Congratulations to IMCB's latest PhD graduate - Sultan Abda Neja

Friday, 04 Jan 2019

Thesis Title: Molecular Characterization of GREB1 and TRAF3 in the Oncogenic Signalling Pathways of Human Cancers

Abstract

Deregulation of cell signalling pathways that control growth and cell fate is one of the most important hallmarks of human cancer. NF-κB pathway dysregulation is critical for the pathogenesis of human cancers. Mutation of TRAF3; an upstream adapter molecule constitutively activates this pathway in Multiple Myeloma. I found TRAF3 mutation underlies the de-novo survival and the acquisition of proteasome inhibitor resistance (PIR). I identified key players in the mechanism of PIR. ER+ breast cancer also uses ERα to sustain proliferative signalling. Growth regulation by Estrogen in Breast Cancer 1 (GREB1) is one of the top E2 responsive ERα target genes. Loss of GREB1 results in cell proliferation defects by attenuating ER signalling. However, the molecular mechanism by which GREB1 affects ER-associated tumor growth is barely known. I identified GREB1 is a novel glycosyltransferase enzyme which glycosylates and stabilizes ERα and subsequently promotes tumor growth. Loss of GREB1 confers tamoxifen resistance.

Key Words

Breast Cancer, GREB1, Multiple Myeloma, NF-kB, TRAF3

Supervisors

Professor Vinay TERGAONKAR