Tata Institute of Fundamental Research
Survey No. 36/P, Gopanpally Village, Serilingampally, Ranga Reddy Dist., Hyderabad – 500 046

Internal Webinar

Protein phosphatases of leishmanial parasite demonstrate pro-inflammatory response

Rahila Qureshi

Department of Genetics, OU, Hyderabad

Leishmaniasis is one of the neglected tropical diseases representing a cluster of infections which are triggered by an intracellular parasitic protozoan Leishmania. The protein phosphatases of leishmanial parasite are important for post-translational modification along with many vital functions. Two of the serine/threonine phosphatases of Leishmania donovani (LdPP2C and LdPP1) were purified, structurally characterized and their immune response was evaluated in human macrophages. These leishmanial phosphatases revealed presence of more helices than the beta sheets and the modelled structures possess typical features similar to other phosphatases structures. These phosphatases did not show cytotoxicity towards the human macrophages even at higher concentration and upregulated TNF-α and IL-6 cytokines at transcriptional and translational level. Concurrently, nitric oxide and transcriptional factor NF-κB were also found to be elicited through these phosphatases. Altogether, our study highlights that leishmanial phosphatases are stimulating the pro-inflammatory cascade inside the human macrophage and might play a potent role in host immunomodulation through immune effector function.

Thursday, Sep 30th 2021

11:00AM