

Preliminary investigation of myo-inositol phosphates produced by ASUIA279 phytase on MCF-7 cancer cells.

ABSTRACT

Phytate or myo-inositol hexakisphosphates (IP6) is widely distributed in plants like rice brans. The production of myo-inositol phosphate intermediates has received much attention due to the remarkable potential health benefits offered by the compounds. In this study, the cytotoxicity of the partially purified myo-inositol phosphate fractions and commercial IP1 and IP6 were investigated against MCF-7 breast cancer cell lines. The study showed that the commercial standard IP1 and IP6 showed good inhibition towards the MCF-7 cell line. The MCF-7 cells growth was inhibited in minimum concentration of myo-inositol phosphates (<1000 µg/ml). However, no inhibition observed on the MCF-7 cell line by the myo-inositol phosphates fractions partially purified from rice bran at concentration <1000 µg/ml. The inhibition of MCF-7 was only observed at concentration more than 30 mg/ml with more than 40% cells were inhibited. This indicates that the partially purified rice bran myo-inositol phosphates degraded by ASUIA279 phytase on MCF-7 breast cancer cells exhibit positive results towards the inhibition of cancer cells growth at relatively high concentration.

Keyword: Myo-inositol phosphates; Phytase; MCF-7 cell line; Cancer.