Noura Alzahofi, Biomed Res, Volume 30
ISSN: 0976-1683

Spire: A new Rab27a-effector characterizing Rab27a interaction-sites within spire

Noura Alzahofi
University of Nottingham, UK

Rab27a is a small GTPase and a member of the RAS oncogene family. Rab27a governs different Kinds of intracellular trafficking through interaction with distinct effectors. The extent of known Rab effectors has contributed to enlightening the molecular mechanism and dysfunctions that lead to a variety of human diseases. Recently, we identify spire, an actin nucleation protein, as a new Rab-27a effector. Spire interacts with formin-1 (an actin elongation factor) to nucleate linear actin-filaments that are used as a track for myosin to transport intracellular cargo, including melanosome in skin melanocytes. Using melanosome distribution as an indicator, in modified-nanoscale pulldowns assay, we found that spire is able to interact with Rab-27a on the cytoplasmic face of the melanosome via its C-terminal membrane- binding region. In addition, the results highlight a crucial role of Spire-Box domain in this interaction. Interestingly, a point mutation within Spire-Box (K419W) blocked the said interaction. This mutation corresponding to that of R35W in melanophilin/ Slac2 (Rab27a-effector) that causes Griscelli syndrome type-3 in humans.

Speaker Biography

Noura Alzahofi is currently pursuing her PhD in the University of Nottingham, UK. She has few publications in international journals.

e: Noura.Alzahofi@nottingham.ac.uk

Notes: