Webinar on
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WEBINAR

Breast cancer cell therapy through usage of fishery by-products

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The UK is home to many fish cuisines, due to its location in the world. Surrounding this island nation is the Atlantic Ocean on the west, and the North Sea on the east. The options for fish waste utilization and disposal are however restricted, creating a significant problem for the UK fish industry. From capture through to processing, the industry generates a significant quantity of fish waste. "Global Environmental Change" organization estimates that every year, almost half the seafood supply in the United Kingdom is lost, amounting to nearly 500 million pounds of protein waste. Globally, we lose 110 billion Pound sterling. Considering the UK Department of Agriculture recommends that the average person consume at least 1.7 ounces of protein per day, this lost seafood is enough to feed more than 2.7 million people for an entire year. Relatedly, this particular form of food waste further contributes to overfishing, which has of course precipitated a steep decline in marine wildlife populations. What makes the matter worse is that the resulting wastewater endangers the human and aquatic life, causes human and animal diseases, and pollutes agricultural lands, current-water, and groundwater resources due to having high organic load and poor environmental conditions. Additionally, setting up a wastewater treatment system to remove these pollutants involves a governmental budget of multi-million pounds, which can be spent on other needed areas. Therefore, by separating Fishery by-products from their place of origin they have, first, prevented the loss of health nutrients that are the raw material of cuisine, beauty, and treatment products. Secondly, they prevented the transfer of large volumes of organic substances to the wastewater, which in turn resulted in a cleaner wastewater and reduction of the budget for the wastewater treatment plant by becoming able for launching small-scale wastewaters. Thirdly, they have prevented the leakage of organic materials in form of waste to the nature and consequently diminishing the rate of diseases in humans and animals of any kind, all of which are priorities of the World Health Organization. For the second step of this project, they have chosen to utilize the clean Fishery by-products as nutraceuticals since Fishery by-products have rich nutritional values. Despite the innumerable benefits of fish and known fish bioactive molecules, its use by food or pharmaceutical industries is scarce, and even research on fish-based nutraceuticals is not promising. The main target of this project was the utilization of fish wastes and its by-products to fulfill the world demand for cheap supplements and drugs, specifically for underdeveloped/least developed countries. This means making money out of waste. In cellular, Molecular and Genetic laboratories, various experiments were done firstly on cell-lines and then on human tissues of breast, ovaries, uterus, pelvis, and cervix which had been surgically removed. Afterwards, Nano-encapsulation was performed. They found their techniques of nanotechnology to be very positive and useful in the development of non-invasive prevention and minimally invasive treatment of infertility-related disorders (oncological or non-oncological) as well as reproductive system's cancers and hence introducing their final product as oral capsules.

Biography

The acclaimed United Kingdom International Prize 2021 is awarded to outstanding laureates “Dr. Narges Maleki” and “Inv. Eng. Movahed Ahmadvand” for their achievements in the mutual field of human Nano medicine and ecology preservation. The award nomination was due to their fundamental discoveries in Nano medicine that have the potential to be used for the treatment and prevention of infertility as well as the reproductive system’s cancers in human being through using Fishery by-products. Their groundbreaking discoveries in Nano-encapsulation field are through encapsulating by-products with various coating materials at the Nano scale range and evaluating their pharmaceutical effects in the first phase on human cell-lines and on the second phase on human tissues. their discovery of an entirely new Nano-encapsulation system of controlling and treating infertility and reproductive system’s cancer is a major, remarkable, landmark contribution, which has plenty of benefits for government, industry, patients, and the environment from economics to health, to ecology, and to name but a few, which is exceptionally worthy of the acclaimed United Kingdom International Prize 2021 in the mutual field of human Nano medicine and ecology preservation.

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