SOMADITYA DEY

Name and full current address: **Somaditya Dey (Ph.D.)**, **Assistant Professor, West Bengal Education Service, Department of Zoology, Acharya Prafulla Chandra Roy Government College, Himachal Bihar, Matigara, Siliguri-734010, West Bengal, India. Phone: +91-353-2571340 (O), 08013247086 (M),** E-mail: **somaditya.dey@gmail.com, somaditya.dey@bgc.ac.in**

Earlier Workplace: Post Graduate Department of Zoology, Barasat Government College, 24 Parganas (N), 10, K.N.C. Road, Pin - 700 124, West Bengal, India (2015-2025)

Date of Birth: **20.02.1987**

PhD: Cellular Immunology & Experimental Therapeutics Laboratory, Department of Zoology, West Bengal State University. PI: Prof. Chiranjib Pal. M: 9831306386**.** E-mail: chiranjibpal.zoology@wbsu.ac.in**.**

[Thesis title: "Host protection against drug -sensitive & -resistant *Leishmania donovani* infection by therapeutic combination of *Mycobacterium indicus pranii (M.w.)* & heat induced promastigotes promotes the up regulation of Flt3+ preDC leading to IL-6 producing CD11c+ cDC" **(2019)**]

Postdoctoral work place address: Vector Molecular Biology Section, Laboratory of Malaria and Vector Research, National Institute of Allergy and Infectious Diseases, NIH, Rockville, MD, USA.
PI: Dr Shaden Kamhawi; Mail ID: skamhawi@niaid.nih.gov

- **Position:** Long-term International Fellow, Indian Council of Medical Research, Government of India.
- **Project title:** Investigating parasite tropism from the bite site to the viscera after sand fly transmission to a murine model of experimental visceral leishmaniasis: A novel concept to evaluate host immune responses against hematophagous arthropod borne diseases

Publications:

1. Malnutrition exacerbates pathogenesis of sand fly-transmitted *Leishmania donovani*. Eva Iniguez[1], Johannes Doehl[1#], Pedro Cecilio[2#], Tiago Donatelli Serafim[1], Caroline Percopo[3], Yvonne Rangel-Gonzalez[1], **Somaditya Dey[1,4]**, Elvia J. Osorio[5], Patrick Huffcutt[1], Sofia Roitman[6], Claudio Meneses[1], Mara Short[1], Jesus G. Valenzuela[1], Peter C. Melby[5], Shaden Kamhawi[1*] (Under review; Nature Communications Biology; reference number: COMMSBIO-24-6178-T)
2. NLRP1-dependent activation of Gasdermin D in neutrophils controls cutaneous leishmaniasis. Michiel Goris, Katiuska Passelli, Sanam Peyvandi, Oaklyne Billion Borja Prat-Luri, Benjamin Demarco, Chantal Desponds, Manon Termote1, Eva Iniguez, **Somaditya Dey**, Miriam Díaz-

Varela, Bernard Malissen, Shaden Kamhawi, Benjamin P. Hurrell, Petr Broz1 and Fabienne Tacchini-Cottier*. Plos Pathogen; 2024:9;20(9):e1012527; doi: 10.1371/journal.ppat.1012527. **Impact factor: 5.5**

3. Kamalika Roy, Sanhita Ghosh, Mintu Karan, Suman Karmakar, Supriya Nath, Bedanta Das, Sharmistha Paul, Pritam Mandal, Monalisa Ray, Mousumi Das, Soumyadip Mukherjee, **Somaditya Dey**, Chiranjib Pal* (2024). Activation of neutrophils excels the therapeutic potential of *Mycobacterium indicus pranii* and heat-induced promastigotes against antimony-resistant *Leishmania donovani* infection. Scandinavian Journal of Immunology; https://doi.org/10.1111/sji.13350. **Impact Factor: 3.7**
4. Joydip Ghosh[a¶], Sondipon Chakraborty[a¶], **Somaditya Dey[a,#]**, Debarati Mukherjee[a], Biswajyoti Sarkar[a], Suvadip Mallick[a], Aritri Dutta[a], , Tanmoy Dutta[c], Soumen Bhattachrjee[c], Narayan Ghorai[b], Chiranjib Pal[a]* (2021). Potential anti-leishmanial activity of a semi-purified fraction isolated from the leaves of *Parthenium hysterophorus.* ***Acta Parasitologica*****;** 2021;66, 1480–1489**; Impact factor: 1.44.** (#: Joint 1st author)
5. Debarati Mukherjee[1, #], Md Yousuf[2, #], **Somaditya Dey[1]**, Sondipon Chakraborty[1], Vinay Kumar[3], Ankur Chaudhuri[4], Biswajyoti Sarkar[1], Supriya Nath[1], Aabid Hussain[1], Aritri Dutta[1], Saurav Chatterjee[2], Sibani Chakraborty[4], Sushma Singh[3]**,** Susanta Adhikari[2]*, Chiranjib Pal[1]* (2020). Targeting the trypanothione reductase of tissue-residing *Leishmania* in hosts' reticuloendothelial system: Flexible water-soluble ferrocenylquinoline-based preclinical drug candidate. ***Journal of Medicinal Chemistry***; 63, 24, 15621–15638**. Impact Factor: 7.44** (#: Joint 1st author).
6. **Somaditya Dey,** Debarati Mukherjee, Sirin Salma Sultana, Suvadip Mallick, Supratim Mandal, Aritri Dutta, Joydip Ghosh*,* Aabid Hussain, Pradyumna Patra, Bhaskar Saha and Chiranjib Pal (2020). Combination of *Mycobacterium indicus pranii* and heat induced promastigotes cures drug-resistant *Leishmania* infection: Critical role of Interleukin-6 producing classical dendritic cells**.** ***Infection and Immunity;*** e00222-19; 88(6):1-20*.* **Impact Factor: 3.44.**
7. Aabid Hussain[#], Sanhita Ghosh[#], Kamalika Roy[#], Supriya Nath, Biswajyoti Sarkar, Aritri Dutta, Priyankar Maji, Shibani Basu, Sharmistha Paul, **Somaditya Dey**, Kakuli Chakraborty, Bikramjit Raychaudhury, Krishnendu Acharya, Jhuma Ganguly, Chiranjib Pal (2020). A mushroom derived 'carbohydrate-fraction' reinstates hostimmunity and protects from *Leishmani donovani* infection. ***Parasite Immunology***; 2020:e12806. **Impact Factor: 2.28** (#: Joint 1st author).
8. Sultana Sirin Salma[#], Joydip Ghosh[#], Sondipon Chakraborty[#], Debarati Mukherjee, **Somaditya Dey**, Suvadip Mallick, Aritri Dutta, Soumitra Paloi, Somanjana Khatua, Tanmay Dutta, Soumen Bhattacharya, Krishnendu Acharya, Narayan Ghorai, Chiranjib Pal (2018) Selective *in vitro* inhibition of *Leishmania donovani* by a semi-purified fraction of wild mushroom *Grifola*

frondosa. ***Experimental Parasitology****;* 192:73-84. **Impact Factor: 2.01** [#: Joint 1st author].

