Tanwee Das De

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Current status

SERB-National Post-Doctoral Fellow:
March 2021-Current

Host-Institute: Indian Institute of Science Education and Research, Pune
Supervisor: Dr. Krishanpal Karmodiya
Project Title: Mosquito neuro-olfactory epigenome: Understanding the behavioral plasticity and heterogeneous feeding behavior of *Anopheles* and *Aedes* mosquitoes, a potential approach to target mosquitoes' sense of smell
Work Experience:

- Perform RNA-Seq study of the neuro-olfactory system of *Anopheles* and *Ades* mosquitoes according to circadian cycle
- RNA-Seq and Genomic DNA Library preparation, sequencing
- Large scale RNA-Seq data analysis using different pipeline and R scripts
- Target gene identification using DESeq2 Package
- Phenotype testing in mosquitoes through RNAi approach

ICMR-Post Doctoral Fellow:
September 2018-January 2021

Host Institute: National Institute of Malaria Research, New Delhi, India
Supervisor: Dr. Rajnikant Dixit
Project Title: Molecular and Biochemical characterization of Sensory Appendages Protein (SAP): A novel target for designing disorientation strategy in the mosquito *Anopheles culicifacies*.
Work Experience:

- Cloning and Recombinant Protein Expression and protein purification
- RNAi knockdown studies in mosquitoes
- Molecular Modeling and docking of the mosquito chemosensory proteins
- Cuticular Hydrocarbon analysis of mosquitoes by GC/MS

PhD student:
June 2014 – July 2018

Institution: National Institute of Malaria Research, New Delhi, India
And Delhi Technological University, New Delhi, India
Supervisor: Dr. Yasha Hasija and Dr. Rajnikant Dixit
Synopsis Title: Molecular Analysis of Neuro-Olfactory System of Indian Malarial Vector *Anopheles culicifacies.*
Work Experience:

- RNA-Seq study of the neuro-olfactory system of mosquito according to different physiological conditions
- RNA-Seq data and differential gene expression analysis
- Rigorous RT-qPCR validation

Senior Research Fellow:
April 2013 – May 2014

Institution: National Institute of Malaria Research
Project: Pilot gene discovery project: Decoding the hemocyte transcriptome of the Indian Malarial vector *Anopheles stephensi*.

Junior Research fellow:
2010 – 2012

Institution: Jawaharlal Nehru University, New Delhi, India.
Project: Understanding the Amphotericin B resistance mechanism in *Leishmania donovani*
Work Experience:

- *Leishmania* and monocyte cell culturing
- Lipidomics analysis by GC/MS
- Proteomics analysis by iTRAQ and LC/MS/MS

Education:

Master of Science
2007–2009

Institution: University of Calcutta, India.
Major: Microbiology.
Result: 68.5% with Ist Class within top 5%.

Bachelor of Science
2004 – 2007

Institution: Scottish Church College, University of Calcutta, India.
Major: Microbiology.
Minors: Chemistry and Botany.
Result: 68.63 % with Ist class and Ist division within top 1%.

XII - Standard
2004

School: Jodhpur Park Girls High School, Calcutta, India.
Result: 78.2 % within top 2%.

X - Standard
2002

School: Holy Child Girls High School, Kolkata.
Result: 82.7 % within top 2%.

Awards:

2021 – SERB National Post-Doctoral Fellowship, Department of Science and Technology, India
2018 – Award of ICMR-Centenary Post-Doctoral Fellowship, Indian Council of Medical Research, India
2017 - Bill and Melinda Gates Foundation Global Health Travel Award for attending Keystone Symposia Conference- Vectors, Pathogens and Diseases: Current Trends and Emerging Challenges. Durban, South Africa.
2017 - SciGenome Research Foundation (SGRF) full scholarship and travel award for attending the NextGen Genomics, Biology, Bioinformatics and Technologies (NGBT) Conference. Bhubaneswar, India
2017 – Best Poster Presentation Award, NextGen Genomics, Biology, Bioinformatics and Technologies (NGBT) Conference, 2017. Bhubaneswar, India
2014 - Best Active Participants. National Workshop on Molecular Techniques: Cell to DNA (MTCD – 2014). BITS Pilani.
2013- National Eligibility Test (NET) – JRF-UGC, All India Rank 60
2012- National Eligibility Test (NET) - Lectureship, All India rank- 30.
2012- Graduate Aptitude Test in Engineering (GATE), Life Science India. Percentile- 97.6, All India rank- 255 out of 10737 candidates.
2010–National eligibility Test (NET) - Lectureship (LS), India.
2006, 2007-Certificate of Merit from Scottish Church College, Kolkata, India.

