Ajeesh Kumar K K, J Glycobiol 2015, 3:3
http://dx.doi.org/10.4172/2168-958X.S1.003

OMICS International
conferenceseries.com

Glycobiology World Congress

August 10-12, 2015 Philadelphia, USA

Proteoglycans extracted from shark cartilage (*Echinorhinus brucus*) inhibits proliferation of MCF-7 human breast cancer cells by inducing apoptosis

Ajeesh Kumar K K
Central Institute of Fisheries Technology, India

Proteoglycans were extracted from deep sea shark *Echinorhinus brucus* cartilage and their anti-proliferative activity against MCF-7 cell lines was evaluated. Cytotoxicity effect was determined by assessing the cytotoxic effect of the proteoglycans by MTT assay (3-(4, 5-dimethylthiazol-2-yl)-2, 5-diphenyltetrazolium bromide). The following assays were carried out to find out apoptosis mechanism was the cause for cytotoxicity, the concentration of caspases 3 and 9, double fluorescent staining with acridine orange/ethedium bromide and DNA laddering assay. Gene expression assay for BAX, BCL-2 and p53 has been done to find out the expression of mentioned genes products to confirm apoptosis pathway. Different concentrations such as 5, 10, 25, 50 and 100 µg/ml were used for assessing anti-proliferative effect. Significant cytotoxic effect of 75% cell death was observed for 100 µg/ml treated sample. Significant raise in activity of caspase 3 and 9 was found for 100 µg/ml treated sample i.e., 3.92 and 4.35 (expression fold compared with control as 1) respectively. DNA laddering effect was also observed for the 100 µg/ml treated sample. Maximum cell death determined by double fluorescent staining was observed for 100 µg/ml treated sample. A significant raise in the fold expression was observed for BCL-2 and p53 of 4.5 and 3.55 respectively (band intensity was expressed as relative absorbance unit); whereas, low BAX expression of 0.42 was noticed for 100 µg/ml treated sample. Significant anti-proliferative effect was observed for optimal concentration of 100 µg/ml treated sample and mechanism behind cell death was found to be apoptosis as inferred from the above results.

Biography

Ajeesh Kumar K K has completed his Post graduation in Biochemistry at the age of 22 years from Bharathiar University affiliated college. He has more than three years experience in biochemistry research field and mainly working on proteoglycans from shark cartilage. He is currently working as a Senior Research Fellow in Central Institute of Fisheries Technology, Cochin in India and has one national journal publication. He attended two national and international seminars and presented poster and paper.

ajeeshaksa@gmail.com

Notes: