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Novel targets in the peripheral blood mononuclear cells and circulating plasma differentiate poor prognosis breast cancer subtypes**Sirin Adham**

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Circulating plasma and peripheral blood mononuclear (PBMCs) cells provide an informative snapshot of systemic physiology state. The role of neuropilin-1 (*NRP-1*) and its interacting molecules was investigated in breast tumor tissue however the clinical impact of their systemic levels was not fully evaluated. In this cross-sectional study, we found that plasma *NRP-1* and placental growth factor (PLGF) were increased in advanced nodal and metastatic breast cancer compared with locally advanced disease. Triple negative breast tissues expressed higher levels of both *NRP-1* and PLGF compared with other subtypes. Furthermore, in PBMCs, *NRP-1* and its interacting molecules *SEMA4A* and *SNAI1* were significantly down regulated in breast cancer patients compared with healthy controls. *SEMA4A*, *SNAI1*, *PLXNA1* and *VEGFR3* were inversely expressed with disease stage, indicating protective role. Moreover, two signature molecules; *VEGFR3* and *PLXNA1* were exclusively unregulated in PBMCs of Triple Negative Breast cancer (TNBC) cases, which underline the ability of PBMC expression profiles to differentiate among tumor molecular subtypes. These molecules showed differential levels according to patient's age a notion which might impact therapeutic plan. Finally, this work supports the importance of *NRP-1*-associated molecules present in the circulation to characterize poor prognosis breast cancer and emphasizes on their role as favorable drug targets.

Biography

Sirin Adham has obtained her PhD degree in 2002 from University of Leon, Spain. She has worked as Post-doctoral Fellow at University of Waterloo and University of Guelph, Canada from 2003 to 2009. From 2009 until present, she is working as an Assistant Professor at Sultan Qaboos University, Oman.

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