9. Md Yousuf[#]; Debarati Mukherjee[#]; **Somaditya Dey**; Sourav Chatterjee, Abhishek Pal; Biswajyoti Sarkar; Chiranjib Pal and Susanta Adhikari. (2018) Synthesis and biological evaluation of polyhydroxylated oxindole derivatives as potential antileishmanial agent. ***Bioorganic and Medicinal Chemistry Letters***, 28: 1056–1062. **Impact Factor: 2.82** [#: Joint 1st author].
10. Md Yousuf[#], Debarati Mukherjee[#], **Somaditya Dey**, Chiranjib Pal, Susanta Adhikari* (2016). Antileishmanial ferrocenylquinoline derivatives: Synthesis and biological evaluation against *Leishmania donovani.* ***European Journal of Medicinal Chemistry,*** *124:468-479.* **Impact Factor: 6.514** [#: Joint 1st author]
11. Suvadip Mallick[¶], Aritri Dutta[¶], Ankur Chaudhuri, Debasri Mukherjee, **Somaditya Dey**, Subhadra Halder, Joydip Ghosh, Debarati Mukherjee, Sirin Salma Sultana, Gunjan Biswas, Tapan Kumar Lai, Pradyumna Patra, Indranil Sarkar, Sibani Chakraborty, Bhaskar Saha, Krishnendu Acharya and Chiranjib Pal* (2016). Successful therapy of murine visceral leishmaniasis with astrakurkurone, a triterpene isolated from mushroom *Astraeus hygrometricus*, involves the induction of protective cell mediated immunity and TLR9. ***Antimicrobial Agents and Chemotherapy****, 60(5): 2696-2708.* **Impact Factor: 5.19.**
12. Pranab Ghosh, Ashim Ghosh, Amitava Mandal, Sirin Salma Sultana**, Somaditya Dey,** Chiranjib Pal (2016). Oxysterols: Synthesis and anti-leishmanial activities. ***Steroids****, 107: 65-73*. **Impact Factor: 2.66.**
13. Debarati Mukherjee[#], Chingakham Brajakishor Singh[#], **Somaditya Dey**, Supratim Mandal, Joydip Ghosh, Suvadip Mallick, Aabid Hussain, Ningombam Swapana, Samir A Ross[d] and Chiranjib Pal* (2016). Induction of apoptosis by Zerumbone isolated from *Zingiber zerumbet* (L.) Smith in protozoan parasite *Leishmania donovani* due to oxidative stress. ***Brazilian Journal of Infectious Diseases****, 20(1): 48-55*. **Impact Factor: 1.94.** [#: Joint 1st author].
14. Suvadip Mallick[#], **Somaditya Dey**[#], Supratim Mandal, Aritri Dutta, Debarati Mukherjee, Gunjan Biswas, Soumya Chatterjee, Sanjaya Mallick, Tapan Kumar Lai, Krishnendu Acharya and Chiranjib Pal* (2015). A novel triterpene from *Astraeus hygrometricus* induces reactive oxygen species leading to death in *Leishmania donovani*. ***Future Microbiology***, *10 (5): 763-789.* **Impact Factor: 3.165**. **[#: Joint 1st author]**
15. Md Yousuf[#], Debarati Mukherjee[#], Abhishek Pal, **Somaditya Dey**, Supratim Mandal, Chiranjib Pal[*], and Susanta Adhikari[*] (2015). Synthesis and Biological Evaluation of Small Molecule Ferrocenylquinoline as a Potential Antileishmanial Agent. ***ChemMedChem****, 10 (3): 546-554.* **Impact Factor: 3.44. [**#: Joint 1st author; *Joint Correspondence Author.**]**

16. **Somaditya Dey**, Debarati Mukherjee, Sondipon Chakraborty, Suvadip Mallick, Aritri Dutta, Ningombam Swapana, Swatilekha Maiti, Narayan Ghorai, Chingakham Brajakishor Singh and Chiranjib Pal* (2015). Protective effect of *Croton caudatus* Geisel leaf extract against experimental visceral leishmaniasis induces proinflammatory cytokines *in vitro* and *in vivo.* ***Experimental Parasitology;*** *151–152: 84–95.* **Impact Factor: 2.01.**
17. Pranab Ghosh, Amitava Mandal**, Somaditya Dey**, Chiranjib Pal (2015). Synthesis and in vitro screening of 29, 30-dibromo-28-oxoallobetulin against parasitic protozoans, *Leishmania donovani* and *Leishmania major*. ***Indian Journal of Pharmaceutical Sciences*** 77 (2), 202. **Impact Factor: 0.98.**
18. Suvadip Mallick[#], Aritri Dutta[#], **Somaditya Dey**[#], Joydip Ghosh, Debarati Mukherjee, Sirin S Sultana, Supratim Mandal, Soumitra Paloi, Somanjana Khatua, Krishnendu Acharya, Chiranjib Pal* (2014). Selective inhibition of *Leishmania donovani* by active extracts of wild mushrooms used by the tribal population of India: An *in vitro* exploration for new leads against parasitic protozoans. ***Experimental Parasitology****; 138: 9–17.* **Impact Factor: 2.01**. **[#: Joint 1st author]**
19. Suvadip Mallick, Subhadra Halder, Aritri Dutta, **Somaditya Dey**, Sourav Maiti, Chandrakanta Bandyopadhyay, Bhaskar Saha and Chiranjib Pal* (2013). Chromone linked nitrone derivative induces the expression of iNOS2 and Th1 cytokines but reduces the Th2 response in experimental visceral leishmaniasis. ***International Immunopharmacology***; *15(4):772–779.* **Impact Factor: 4.93.**

