

Abstract

Investigation of the Effects of Paclitaxel and Pycnogenol on Inflammatory Response (PTX3, BDNF, IGF2R) in Human Breast Cancer Cell Line [†]

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Abstract: Breast cancer is the most frequently diagnosed cancer among women internationally and the second cause of cancer-related death. Paclitaxel is antitumorigenic agent used for several types tumors, especially in breast cancer treatment. Herbal-derived medicines have introduced as sources of novel drugs due to minimum systemic side effects. Pycnogenol is an extract of the French maritime pine bark and is a naturally occurring compound that is well-tolerated with a high oral bioavailability. It has been highly studied for the treatment of many diseases including cancer. In this study, we aimed to determine the effects of pycnogenol and paclitaxel in MCF-7 breast cancer cells. We designed 3 experimental groups including control, pycnogenol and paclitaxel groups. Paclitaxel and pycnogenol were used in dosage of 0.5 μ M and 20 μ g/mL, respectively. After 24 h, immunostainings of PTX3, BDNF, IGF2R, the inflammatory proteins that play roles in tumorigenesis, were done. According to results, paclitaxel group was showed higher expression for all antibodies compared with control and pycnogenol groups. The pycnogenol group showed also higher expression than control group but not like paclitaxel group. As a conclusion, we suggest that pycnogenol may be as an antitumorigenic agent as paclitaxel or may be used with combined drug therapy.

Keywords: Breast cancer; inflammation; paclitaxel; pycnogenol



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