

Stopping ovarian cancer in its tracks

Abstract

New diagnostic approaches for early detection of ovarian cancer (OVCA), the most lethal gynecological malignancies, are urgently needed. In recent years numerous efforts identified potential serum biomarkers, including microRNA (miRNA) molecules for recognizing early stages of OVCA. miRNAs are critical players in essential cellular processes and can serve as diagnostic

biomarkers for cancerous tissues as their expression pattern is perturbed. Unlike the conventional biomarker, the changes in the expression of the circulating miRNAs in response to various disease states, including cancer is predicted to occur early, making peripheral blood a perfect medium to monitor tumor-associated miRNA expression for early diagnosis. Recently the aberrant expression of

some miRNAs has been identified in OVCA, including data emerging from work done by my research team. We have shown that miR-590-3p is remarkably upregulated in the serum of OVCA patients compared with that of healthy donors. Dysregulation of miR-590-3p is also known to be associated with the development of diabetes and obesity. In fact, miR-590-3p is an example of many other miRNA molecules that are linked with various common diseases, including those promoting malignant formation. Hence, identifying a robust panel of circulating oncogenic and tumor suppressor miRNA that can classify the early stages of the tumor from healthy ovaries will help in stopping ovarian cancer in its tracks.

Publications

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Asma Amleh

The American University in Cairo, Egypt

Biography

Asma Amleh is an Associate Professor of Biology at The American University in Cairo and an Adjunct Professor, Department of Mechanical & Industrial Engineering at Ryerson University, Toronto, Canada. She received a BSc in biology and chemistry at The American University of Beirut, Lebanon, and a Ph.D. in biology from McGill University in Montreal, Canada (1997). She has been a research fellow at the laboratory of cellular and developmental biology, NIDDK, and a research associate at the National Institutes of Health, Bethesda, MD, USA. She has also been an instructor at the Department of Molecular Medicine, Institute of Biotechnology, at the University of Texas Health Science Center and a senior research scientist at the Developmental Biology Program, Memorial Sloan-Kettering Cancer Center in NY. Her research interests are focused on understanding the genetic control of normal and abnormal development in the mammalian system, including the incidence of cancer.

