Asmita Das

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Qualifications

PhD Immunology(JNU) , Postdoc NIH,USA

Areas of Interest

Immunology and Immunotherapeutics

Dr. Asmita Das completed BSc (H) Microbiology from Delhi University, Gargi College and master's degree in Biotechnology from M.S. University, Baroda. She received her PhD in Immunology from Jawaharlal Nehru University, New Delhi. During her PhD she worked on Natural Killer cell development in mouse models and also worked on NK cell interaction with tumor cells. Thereafter she moved to National Institutes of Health, USA for postdoctoral research in the laboratory of Immunogenetics in National Institute of Allergy and Infectious diseases, at NIH, USA. During her postdoctoral research she worked on NK cell signaling in humans. Her work in the field was acclaimed as the top 10% articles in Journal of Immunology (IF:5.6) and also published in reputed peer reviewed journals (Immunity: Impact factor of 20.5 and Autophagy: Impact Factor of 11.8). While at NIH she also worked as part of the Fellows Editorial Board of National Cancer Institute at National Institute of Health (NIH), USA.
Her present research interest includes cellular immunology, NK receptor signaling and immunotherapeutics. She has also pioneered interdisciplinary research in the field of CFD analysis with body fluids in collaboration with the Mechanical Engineering dept at DTU and IIT Delhi.
She is also engaged in collaborative research in the field of Cancer Biology with Industry and other academic institutes like JNU, NII and others.

Research areas pursued in the lab:

- To study the regulation of Natural Killer cell activity and receptor expression.
- Several reports have previously shown that NK cells in specific organs like liver, uterus and lungs show hypo-activity compared to peripheral NK. We are engaged in finding the basis for this altered NK activity and also tumour mediated alteration in NK profile in these organs.
- The tumour cells also employ various strategies to evade the immune system and in our laboratory we study tumour cell expressed ligand induced NK cell activity modulation.
- Evaluating the role of inflammation in cancer therapy.
- In-silico analysis of natural products for potential combinatorial cancer therapy by immunomodulation.
- Vaccine development for dental caries and other periodontal complications.
- Role of HLA haplotype profile in Cancer Epidemiology.
- Role of TLR in NK mediated cancer therapeutics.

Interdisciplinary research:

1. With IIT Mechanical Engineering

Use of Computational Fluid dynamics in diagnostics of Autoimmune diseases.

Presently autoimmune diseases are generally detected at an advanced stage and since the therapy involves immunosuppression, prolonged therapy has various serious side effects. My lab is collaborating with mechanical engineering department to adapt Computational Fluid Dynamics algorithm to be able to diagnose Autoimmune disorders at early stages.

2. With Civil Engineering (DTU)

Development of Bacterial Concrete

Post construction damage is often due to formation of pores in concrete structures due to wear and tear and hence our lab is engaged in interdisciplinary research in conjunction with Department of Civil Engineering in optimizing bacterial culture in concrete preparations that will minimize pore formations and also affect losses due to postconstruction damage.

SPONSORED RESEARCH PROJECTS:

1. Principal Investigator: Tumor cell mediated Immunomodulation funded by DST for Rs 20.2L

2. Co investigator: Studies on elucidating Silver Nanoparticle as potent inhibitor of hyphal morphogenesis and drug resistance in opportunistic fungal pathogen, Candida and potential host cell toxicity funded by UPE JNU for Rs 11L

PUBLICATIONS:

- Madhuri Chaurasia, **Asmita Das***, B.S. Dwarakanath, Anne Simonsen, Kulbhushan Sharma **(Supervisor) (2018)** Radiation induces perk and Ire1 mediated pro-survival autophagy. **Autophagy** , Taylor and Francis publication ISSN:1554-8627 **Impact Factor 11.1** (in press)

- Sharma R, **Das A*. (*corresponding author)(2018)** In silico approach to study affinity of NK cell inhibitory receptor interaction with classical and non classical ligands **Archives of Immunology and Allergy** 1, (2) 40-53 ISSN: 2639-1848

- Divya Joshi, Nausheen Tickoo, Chatanya Jain, **Asmita Das* (*corresponding author) Book Chapter** in Advances in biotechnology ISBN: 978-81-935757-0-3. Chapter1 (pp1-13)

