

The Effects of Zeolite X and Y on Cancer Cell Lines

Abstract

Zeolites are hydrated silicates of aluminium that have been very useful in many industry because of its microporous property, absorbance ability and ion exchange capacity. It is currently viewed as a potential adjuvant in cancer therapy due to its ability to inhibit the proliferation of cancer cells. Research on natural zeolite clinoptilolite application as anticancer agent has been proven by others. However, the effect of other types of zeolite on cancer cells is still uncertain. This study is performed to determine the effects of zeolite X and Y on cancer cell lines proliferation in vitro. Cancer cell lines HeLa, AsPC-1 and 911 cells were cultured in designated medium treated with zeolite X and zeolite Y at the concentration of 5 mg/ml and 50 mg/ml. Fetal Bovine Serum (FBS) concentrations were modified to 5%, 10%, 15% and 20%. After 72 hours incubation, the efficacy of zeolite to treat cancer cell lines were measured by means of cell viability test via MTT assay. Overall results showed that cancer cell lines cultivated in the medium treated with 50 mg/ml of zeolite X and 5% FBS exhibited the highest inhibition of cell proliferation and decrease in cell viability. This finding provides preliminary information in the study of determining the potential use of zeolite as anticancer agent for alternative or complementary therapy.