EFFECT OF CAROTENOIDS FROM *Litopenaeus vannamei* PROCESSING WASTE IN NEUROBLASTOMA N2A AND GLIOBLASTOMA GL-15 CELLS

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Carotenoids is one of the most abundant class of pigments in nature performing an array of biological properties such as inhibiting development of many types of tumor and inducing apoptosis of cancer cells. In this work, natural carotenoids from shrimp (*Litopenaeus vannamei*) processing waste were obtained by proteolysis. To evaluate the activities of the shrimp carotenoid extract, we used murine neuroblastoma N2a and human glioblastoma GL-15 cell lines, growing in supplemented DMEM. Treatments were carried out with increasing concentrations of the extract diluted in ethanol (final concentration of ethanol, 1%). Cell viability was demonstrated with the MTT assay for cytotoxicity and the antioxidant properties of the extract was studied in a model of catechol-induced oxidative stress. Carotenoids were cytotoxic to cells with EC_{50} values of 101.4ng/mL for N2a, and 133.4ng/mL for GL-15 cells. Morphological alterations and cell damages were observed. These effects were greatly increased by the addition of catecol at 60µM for N2a and 400µM for GL-15 cells. This information suggests that carotenoids from shrimp waste are able to kill tumor cells from the central nervous system. Further studies could elucidate the properties of these carotenoids in biological systems.

Keywords: Antitumoral; Brain; Carotenoids; Catechol; Shrimp waste;

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