- Mylavarapu S, **Das A***, Roy M. (2018) (***Supervisor**) Role of BRCA Mutations in the Modulation of Response to Platinum Therapy. **Frontiers in Oncology** 8(16). Doi:0.3389/fonc.2018.00016. Ecollection 2018. ISSN: 2234-943X **Impact factor 6.4**

- Sharma R, **Das A***. **(*corresponding author)**(2018) IL-2 mediates NK cell proliferation but not hyperactivity. **Immunol Res.** 66(1):151-157. doi: 10.1007/s12026-017-8982-3.**Springer Publication** ISSN: 0257-277X **Impact Factor 2.9**

- Augustine S, Singh J, Srivastava M, Sharma M, **Das A**, Malhotra BD.(2017) Recent advances in carbon based nanosystems for cancer theranostics. **Biomaterial Sci**. 5(5):901-952. ISSN 2047-4849 **Impact Factor 3.614**

- Dholakia D, Goyal S, Jamal S, Singh A, **Das A**, Grover A Molecular modeling and lead design of substituted zanamivir derivatives as potent anti-influenza drugs **BMC Bioinformatics** 2016 Dec 22;17(Suppl 19):512. doi: 10.1186/s12859-016-1374-1. 1471-2105 (Online) Impact Factor 2.4
- Richa Mishra, Ruchi Verma, Sakshi Shreni, Jaspreet Kaur, Divya Joshi, **Asmita Das (corresponding author)** (2016) Evaluating the basis for NK sensitivity and NK resistance in prototypic NK sensitive and resistant cell line. **JSM Chemistry 4(4) 1035** ISSN: 2334-1831

- Kumari N, Dwarakanath B S, **Das A.**, Bhatt. A.N. (2016) Role of IL-6 in cancer progression and therapeutic-resistance. **Tumor Biology (Impact factor: 3.6)** Sep;37(9):11553-11572. ISSN: 1010-4283 (print version) 1423-0380 (electronic version)

- Chaurasia M., Bhatt A., **Das A**., Dwarakanath B., Sharma K **(2016)** Radiation induced autophagy: Mechanisms and consequences. **Free Radical Research** ISSN: 1071-5762 (Print) 1029-2470 (Online) **(Impact Factor:2.97**)

- Chaurasia M, Misra S., Bhatt A. N., **Das A**., Dwarakanath B., Sharma K. (**2015**) Metabolic imbalance associated mitophagy in tumor cells: Genesis and implications **Journal of Cancer Research Updates**, 4, 95-107 ISSN: 1929-2279

- **Das A (corresponding author)** and Dhanjal J K. **(2015)** Medicinal plants, a gold mine of anticancer compounds **American International Journal of Research in Formal, Applied & Natural Sciences** ISSN (Print): 2328-3777, ISSN (Online): 2328-3785, ISSN (CD-ROM): 2328-3793 9(1), December-2014 to February- 2015,14-23.

- Dhanjal J K, Sharma S., Grover A., **Das A (corresponding author)(2015)** Use of ligand-based pharmacophore modeling and docking approach to find novel acetylcholinesterase inhibitors for treating Alzheimer's. **Biomedicine & Pharmacotherapy** 71 (2015) 146–152 **Elsevier Publication (Impact factor: 2.239)** ISSN: 0753-3322

- Sharma R and **Das A (corresponding author) (2014)** Organ specific phenotypic and functional features of NK cells in humans. **Immunologic Research,** 58, no. 1, 125-131**,Springer Publication (Impact factor: 3.525)** ISSN: 0257-277X (DOI 10.1007/s12026-013-8477-9)

- Kaur H, Sharma R and **Das A (corresponding author) (2013)** "Mir"acles in Neuro Molecular Medicine. **International Journal of Biotechnology and Bioinformatics** Vol.2, Issue.1, 19-26. ISSN: 2319-9334

- Parnika, Harshal and **Asmita Das (corresponding author) (2013)**,IIE INT'L Conference Proceedings of International Conference on Emerging Trends in Engineering and Technology, 123-127. (ISBN: 978-93-82242-52-9)

- Kim H. S., **Das A**., Gross C., Bryceson Y.T., Long E.O. **(2010)** Synergistic signals for natural cytotoxicity are required to overcome inhibition by c-Cbl. **Immunity 32(2) 175-186. (Impact factor: 20.6)** ISSN:1074-7613

