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Evaluation of anticancer and apoptosis inducing activity of *Amoora rohituka* WA in human breast cancer cell line, MCF-7

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Cancer is one of the second most leading causes of death in India and around the world after cardiovascular disease while breast cancer is the most common cancer in women worldwide, with nearly 1.67 million new cases diagnosed in 2012. It was projected that the burden of breast cancer will increase by 50% in 2030. Chemotherapy continues to be the most common pharmacological approach for the treatment and most of the chemotherapeutic drugs for cancer treatment are molecules isolated or derived from plants. More new drugs are needed for the treatment because of the development of chemo-resistance. Natural products have continued to receive an increasing attention for their potential as novel cancer preventive and therapeutic agents which show the importance of traditionally used medicinal plants as the prime sources for development of anticancer drugs. *Amoora rohituka* WA is a well-known medicinal plant which possesses numerous therapeutic actions including anti-inflammatory, sedative, hypnotic and narcotic. It was evaluated for anticancer activity in this study. The hydro-alcoholic (1:1) crude extract of the plant bark (100 g) was fractionated using column chromatography using benzene, ethyl acetate and methanol solvents respectively. The fractions were dried under vacuum in rotary evaporator and evaluated for their anticancer activity using MTT assay against human breast cancer cell line, MCF-7. Mode of cell death was evaluated by ethidium bromide and acridine orange double-staining. This study show that ethyl acetate fraction of bark extract (RBEA) induces cytotoxicity in a dose-dependent manner in cancer cell lines. Ethidium bromide and acridine orange double-staining demonstrated that RBEA potentiate apoptosis rather than necrosis in cancer cells.

Biography

Santosh K Singh obtained his Master's in Botany from Veer Bahadur Singh Purvanchal University, Jaunpur in India in 1992. He was awarded a PhD degree in Botany from Banaras Hindu University, Varanasi, India in 1998. He is currently appointed as Senior Research Officer in Centre of Experimental Medicine and Surgery, IMS, BHU and leading the center which have facilities for cell culture, natural product research, molecular biology research, plant endophytes research and animal house also for animal study works. He is working on traditionally used herbal medicines, bio-fabrication of highly structured nanomaterials and their evaluation for anti-cancer activity.

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