

## عنوان مقاله:

Research Article: Cytotoxic activities of *Padina gymnospora* and *Acanthophora spicifera* extracts against human breast cancer cell lines

## محل انتشار:

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## خلاصه مقاله:

The resistance of cancerous cells to anti-cancer drugs is one of the most common problems in medicine and therefore, finding new anti-cancer compounds with the least side effects seems to be necessary. The present study was performed to investigate the anti-cancer potential of *Padina gymnospora* and *Acanthophora spicifera*, two native algae species of the Persian Gulf, in vitro. In this regard, methanol, chloroform, n-hexane, and ethyl acetate extracts of both algae species were added to cultivated MCF-7 cells at different concentrations (125, 250, 500, and 1000 µg/mL). 3-[4,5-dimethylthiazol-2-yl]-2,5 diphenyl tetrazolium bromide (MTT) assay was used to determine the toxicity effects of algae extracts on MCF-7 cells. DNA isolation and agarose gel electrophoresis were also performed to assess DNA fragmentation induced by these two algae species. Based on the MTT results, the sensitivity of cultivated MCF-7 cells to *P. gymnospora* and *A. spicifera* extracts was increased in a dose-dependent manner. The highest concentration of methanolic extract of both algae species significantly affected the MCF-7 cells and led to the highest cell death. Moreover, the IC<sub>50</sub> of *P. gymnospora* and *A. spicifera* methanolic extracts for the MCF-7 cells were equal to 557.78 and 910.61 µg/ml, respectively, which indicates *P. gymnospora* has more cytotoxic activity and anti-tumor potency. The lowest concentration of all types of algae extracts was not considerably cytotoxic to cultivated MCF-7 cells. The DNA fragmentation of MCF-7 cells was increased with increasing the concentration of the algal extracts. The highest amount of DNA fragmentation caused by 1000 µg/mL of *P. gymnospora* and *A. spicifera* extract; however, methanolic extract of *P. gymnospora* caused more DNA fragmentation in MCF-7 cells than *A. spicifera*.

## کلمات کلیدی:

Cytotoxic activity, Secondary metabolites Algae, MTT assay, MCF-7

## لینک ثابت مقاله در پایگاه سیویلیکا:

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