Skills:

Deep knowledge on Mosquito Biology and gut-brain-axis communication

Analyzing different types of omics data (RNA-Seq, Metagenomics) using diverse tools like Trinity, Cufflink, R

Publication:

Sl. No.	Author	Title	Name of Journal	Volume	Page	Year
1.	**T. Das De**, S. Tevatiya, C. Chauhan, S. Kumari, D. Singla, V. Srivastava, J. Rani, P. Sharma, Y. Hasija, K C Pandey and R. Dixit	Microbiome-Gut-Brain-Axis communication influences metabolic switch in the mosquito *Anopheles culicifacies*	In revision	-	-	2021
2.	S. Kumari, C. Chauhan, J. Rani, T. Das De, S. Tevatiya, P. Sharma, K. C Pandey, V. Pande, R. Dixit.	A testis-specific Heme Peroxidase HPX12 regulates male fertility in the mosquito *Anopheles stephensi*	Scientific Reports	12	1-13	2022
3.	J. Rani, T. Das De, C. Chauhan, S. Kumari, P. Sharma, S. Tevatiya, S. Chakraborti1, K. C. Pandey, N. Singh, R. Dixit	Functional disruption of transferrin expression alters reproductive physiology in *Anopheles culicifacies*	PLOS One	17	1-17	2022
4.	S. Tevatiya, S. Kumari, P. Sharma, J. Rani, C. Chauhan, T.Das De, K.C Pandey, V. Pande R. Dixit.	Molecular and functional characterization of Trehalase in the mosquito *Anopheles stephensi*	Frontiers in Physiology	11	1-9	2020
5.	S. Kumari, C. Chauhan, S. Tevatiya, D. Singla, T. Das De, P. Sharma, T. Thomas, J. Rani, D. Savargaonkar, K. C. Pandey, V. Pande, R. Dixit	Genetic changes of Plasmodium vivax tempers host tissue-specific responses in Anopheles stephensi	Current Research in Immunology	2	12-22	2021
6.	J. Rani, C. Chauhan, D. Singla, T. Das De, S. Kumari, P. Sharma, S. Tevatiya, K.C Pandey, N. Singh, V. Pande, R. Dixit.	Hemocyte RNA-Seq analysis of Indian malarial vectors *Anopheles stephensi* and *Anopheles culicifacies*: from similarities to differences	Gene	798	1-10	2021
7.	P. Sharma, J. Rani, C. Chauhan, S. Kumari, S. Tevatiya, **T. Das De**, D. Savargaonkar, K. C Pandey and R. Dixit.	Altered gut microbiota and immunity defines *Plasmodium vivax* survival in *Anopheles stephensi*.	Frontiers in Immunology	11	1-13	2020