Ad-hoc Reviewer

1. Reviewed a manuscript entitled '**Identification of Chalcone derivatives as inhibitors of *Leishmania infantum* Arginase and promising antileishmanial agents'** submitted to the journal **Frontiers in Chemistry.**

Research highlights

In-depth knowledge of both fundamental and cutting-edge technologies related to vector molecular biology. These include culturing of *Leishmania* parasites; SF infections with *Leishmania* parasites by artificial blood feeding; dissecting the midgut of SFs; identification of various developmental stages of the parasite in the sand fly midgut including infectious metacyclic promastigotes; undertaking natural vector-transmission of various *Leishmania* parasites to mice models of infection by SF bites; handling infected animals including aseptic organs and tissue processing, cell recovery from different tissues and preparation for analysing using 10-color multiplex flow cytometry, DNA/RNA isolation, qPCR, ELISA, and western blot.

Experiences in performing extensive flow cytometry (FACS), polymerase chain reaction (PCR) assays in cellular immunology based cutting-edge scientific research to establish the novel combination of *Mycobacterium indicus pranii (M.w.)* & heat induced *Leishmania* promastigotes as adjuvant therapy against experimental murine visceral leishmaniasis.

Participated as a key contributor in wet-lab research for establishing the anti-leishmanial efficacies of several natural and synthetic molecules against visceral leishmaniasis, using methods including spectrophotometry, scanning electron microscopy (SEM), fluorescence microscopy and extensive biochemical and pharmacokinetic assays.

Worked in the field of clinical immunology-based study on the involvement of CDl4+CDl6+ and CDl4-CDl6+ inflammatory monocytes in development of chemokine axis during *Leishmania donovani* infection in active Kala-azar patients in disease- endemic regions of West Bengal, India.

Awards and Presentations

- **Long-term International Fellowship (One-year),** funded by **Indian Council of Medical Research, Government of India,** amounting to $36,600, for postdoctoral training and research at National Institute of Allergy and Infectious Diseases, NIH, USA.
- **Travel grants to early-career researchers from American Association of Immunologists** for attendance and paper presentation (poster) at the **17th International Congress of Immunology, 2019,** Beijing, China, organized by IUIS and CSI, on 19-23rd October, 2019. [Abstract published in ***European Journal of Immunology;*** doi.org/10.1002/eji.201970400]**.**
- **Joint Winner of the BRIC idea exposition stipend of Rs. 25000/- (Theme: Pharmaceuticals and Nutraceuticals),** organized by the Biotechnology Industry Research Assistance Council (BIRAC), IKP Knowledge Park (IKP), and IICB (TRUE), Salt Lake, Kolkata on 20-21st September, 2019
- **ECI- AAI Travel Grant award, from American Association of Immunologists** for participating and poster presentation of the thesis work at the **European congress of Immunology, September, 2018,** organized by, EFIS and DSI, NVVI at Amsterdam, Netherland.
- Poster presentation **at 'Gordon Research Conference on Biology of Host- Parasite Interactions,' June, 2018,** at Newport, RI, USA**. [Travel Grant Recommended by University Grants Commission, India for full support]**
- **'Young Scientist Travel Support Award from ICMR and CSIR India, sponsored by Govt. of India,** for participating and paper presentation (poster) at **ASM/ESCMID Conference on Drug**

Development to Meet the Challenge of Antimicrobial Resistance, September, 2017, organized by the ASM & ESCMID, at Boston, USA.

