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Research Interests:

Host-Pathogen Interaction, Vector Biology

Summary of Research

Role of diet on life-history traits of mosquitoes

Vector borne diseases constitute a significant global burden accounting for ~17% of all infectious diseases and causing one million deaths annually. These diseases are mostly transmitted by hematophagous arthropods that transmit the pathogen to the host during a blood meal. Mosquitoes represent the best known disease vectors that transmit a plethora of infectious diseases such as malaria, dengue, chikungunya, Japanese encephalitis, etc. Among mosquitoes, only the female takes blood while males survive on plant nectars. Feeding on blood is a part of anautogeny in majority of these arthropods and serves important roles in oogenesis. When compared in terms of life-span, male mosquitoes which feed exclusively on plant-sugars live for significantly short durations than their female counter-parts. It appears that blood-meal besides being essential for egg development may also prolong survival in mosquitoes. The present focus of my lab is to study the role of blood-meal in promoting survival in female mosquitoes and to subsequently identify molecular targets and develop inhibitors for them.

Publications:

1. Bioengineering of Piper longum L. extract mediated silver nanoparticles and their potential biomedical applications. Yadav R, Saini H, Kumar D, **Pasi S**, Agrawal V. Mater Sci Eng C Mater Biol Appl. 2019 Nov;104:109984.
2. Air versus water temperature of aquatic habitats in Delhi: Implications for transmission dynamics of Aedes aegypti. Kumar G, Pande V, **Pasi S**, Ojha VP, Dhiman RC. Geospat Health. 2018 Nov 9;13(2).
3. Auto-Reactive Th17-Cells Trigger Obsessive-Compulsive-Disorder Like Behavior in Mice With Experimental Autoimmune Encephalomyelitis. Kant R, **Pasi S***, Surolia A. Front Immunol. 2018 Oct 31;9:2508. (*equal contribution)
4. Novel multimeric IL-1 receptor antagonist for the treatment of rheumatoid arthritis. **Pasi S**, Kant R, Gupta S, Surolia A. Biomaterials. 2015 Feb;42:121-33.
5. Toll/Interleukin-1 Receptor Domain Derived from TcpC (TIR-TcpC) Ameliorates Experimental Autoimmune Arthritis by Down-modulating Th17 Cell Response. **Pasi S**, Kant R, Surolia A. J Biol Chem. 2016 Jun 3;291(23):12358-69.
6. Homo- β -amino acid containing MBP(85-99) analogs alleviate experimental autoimmune encephalomyelitis. Kant R, **Pasi S**, Surolia A. Sci Rep. 2015 Feb 3;5:8205.
7. Prognostic significance of cyclooxygenase-2 and response to chemotherapy in invasive ductal breast carcinoma patients by real time surface plasmon resonance analysis. Singh AK, Parshad R, **Pasi S**, Madhavan T, Das SN, Mishra B, Gill K, Dalal K, Dey S. DNA Cell Biol. 2011 Oct;30(10):801-7.