

1. Updated CV

1. **Name** Dr. Poonam Gautam
2. **Designation** Scientist 'C'
3. **Present Address (off.)** Scientist and In-charge, Central Proteomics Facility, National Institute of Pathology (ICMR), Post Box No. 4909, Safdarjung Hospital Campus, New Delhi-110029, India
4. **Telephone (off.)** Phone (O): 011 -26198402-406, 409, 410 Ext. 406
5. **Fax** 011 -26198401
6. **Email address** gautamp@icmr.org.in, gautam.poonam@gmail.com

7. Educational Qualifications

M. Sc., Ph. D.

8. Research Experience

- 1) Working as Faculty at National Institute of Pathology (ICMR), New Delhi, since Feb 2012.
- 2) Worked as 'Research Associate' at Proteomics Research Facility, Centre for Cellular and Molecular Biology (CCMB), Hyderabad from July 2007- Jan 2012
- 3) Ph. D. from Institute of Genomics and Integrative Biology (IGIB), Delhi and Department of Biotechnology, University of Pune (2007)
- 4) M. Sc. (Bio Technology) from Banaras Hindu University (BHU), Varanasi (1997)

9. Research interest

My research interest is identification of protein-based biomarkers for early diagnosis/ post-treatment surveillance and therapeutics of gallbladder carcinoma and glioma.

10. Membership/Fellowship of Professional Societies/Associations:

- Member of Human Proteome Organization (HUPO) organization
- Life Membership of Proteomic Society of India (PSI)
- Life membership of Indian Immunology Society (IIS)
- Member of Indian Association of Cancer Research (IACR)

11. Workshops/Conferences/Symposiums

Invited lecture

1. **Invited talk** entitled "Proteomic Approaches in Disease Biomarker Discovery –Applications and Challenges" **An Update on Advances in Cancer Research and Hands-on Workshop on Molecular Biology Techniques** held from 10th -12th September, 2015 at Dr. B. Borooah Cancer Institute, Guwahati
2. **Invited for a talk** under session "Infectious diseases- Genomics and Proteomics" at **ACBICON 2014** held from 10th-13th December, 2014 at AIIMS, Jodhpur.
3. **Invited lecture** entitled "Transcriptomic and proteomic profile of *Aspergillus fumigatus* on exposure to artemisinin" in the **Indo-French Symposium "Host-Pathogen interactions in respiratory Infectious Diseases"** in Bangalore on October 11-13, 2010.

National/ International conference

Organization of workshops

- **Organizing Secretary** for “**Proteomics- Hands On Training Workshop**” held at NIP, Delhi from **6th-9th April 2015** [Partially supported by ICMR].
- **Member** of Scientific Organizing Committee for “**SAFHeR foundation workshop on Clinical and Laboratory Medicine Research**” held at NIP, Delhi from **9th-12th February, 2015** [Supported by ICMR/DHR].
- **Member** of Scientific organizing committee for a Workshop on “**Research Methodologies for Medical Scientists**” at National Institute of Pathology, Delhi held from **9th -12th Oct 2012** [Partially supported by ICMR].

Participation in Workshops/Conferences

1. Attended **8th Annual meeting of Proteomics Society, India (PSI)** and 3rd meeting of Asia Oceanica Agricultural Proteomics Organization (AOAPO) organized by **NIPGR, Delhi** at Hotel The Grand from 14th -17th Dec.2016.
2. Attended **Workshop on Protein Microarrays** under 6th Proteomics Society, India (PSI) and attended **6th Proteomics Society, India (PSI) meeting** held at IIT, Mumbai, from 7th-11th December, 2014
3. Attended **5th International Conference on Translational Cancer Research- Multi- Targeted Approach to Treatment of Cancer**, held at Vigyan Bhawan, **New Delhi** from **February 6th – 9th, 2014**.
4. Attended “**Pre-Congress Training course HUPO 2013**” on “**Modern Techniques in Proteomics**” from 11th -13th September 2013 and **HUPO Congress 2013** from 14th -18th September, 2013 at **Yokohama, JAPAN**. *Supported by HUPO Organizers, DST and INSA*
5. Poster presentation of research work on “Studies on molecular mechanisms of amphotericin B and artemisinin against *Aspergillus fumigatus* using transcriptomic and proteomic approach” in **5th AOHUPO** conference to be held from **21st-25th Feb 2010** at Hyderabad, India.
6. Poster presentation of research work on “Proteomic Analysis of *Aspergillus fumigatus* to Identify Molecular Targets of Artemisinin” in “**HUPO 2009**” held from **26th -30th September 2009** at Toronto, Canada.
7. Oral presentation on “Immunoproteomic approach for identification of novel allergens of *Aspergillus fumigatus*” at **World Allergy Congress 2007**, held from 2nd-6th December 2007 at Bangkok, Thailand. Received **Travel Award** from the World Allergy Organization.

