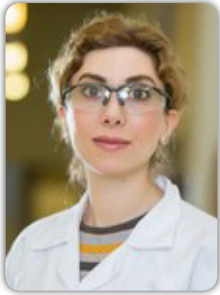


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Novel therapeutics for cancer treatment

Ovarian cancer is the seventh most common cancer in women worldwide. It often has no symptoms at the early stages, so the disease is generally advanced when it is diagnosed. Primary and larger tumor nodules may be removed surgically. However, micronodular and floating tumor colonies, which are spread within the peritoneal cavity, cannot be adequately treated by surgery and require extensive chemotherapy. Targeted drug therapy has numerous benefits including the maintenance of low blood-to-cell drug concentration ratio, which helps to reduce therapy-limiting side effects and increase anticancer effectiveness.


We have developed a new drug delivery system, which targets antineoplastic agents to the ovarian cancer cells through a ligand of luteinizing hormone-releasing hormone (LHRH) receptors. LHRH receptors are overexpressed in ovarian and some other cancer cells and are not expressed in the most part of healthy human organs. We have taken advantage of this differential receptor expression by attaching a new derivative of the LHRH peptide to the outer surface of novel polymer nanoparticles. These nanoparticles are loaded with curcumina as the model drug, a non-toxic plant extract that has recently attracted much

attention in medicine due to its remarkable therapeutical actions. It is called the “next generation multi-purpose drug” and is the active constituent of the Indian spice turmeric. However, it suffers from a very poor metabolic stability and bioavailability due to low water solubility. In this study we have demonstrated that our advanced formulation strategy has overcome many of the hurdles associated with poorly soluble drug molecules like curcumin. This drug delivery system has shown promising potentials to be effectively used as a medication and also target anticancer agents specifically to the ovarian cancer?

Speaker Biography

Pegah Varamini is a lecturer and group leader in Cancer Theme within the Faculty of Pharmacy. She is the leader of Cancer Targeting-Drug Delivery Group. Varamini was awarded the prestigious National Breast Cancer Foundation (NBCF) fellowship in Jan 2016. She completed her PhD degree in Medicinal Chemistry and Pharmacology in December 2012 (UQ, Australia). She also has a professional Doctorate degree in Pharmacy (PharmD). She won Dean’s Award for Research Higher Degree Excellence in 2013. Varamini’s work was selected by the Australian Academy of Science in August 2016, resulting in her personal presentation at the inaugural Falling Walls Lab in Canberra (a gathering of 25 selected Australian and New Zealand researchers, entrepreneurs, engineers and innovators). She has been the Collaboration Award Finalist at Sydney University in 2017.

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