

Estrogen induced oxidative stress, NRF1, tumoral mitochondria and potential therapeutic modalities, literature review

S Silverman

Misericordia Community Hospital, Canada

Breast cancer is one of the most common environmental malignancies and second cause of cancer related death in developed countries. Mitochondria are a “power house” and a “canary in a coal mine” of human cancer cells. NRF1 is a master regulator of mitochondrial biogenesis. Mitochondrial biogenesis and translation are dysregulated in the breast cancer cells; this mitochondrial dysfunction enhances tumorigenicity and metastatic potential. Identifying

therapeutic targets for management of both tumoral mitochondrial biogenesis and mitophagy is critical to suppress tumorigenesis. This literature review summarizes the role of mitochondria in breast cancer, estrogen-induced oxidative stress on NRF1 up regulation with tumoral mitochondrial biogenesis and mitophagy and potential therapeutic modalities.

e: Sveta.Silverman@albertahealthservices.ca