12. Miscellaneous

Research Projects

Ongoing

1. “Identification of the factors associated with susceptibility/ resistance to heterosexual HIV transmission among serodiscordant couples using proteomics” **Co-investigator**. Department of Biotechnology. 34.93 L. 3 years [2013-16].
2. "Autoantibody Response And Identification Of Tumor-Associated Antigens In Gallbladder Carcinoma - Immunoproteomics Approach" **Principal Investigator** Approved by **DST**, funds awaited. Appx 26 Lakhs. 3 years.

Submitted

3. “Proteomic Analysis of Plasma Exosomes to Identify Circulatory Biomarkers for Gallbladder Carcinoma” **Principal Investigator**. Technically approved by **ICMR**, funds awaited. Appx 40 Lakhs. 3 years

13. Publications

a) Manuscripts (15)

1. Jayaram S, Gupta MK, Raju R, **Gautam P**, Sirdeshmukh R. Multi-Omics Data Integration and Mapping of Altered Kinases to Pathways Reveal Gonadotropin Hormone Signaling in Glioblastoma. **OMICS**. 2016 Dec;20(12):736-746. **IF 2.896**
2. Ravindra Varma Polisetty*, **Poonam Gautam***, Manoj Kumar Gupta, Rakesh Sharma, Harsha Gowda, Durairaj Renu, Bhadravathi Marigowda Shivakumar, Akhila Lakshmikantha, Kiran Mariswamappa, Praveen Ankathi, Aniruddh K Purohit, Megha S Uppin, Challa Sundaram, Ravi Sirdeshmukh. Microsomal membrane proteome of low grade diffuse astrocytomas: Differentially expressed proteins and candidate surveillance biomarkers. **Scientific Reports** 2016 Jun 1;6:26882. **IF 5.578**
3. **Gautam P**, Mushahary D, Hassan W, Upadhyay SK, Madan T, Sirdeshmukh R, Sundaram CS, Sarma PU. In-depth 2-DE reference map of *Aspergillus fumigatus* and its proteomic profiling on exposure to itraconazole. **Med Mycol**. 2016 Feb 11. pii: myv122. **IF 2.26**
4. Mahajan L, Gautam P, Dodagatta-Marri, Madan T, Kishore U. Surfactant protein SP-D modulates activity of immune cells: proteomic profiling of its interaction with eosinophilic cells. **Expert Rev. Proteomics** 2014 Jun;11(3):355-69 (**IF-3.896**).
5. Mahajan L, Pandit H, Madan T, **Gautam P**, Yadav AK, Warke H, Sundaram CS, Sirdeshmukh R, Sarma PU, Kishore U, Surolia A. Human surfactant protein D alters oxidative stress and HMGA1 expression to induce p53 apoptotic pathway in eosinophil leukemic cell line. **PLoS One**. 2013 Dec 31;8(12):e85046 (**IF 3.730**).
6. ***Gautam P**, Nair SC, Ramamoorthy K, Swamy CV, Nagaraj R. Analysis of human blood plasma proteome from ten healthy volunteers from Indian population. **PLoS One**. 2013 Aug 20;8(8):e72584 (**IF 4.09**).
7. Polisetty RV, **Gautam P**, Gupta MK, Sharma R, Uppin MS, Challa S, Ankathi P, Purohit AK, Renu D, Harsha HC, Pandey A, Sirdeshmukh R. Heterogeneous Nuclear Ribonucleoproteins and Their Interactors Are a Major Class of Deregulated Proteins in Anaplastic Astrocytoma: A Grade III Malignant Glioma. **J Proteome Res**. 2013 Jul 5;12(7):3128-38. (**IF 5.1**).
8. Mushahary D, ***Gautam P**, Sundaram CS, Sirdeshmukh R. Expanded protein expression profile of human placenta using two-dimensional gel electrophoresis. **Placenta**. 2013 Feb;34(2):193-6. (**IF 3.65**).
9. **Gautam P***, Nair SC*, Gupta MK, Sharma R, Polisetty RV, Uppin MS, Sundaram C, Puligopu AK, Ankathi P, Purohit AK, Chandak GR, Harsha HC, Sirdeshmukh R. Proteins with altered levels in plasma from glioblastoma patients as revealed by iTRAQ-based quantitative proteomic analysis. **PLoS One**. 2012;7(9):e46153. (**IF 4.4**).
10. Polisetty RV*, **Gautam P***, Sharma R, Harsha HC, Nair SC, Gupta MK, Uppin MS, Challa S, Puligopu AK, Ankathi P, Purohit AK, Chandak GR, Pandey A, Sirdeshmukh R. LC-MS/MS analysis of differentially expressed glioblastoma membrane proteome reveals altered calcium signaling and other protein groups of regulatory functions. **Mol Cell Proteomics**. 2012 Jun;11(6):M111.013565. (**IF 8.8**).
11. Upadhyay SK, **Gautam P**, Pandit H, Singh Y, Basir SF, Madan T. Identification of fibrinogen-binding proteins of *Aspergillus fumigatus* using proteomic approach. **Mycopathologia**. 2012 Mar;173(2-3):73-82. (**IF 1.8**).
12. **Gautam P**, Upadhyay SK, Hassan W, Madan T, Sirdeshmukh R, Sundaram CS, Gade WN, Basir SF, Singh Y, Sarma PU. Transcriptomic and proteomic profile of *Aspergillus fumigatus* on exposure to artemisinin. **Mycopathologia**. 2011 Nov;172(5):331-46. (**IF 1.8**).
13. **Gautam P**, Shankar J, Madan T, Sirdeshmukh R, Sundaram CS, Gade WN, Basir SF, Sarma PU. Proteomic and transcriptomic analysis of *Aspergillus fumigatus* on exposure to amphotericin B. **Antimicrob Agents Chemother**. 2008 Dec;52(12):4220-7. (**IF 4.7**).