8.	C. Chauhan, **T. Das De**, S. Kumari, J. Rani, P. Sharma, S. Tevatiya, K. C Pandey, V. Pande, R. Dixit.	Hemocyte specific FREP13 abrogates exogenous bacterial population in hemolymph and promotes midgut endosymbionts in *Anopheles stephensi*	Immunology and Cell Biology	-	1-13	2020
9.	**T. Das De**, T. Thomas, S. Verma, D. Singla, C. Chauhan, V. Srivastava, P. Sharma, S. Kumari, S. Tevatiya, J. Rani, Y. Hasija, K. C Pandey and R. Dixit	A synergistic transcriptional regulation of olfactory genes drives blood-feeding associated complex behavioral responses in the mosquito *Anopheles culicifacies*.	Frontiers in Physiology	9	1-15	2018
10.	**T. Das De**, P. Sharma, T. Thomas, D. Singla, S. Tevatiya, S. Kumari, C. Chauhan, J. Rani, V. Srivastava, R. Kaur, K. C. Pandey, R. Dixit	Interorgan Molecular Communication Strategies of "Local" and "Systemic" Innate Immune Responses in Mosquito *Anopheles stephensi*.	Frontiers in Immunology	9	1-17	2018
11.	**T. Das De,** Y. Hasija, R. Dixit	Transcriptional responses of *attractin* gene in the mosquito *Anopheles culicifacies*: A synergistic neuro-olfactory regulation.	Journal of Vector Borne Diseases	55	89–97	2018
12.	**T. Das De**, Y. Hasija, R. Dixit.	Biogenic Amines in shaping mosquito behavior: A biomolecule having pharmacological significance	Journal of Chemical and Pharmaceutical Research	9	88-92	2017
13.	**T. Das De**, P. Sharma, C. Rawal, S. Kumari, S. Tavetiya, J. Yadav, Y. Hasija, R. Dixit	Sex specific molecular responses of quick-to-court protein in Indian malarial vector *Anopheles culicifacies*: conflict of mating versus blood feeding behavior.	Heliyon	3	1-18	2017
14.	T. Thomas, **T. Das De**, P. Sharma, S. Lata, P. Saraswat, K. C. Pandey, R. Dixit	Hemocytome: deep sequencing analysis of mosquito blood cells in Indian malarial vector *Anopheles stephensi*	Gene	585	177-90	2016
15.	P. Sharma, **T. Das De**, S. Sharma, A. K. Mishra, T. Thomas, S. Verma, V. Kumari, S. Lata, N. Singh, N. Valecha, K. C. Pandey, R. Dixit	Deep sequencing revealed molecular signature of horizontal gene transfer of plant like transcripts in the mosquito *Anopheles culicifacies*: an evolutionary puzzle	F1000Research	4	1-22	2015
16.	P. Sharma, S. Sharma,	Unravelling dual feeding	Biology Open	00	1-14	2015

	R. K. Maurya, T. Thomas, **T. Das De**, N. Singh, K. C. Pandey, N. Valecha, R. Dixit	associated molecular complexity of salivary glands in the mosquito *Anopheles culicifacies*				
17.	T. Thomas, **T. Das De,** P. Sharma, S. Verma, S. Rohilla, K. C. Pandey, R. Dixit	Structural and functional prediction analysis of mosquito Ninjurin protein: Implication in the innate immune responses in *Anopheles stephensi.*	International Journal of Mosquito Research	1	60-65	2014
18.	P. Sharma, S. Sharma, R. K. Maurya, **T. Das De**, T. Thomas, N. Singh, K. C. Pandey, N. Valecha, R. Dixit.	Salivary glands harbor more diverse microbial community than gut in *Anopheles culicifacies*	Parasites & Vectors	7	2-7	2014

Book Chapter:

1. **T. Das De** and R. Dixit*. Neuro-Olfactory regulation and salivary actions: A coordinated event for successful blood-feeding behavior in mosquitoes. Book Chapter, IntechOpen "Dysfunction of Olfactory System", 2020.

Poster Presentation:

1. "Antimicrobial peptide mediated Local and Systemic immune responses in *Anopheles stephensi*", International Conference on Entomology, Punjabi University, Patiala, 21-23 Feb. 2014.

2. "Decoding the genetic power of smell detection in Indian Malarial Vector *Anopheles culicifacies.* Keystone Symposia Conference- Vectors, Pathogens and Diseases: Current Trends and Emerging Challenges. Durban, South Africa, 10-14 September 2017.

3. "Resolving the conflict of mating versus blood feeding: exploring role of *quick-to-court* gene in the mosquito *Anopheles culicifacies*". NextGen Genomics, Biology, Bioinformatics and Technologies (NGBT) Conference. Bhubaneswar, Odisha, India, 2nd - 4th October 2017.

4. "Decoding molecular complexity of brain tissue in response to blood feeding in the mosquito *Anopheles culicifacies*". 14th International conference on vector-borne diseases, Bhubaneshwar, India, January 9-11, 2019.

5. "Blood feeding and Brain response: decoding and tracking brain specific molecular actions in the mosquito *Anopheles culicifacies".* 8th International Symposium on Molecular Insects Science at Sitges, Spain on 7-10 July 2019.

Languages: Hindi, English, Bengali

References: The following people can provide information about my academic work.

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