- **Das, A.** and Long E.O. Granule polarization in NK cells is a better target for inhibition than degranulation. **(2010) Journal of Immunology 185, 4698-4704. (Impact factor: 5.7)** ISSN:0022-1767 **(Selected among the top 10% articles published in the journal in 2010).**

- **Das, A**. and Saxena, R.K. **(2004)** Role of interaction between Ly49 receptors and cognate MHC I molecules in IL2 induced development of NK cells in murine bone marrow cell cultures. **Immunology Letters 94 (3), 209-214 (IF:2.7). Elsevier Publication** ISSN:0165-2478
- **Das, A.**, Gupta M. and Saxena, R.K. **(2004)** Enhanced activation of murine NK cells by IL2 in presence of circulating immune complexes. **Current Science 87 (6) 780-783** (ISSN:0011-3891)**.**

- **Das A.**, Sarin A. and Saxena R.K. **(2002)** Modulation of NK cell activation and interaction with target cells. **Proc. Nat. Acad. Sci. (India) B69, No.1, 47-60** (ISSN:0370-0046).

- **Das, A.** and Saxena, R.K. **(2001)** Abrogation of tumor induced KIR expression on mouse spleen cells by Mitomycin C. **Immunology Letters 77 (2), 73-77 (IF:2.7). Elsevier Publication** (ISSN:0165-2478)

- Dhillon, S., **Das, A** and Saxena, R.K. **(1999)** Activating and Inhibitory receptors on Natural Killer cells. **Proc. Nat. Acad. Sci. (India) 69 (B), 229-243** (ISSN:0370-0046)**.**

BOOK CHAPTERS:

- Divya Joshi, Nausheen Tickoo, Chatanya Jain, **Asmita Das* (*corresponding author) Book Chapter** in Advances in biotechnology ISBN: 978-81-935757-0-3. Chapter1 (pp1-13)
- Awasthi K., Prasad T and **Das A. (Corresponding Author**)(2016) Detection of multidrug resistant

fungal infections in cancer patients (Book Chapter) **Molecular Markers in Mycology (Springer)** ISBN 978-3-319-34106-4

- **Das A**., Dhillon S., and Saxena R.K. **(2003)** A chapter, "Modulation of NK cell activation by tumor cells: Role of MHC I molecules and their receptors" in book titled **"Progress in Haematologic Oncology" published by The Advanced Research Foundation, New York.**

Invited lectures/ Chairmanship at conferences and organizing conferences/workshops:

- Invited lecture at AIIMS New Delhi on 6th September 2016
- Invited lecture at the Industry-Academia Meet in NPL, New Delhi. 13 Dec 2012
- Chairperson: Biotechnology Session in National Conference on Innovation in Engineering
- Organizing Committee member in National Conference in Biotechnology and Bioinformatics in DTU (2010)
- India-Japan workshop on "Biomolecular Electronics and Organic Nanotechnologyfor Environment Preservation" (2013)
- Invited expert as Selection Committee Member: DRDO Cash Awards, 2014
- Invited expert as Expert Committee Member: DRDO Fellowship Review Board, 2014
- Paper Setter for IGNOU PhD Entrance Test in Engineering and Technology
- Question paper moderator for Annual Examinations in School of Engineering and Technology, IGNOU

Editorial Responsibilities:

- Edited manuscripts as part of **Fellows Editorial Board** in **National Cancer Institute, NIH, USA**
- Invited reviewer for **PLOS one** (impact factor 4.1)
- **Editorial Board Member of Journal of Biosciences GSTF, Singapore**
- **Editorial Board Member of International Association of Innovation Research**
- Course on **Translational Research in Clinical Oncology** conducted by **National Cancer Institute (NIH), USA**

Membership of professional societies:

Life member of the Indian Immunology Society

Life member of The Indian Science Congress

AWARDS RECEIVED:

- **Research Excellence Award, DTU**
- **Council of Scientific & Industrial Research (CSIR)** (Govt. of India)-**Senior Research Fellowship qualified in Nov 2001**
- **Council of Scientific & Industrial Research (CSIR)** (Govt. of India)-**NET & Junior Research Fellowship (JRF) qualified in 21 DEC.1997**
- **Department of Bio-Technology (DBT) scholarship** from Govt. of India
- **Central Board of Secondary Education (CBSE) National Scholarship in1992**