14. **Gautam P**, Sundaram CS, Madan T, Gade WN, Shah A, Sirdeshmukh R, Sarma PU. Identification of novel allergens of *Aspergillus fumigatus* using immunoproteomics approach. **Clin Exp Allergy**. 2007 Aug;37(8):1239-49. (IF 3.5).
15. **Gautam P**, Madan T, Gade WN, Sarma PU. Immunoproteomic analysis of secretory proteins of *Aspergillus fumigatus* with specific IGE immunoreactivity. **Indian J Clin Biochem**. 2006 Sep;21(2):12-9.

b) Book Chapter (06)

1. Book chapter entitled "**Human fungal pathogens and drug resistance against azole drugs**". **Authors:** Preetida J. Bhetariya, Neha Sharma, Pragati Singh, Priyanka H. Tripathi, Santosh K. Upadhyay and *Poonam Gautam in a Book entitled "Drug Resistance" Editors- Andaleeb Sajid, Gunjan Arora, V. C. Kalia and Publisher- Springer (In Press)
* *Corresponding author*
2. Book chapter entitled "**Drug Resistance in Cancer**". Authors- Santosh K. Upadhyay, Ramesh C. Rai, Rekha Gehtori, Ashutosh Paliwal, **Poonam Gautam**, Penny Joshi in a Book entitled "Drug Resistance" Editors- Andaleeb Sajid, Gunjan Arora, V. C. Kalia and Publisher- Springer (In Press).
3. Book chapter entitled "**Human pathogenic fungi and their survival mechanisms in the host**". Authors- Tapish Dogra, Lakshna Mahajan, Santosh K. Upadhyay, **Poonam Gautam (2016)** in Book "Applied Microbiology: Microbes in Action" Editors- Neelam Garg and Abhinav Aeron and Publisher- Nova Science (Book chapter 14; ISBN: 978-1-63484-520-5).
* *Corresponding author*
4. Book chapter entitled "**Use of microbes in the production of vaccines**". Authors- Rini Joshi, Tara Singh Bisht, Lakshna Mahajan, **Poonam Gautam**, Alissa Verone-Boyle, Santosh Kumar Upadhyay (**2016**) in Book "Applied Microbiology: Microbes in Action" Editors- Neelam Garg and Abhinav Aeron and Publisher- Nova Science (Book chapter 12; ISBN: 978-1-63484-520-5).
5. Book chapter entitled "**Gut Microbiota and human health**". Authors- Lakshna Mahajan, Santosh K. Upadhyay, A. Archana, **Poonam Gautam (2016)** in Book "Applied Microbiology: Microbes in Action" Editors- Neelam Garg and Abhinav Aeron and Publisher- Nova Science (Book chapter 10; ISBN: 978-1-63484-520-5).
6. Book Chapter entitled "Allergens/antigens of *Aspergillus fumigatus*" Authors- **Poonam Gautam**, P. Usha Sarma and Taruna Madan (**2005**) in a book "**Mold Allergy, Biology and Pathogenesis**" edited by Dr. V. P. Kurup. Page No. 176-186.

14. Awards and Honours

1. Selected for "Pre-Congress Training course HUPO 2013" on "Modern Techniques in Proteomics" from 11th -13th September 2013 at Yokohama, JAPAN. HUPO provided the partial financial support.
