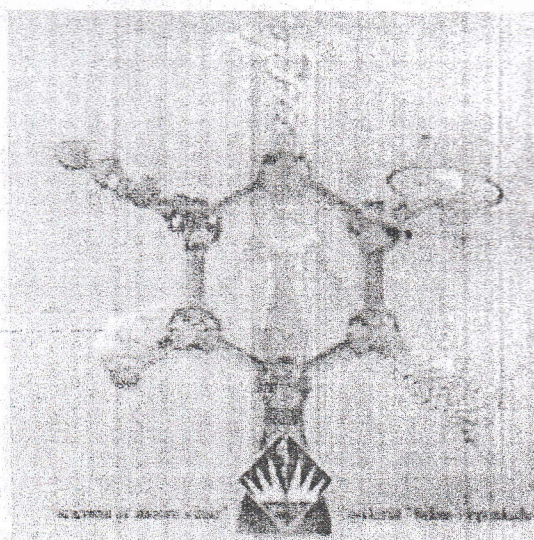


6th International BAU Drug Design Congress

13-14-15 DECEMBER 2018

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P-56

**Investigation of cell migration effects of tekamen and methotrexate on
MDA-MB 231 breast cancer cell line**

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Background:

Combination therapy, a treatment modality that combines two or more therapeutic agents, is a cornerstone of cancer therapy. Tekamen has topoisomerase I activity by stabilizing the cleavable complex between topoisomerase I and DNA, resulting in DNA breaks that inhibit DNA replication and trigger apoptotic cell death. Methotrexate binds to and inhibits the enzyme dihydrofolate reductase, resulting in inhibition of purine nucleotide and thymidylate synthesis and, subsequently, inhibition of DNA and RNA syntheses. Combined treatment can provide benefit and reducing side effects of drugs. The aim of this study is to understand effects of Tekamen and Methotrexate on cell migration on MDA-MB-231 breast cancer cell line.

Methods:

Cell viability was measured by MTT assay 100 µM Tekamen for wound healing, the MDA-MB-231 cell line was cultured being 10⁵ cells in 100 µL in a 6-well culture plate. After cells have 90% confluency, cells treated with 100 µM Tekamen, 60 µM Methotrexate and 75 µM Tekamen+ 60 µM Methotrexate. Widths of scar were observed at 0, 24, 48 and 72 hours by inverted microscope.

Results:

We compared effect of monotherapy and polytherapy of drugs on cell migration and wound size drug-applied breast cancer cell line to control group. We observed amount of cell viabilities after drug treatment are **54,3%**, for 100µM tekamen, **40,89%** for 60µM Methotrexate and **59,47%** for 75 µM Tekamen+ 60 µM Methotrexate combine treatment. We observed to inhibit cell migration with combine treatment at for 72 hours. These results show that combine therapy is more effective than monotherapy because cancer cells are less to have resistance to multiple drugs treatment and this approach increases the chance of effective treatment.