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Combined natural therapy for breast cancer by oral administration of a nano-porous formulation

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We have attempted to address the problem of oncolytic virotherapy, which although a powerful tool, has its own problem of tumour re-growth at a later stage. A nano-porous hydrogel consisting of natural products, for cure of breast, cervical and other cancer has been developed. It is for oral or intra-peritoneal delivery and targeted release in the intestine.

This formulation cause apoptosis of cancer cells selectively leaving the healthy cells unharmed. Various herbal sources like Osmium santorum (Tulasi), Withania (Aswagandha), Azadirachta indica (Neem) etc. are known to posses anticancer property, however, our formulation comprise of aqueous extracts of leaves of Belada mara or Indian bael (Aegle marmelos); fresh leaves of the plant creeping woodsorrel (Oxalis corniculata); cotyledons of the seed of custard apple (Annona reticulate) and the seeds of Fenugreek or Methi (Trigonella foenum-graecum) and Ginseng from the plant Panax ginseng, to which Newcastle disease virus suspension was added, all at defined proportions. The matrix holding the formulation comprises of agarose and a protein hydrolysate in phosphate- buffer-saline mixed with Polyethelene Glycol and Glycerol. The formulation studied is non-toxic and all the herbal components are used as food or for therapy in human. The virus used is non-pathogenic for human. The carrier hydrogel has been made for oral delivery and targeted slow release of the formulation in the intestine. The anticancer formulation is able to selectively cause apoptosis of cancer cells (Breast cancer: MCF7, Cervical cancer: NCI60), but do not affect the healthy cells.

Cancer induced strain A mice were treated with the formulation. It has resulted in encouraging results as 100% survival of cancer induced strain-A mice was achieved when treated early on appearance of visible signs of tumor. Delayed treatment resulted in 67% survival of mice but there was no growth in size and also spread of tumor got inhibited.

Biography

S. S. Lahiri is the Professor Emeritus in the Amity University, India. He was the former Scientist and Jt. Director, Institute of Nuclear Medicine & Allied Sciences (INMAS), defense R&D Org. (DRDO), Govt. of India, former Head, Division of Radiation Biology & Radio-protection in DRDO and also Division of Drug Development and Safety Evaluation. He had developed combined oral cancer therapy with encouraging result developed oral insulin delivery (3 capsules a day) and also sustained intra-dermal delivery (1 injection in 8 days) technology (*in vitro* & Animal studies only). Targeted killing of cancer cells by developed efficient low dose radio-therapy by selective pre-sensitization. Development of Field Diagnostic Kit which is the cheapest in the world and has infinite shelf life. He have done his Ph.D from IIT Delhi, Delhi University and IVRI Barelli.

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