Conjugated Linoleic Acid, Kefiran and Interferon Beta-1a's Anti-Proliferative and Anti-Carcinogenic Effects in vitro BT-474 (ATCC® HTB-20™) Cell Lines for Breast Cancer Treatment

Rathore, Vinita

Pindoriya, Tejashvi

This project analyzes the anti-tumoral properties of components derived from milk kefir. This will provide an effective, safe and a cheap means of treating breast cancer. Milk kefir treatment is safer because patients don't suffer from severe and sustained side effects as opposed to when they are treated using the current methods of cancer treatment. Milk kefir was prepared and fractionated to obtain anti-tumoral components. Four experiments were then carried out on BT-474 (ATCC® HTB-20™) cell lines to test conjugated linoleic acid, kefiran and interferon beta-1a's (the components of milk kefir) abilities to inhibit proliferation in BT-474 (ATCC® HTB-20™) cell lines. This was done by placing the BT-474 (ATCC® HTB-20™) cell lines in 96 well microtiter plates. The microtiter plates were then placed in a carbon dioxide incubator to observe any absorbance of BT-474 (ATCC® HTB- 20™) cell lines. Furthermore, tests were carried out on HMEC's (ATCC® PCS- 600-010™) to observe any effects of the milk kefir components on normal human epithelial cells. In addition, we carried out similar tests on BT-474 (ATCC® HTB-20™) cell lines using Epirubicin, a commonly used drug for chemotherapy. Lastly, we carried out an investigation on proteolytic enzymes in milk kefir that were responsible for the navigation of tumoral activity in BT- 474 (ATCC® HTB-20™) cell lines. It was observed that high component concentration decreased cell survival rates alongwith proliferation rates. In conclusion, we realized that milk kefir components have anti-tumoral properties and can be explored further with more tests to produce a safer cancer solution.

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