- **'100 students initiative scheme' Travel Support Award from KAMRC, India, sponsored by WHO & DNDi, Geneva** for participating and paper presentation (ORAL) at **6th World Congress on Leishmaniasis, May, 2017**, organized by WHO Collaborating Centre for Leishmaniasis, Madrid and the Drugs for Neglected Diseases initiative, Geneva, at Toledo, Spain.
- **International Travel Support Grant as young scientist (DST Science & Engineering Research Board)** for attendance & paper presentation (ORAL) at **International Congress of Immunology, August, 2016,** Melbourne Australia, organized by International Union of Immunological Societies and the Australasian Society for Immunology. [Abstract published in ***European Journal of Immunology; 46(1): 2016].***

Academic Qualification

EXAMINATION	BOARD/ UNIVERSITY	(%)	CLASS/ DIVISION	YEAR OF PASSING
Joint CSIR-UGC NET (Life Sciences)	CSIR-UGC, India	N.A.	CSIR-UGC NET (LS) Rank-0030/0848 (2012)	2012, 2013, 2014
M.Sc. Zoology (Specialization in Parasitology & Immunology)	Bidhannagar College, W.B.S.U., West Bengal, India	82.5%	1st	2010
B.Sc. Zoology (Hons.)		61%	1st	2008

Research and Academic Experiences

Name of Institution	Full Time/	Particulars in Full	From	To
Dept. of Zoology, West Bengal State University	Full Time	**JRF, DBT Project; PI: Dr. Chiranjib Pal**	03.02.2012	31.05.2012
Dept. of Zoology, West Bengal State University	Full Time	**Laboratory Assistant, ICMR Project; PI: Dr. Chiranjib Pal**	01.06.2012	19.02.2015
Post Graduate Dept. of Zoology, Barasat Govt. College	Full Time Permanent	**Assistant Professor in Zoology, W.B.E.S., Department of Higher Education, GoWB**	20.02.15	Continuing

Awards & Achievements

- **Oral presentation** at international seminar series, organized by LMVR, NIAID, NIH, USA on 16.02.2024
- **Oral presentation** at 1st regional science and technology congress, being organized by the DST, Govt. of West Bengal on November 13 and 14, 2016
- **Poster presentation** on, 'Astrakurkurone, a novel ……. in *Leishmania donovani*' at National Seminar on "Ethnopharmacology: perspectives for Development of Ayurveda" on 19th March, 2016, jointly organized by NRIADD, CCRAS, GoI & SFE-India and awarded **best poster** for the same.
- **Poster presentation** on, '*Mycobacterium indicus pranii* (*Mw*) in combination …… and induction of CXCL10' at Symposium on Frontiers in Modern Biology, 2015, organized by Dept. of Biological Sciences, IISER-Kolkata; December 5th -6th 2015 and awarded **best poster** for the same.
- **Oral presentation** at "Elimination of Leishmaniasis in South Asia by 2015: Myth or reality?" IPGMER, Kolkata on 22nd January, 2015.
- **Oral presentation and the best Poster presentation** on, 'Astrakurkurone, a novel …… in *Leishmania donovani*' at International Conference on "Molecular Biology and its Applications", on February 14th and 15th, 2014, by Department of Life Science and Biotechnology, Jadavpur University, Kolkata.

Training Programs and Workshops

- Attended **International Webinar on "Vaccines from Vectors",** Organized by Dept. of Zoology, WBSU; August 25, 2020
- Attended **107th Indian Science Congress** at University of Agricultural Sciences, GKVK, Bengaluru during 5-6th January, 2020; funded by the Biotechnology Industry Research Assistance Council (BIRAC), IKP Knowledge Park (IKP).
- **Training Course on Clinical Flow Cytometry**, organized by CRNN, University of Calcutta in association with BD Biosciences (India); June 11th – 13th 2013.
- **International Workshop on Application of Flow Cytometry and Imaging in Cell Biology and Nano-Biotechnology**, organized by CRNN, University of Calcutta; August 11th-18th 2012.