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Dehydroepiandrosterone inhibits proteins and some events related with the metastatic process in breast tumor cell lines

Rebeca Lopez-Marure¹, Estrella Zapata-Gomez¹, Criselda Mendoza-Milla², Leticia Rocha-Zavaleta³, Magali Espinosa Castilla⁴, Jorge Melendez Zajgla⁴ and Erika Olivia Gomez-Gonzalez⁵

¹Instituto Nacional de Cardiología "Ignacio Chávez", México

²Instituto Nacional de Enfermedades Respiratorias, México

³Instituto de Investigaciones Biomédicas, México

⁴Instituto Nacional de Medicina Genómica, México

⁵Universidad Autónoma de la Ciudad de México, México

Dehydroepiandrosterone (DHEA), an adrenal hormone, has a protective role against cancer. We previously have shown that DHEA inhibits the proliferation and migration of cell lines derived from breast cancer; however, the mechanisms to induce these effects are unknown. We hypothesized that DHEA inhibits the expression of proteins and some events related with cell migration and metastasis. To test this, we determined invasion, formation of colonies and spheroids, production of collagen and several pro-inflammatory molecules in three cell lines (MCF-7, MDA-MB-231, ZR-75-30) derived from breast cancer exposed to DHEA. DHEA inhibited the invasion on matrigel, the formation of colonies on agar and the formation of spheroids of MCF-7 and MDA-MB-231 cells. DHEA also decreased the production of collagenin MCF-7 and MDA-MB-231 cells, and the secretion of IL-1 α , IL-6, IL-8, and TNF- α in all cell lines. ZR-75-30 cells were the most resistant to the treatment with DHEA. Our results suggest that some mechanisms implicated with the protection of DHEA in breast cancer are correlated with its capacity to decrease the expression of proteins and minimize some events involved with cell migration and metastasis.

Biography

Rebeca Lopez-Marure was born in Mexico City. She is a Student of Biology and Doctorate in Biomedical Sciences in the Autonomous National University of Mexico. Her topic of investigation is the signal transduction involved in the antiproliferative effect induced by Dehydroepiandrosterone (DHEA) in cancer, and its protective effect on cardiovascular diseases. She has published several papers in international journals related with this topic. Her actual objective is to study the role of DHEA in the migration and invasion of breast cancer cells. Actually, she works as researcher in Medical Sciences in the National Institute of Cardiology "Ignacio Chávez" in Mexico City.

rmarure@yahoo.com.mx

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