2. Travel award (full travel support) from DST and partial financial Support from INSA to attend HUPO 2013 at Yokohama, JAPAN from 14th-18th September, 2014.
3. HUPO Young Investigator award 2009
4. Travel award (full travel support) from DST to attend HUPO 2009 at Toronto, Canada.
5. Travel Award from the World Allergy Organization to attend World Allergy Congress 2007, held from 2-6th December 2007 at Bangkok, Thailand
6. Roche Travel Award (full travel support) from HUPO organizers to attend HUPO 5th Annual World Congress at Long Beach in 2006
7. CSIR-NET Senior Research Fellowship 2003-2006
8. CSIR-NET Junior Research Fellowship 2001-2003

15. Research Guidance

- Ph.D. students
 - Ms. Priyanka H. Tripathi, DBT-JRF
 - Mr. Javed Akhtar, CSIR-JRF
- Supervised M.Sc. students for their Dissertation Project (4-6 months)

2. Brief write-up about your area of research

Glioblastoma multiforme (GBM) is one of the most malignant and aggressive forms of primary brain tumors and despite major advances in high-throughput technologies and multi-dimensional profiling in the last decade, management of GBM remains a clinical challenge and new drugs are needed for treatment of this aggressive tumor. The laboratory is focusing on understanding the molecular mechanism of GnRH signalling in glioblastoma (GBM) and exploring the potential of targeting this pathway for therapeutic applications.

Gallbladder carcinoma (GBC) is the fifth most common and aggressive malignancy of the gastrointestinal tract, with high prevalence and incidence rate in Latin America and Asian region, including northern and northeast India. Five-year survival rates for advanced stages are drastically low in comparison to early stages. Therefore, it would be important to diagnose the disease at early stages in order to have increased survival of GBC patients. The laboratory is focusing on identification of circulatory biomarkers for early diagnosis of gallbladder carcinoma (GBC). We are analyzing autoantibody response in GBC patients to detect the disease at early stage, which may be useful for improving survival of these patients.

3. List of total Ph.D/DNB students who are currently registered and those that have completed with name, year, title and university

Ph.D. students (Registration under process)
Ms. Priyanka H. Tripathi (DBT-JRF)
Mr. Javed Akhtar (CSIR-JRF)

4. Complete publication list

b) Manuscripts

1. Jayaram S, Gupta MK, Raju R, **Gautam P**, Sirdeshmukh R. Multi-Omics Data Integration and Mapping of Altered Kinases to Pathways Reveal Gonadotropin Hormone Signaling in Glioblastoma. **OMICS**. 2016 Dec;20(12):736-746. **IF 2.896**
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