

Elucidating the novel functional role of TDRD3 in Stress granules

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Breast cancer is one of the most common cancers affecting women. Our lab has previously shown that arginine methylation by arginine methyltransferases (PRMTs) is upregulated in breast cancer. We have further identified a novel modular protein, Tudor domain containing protein 3, TDRD3, and shown its role in reading/sensing of arginine methylation. Furthermore, TDRD3 was among the top hits in the genes that are strongly correlated with poor prognosis of estrogen receptor negative breast cancer (Nagahata et al., 2004). Moreover in the CancerGenome Atlas' Data Portal, TDRD3 was overexpressed in 58/158 of breast cancer patients. This suggests a potent role of this that this novel gene in the implication of breast cancer. TDRD3 was further shown to re-localize to stress granules (SGs) upon various environmental stresses. SGs have implications in cancer as they have been shown to promote tumor cell survival and mediate resistance to cancer therapy. Therefore, we hypothesize that TDRD3 contributes to late hallmarks of breast cancer pathogenesis through regulating SGs. In this project, we elucidate the role of TDRD3 in assembly/disassembly and dynamic of stress granules. Gaining insight into this novel gene in the light of its role in SGs may eventually have implication on elucidating further, the pathology of breast cancer.

Biography

Alaa Fanous is a master candidate at the University of Ottawa. She has had extensive research experience in an array of fields; particularly in the field of cancer research. Alaa Fanous is members of various scientific organizations which include but are not limited to ;Scientist without borders, Lets talk science and cellular and molecular medicine student council.