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Effects of Chondroitin Sulfate (CS) on (HeLa) cervical cancer and breast cancer (MCF-7) cell lines

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Abstract

Chondroitin Sulfate (CS) is the main constituent of Blue-spotted Stingray which shows promising in vitro anticancer activities in cancer cell lines. However, the effects of CS on human breast cancer and cervical cancer cell lines remain to be explored. Here we report that CS induced different degree of cytotoxicity in two human cancer cell lines, cervical cancer HeLa and breast cancer MCF-7 cell lines. We found that MCF-7 was more resistant to CS exposure than HeLa cell line. Moreover, CS induced apoptosis in HeLa but not MCF-7 cell line as shown by caspase-3 activity assay. The CS-induced caspase-3 activation in HeLa cells was also confirmed by using quantitative RT-PCR. Our findings show that the caspase-3 activation induced by CS in HeLa cells was transcriptional. These results indicate that as an anticancer candidate, CS is more potent on cervical cancer than the breast cancer cell line. © 2019 Journal of International Dental and Medical Research.

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