

Dr. Rajesh Kumar Gupta

Designation : Associate Professor
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Phone No : +912067919444
Qualification : M.Sc., Ph.D.
Area of Specialization: Biochemistry, Immunology and Glycobiology



Academic Qualifications:

- ✓ **Ph.D.** (Life Sciences) (2005) School of Life Sciences, Devi Ahilya University, Indore (MP) INDIA
Title of Thesis: Title of thesis "Isolation, Purification and Characterization of Sheep Galectin"
- ✓ **M.Sc.** (Life Sciences) (1999) School of Life Sciences, Devi Ahilya University, Indore (MP) INDIA
- ✓ **B.Sc.** (Chemistry, Botany, Zoology) (1997) Faculty of Science, DDU Gorakhpur University, Gorakhpur (UP), INDIA

Professional Experience:

- ✓ **Assistant Professor (Biotechnology) (Aug 2014-Present)** Dr. D. Y. Patil Biotechnology & Bioinformatics Institute (Dr. D. Y. Patil Vidyapeeth), Pune, INDIA
- ✓ **Postdoctoral Scholar (Aug 2013 – Mar 2014)** Department of Microbiology, Immunology and Molecular Genetics, University of Kentucky College of Medicine, Lexington, KY, USA Supervisor: Prof. A. Sinai; Research Project: Toxoplasma Glycobiology
- ✓ **Post Doctoral Fellow (Research Fellow Grade 1) (Apr 2012- Apr 2013)** Institute for Glycomics, Griffith University, Gold Coast Campus, QLD, 4222, Australia Supervisor – Associate Prof. Helen Blanchard, Research Leader
Research Project: Glycan Array, Crystallization and X-ray structure determination of galectins.
- ✓ **Post Doctoral Fellow (Apr 2008- Mar 2012)** National Institute of Immunology, Aruna Asaf Ali Marg, New Delhi, INDIA
Supervisor- Prof. Avadhesh Surolia & Dr. Amulya K. Panda, NII, New Delhi & Molecular Biophysics Unit, Indian Institute of Science, Bangalore, INDIA
Research Project: Purification of Plant lectins and Interaction of antigen loaded polylactide particles with immune cells and their correlation with immune response.

- ✓ **Post Doctoral Fellow (Sep 2007 – Feb 2008)** The French Embassy, Post-doctoral Fellowship, New Delhi, India
 Supervisor- Dr. Nicole Thielens, Head, Immune Response to Pathogens and altered-self Group & Innate immune proteins at the host-pathogen interface team (Previously Laboratoire d'Enzymologie Moleculaire), IBS, Grenoble, France
 Research Project: Structural and enzymatic characterization of the serine protease domain of human mannan-binding lectin associated serine protease-3 (MASP-3).
- ✓ **Post Doctoral Fellow (Nov. 2005-Aug 2007)** School of Life Sciences, Devi Ahilya University, Indore, MP, INDIA; Supervisor- Prof. Krishnan Hajela
 Research Projects: "Studies on involvement of lectin pathway of complement activation in coagulation based defense mechanism", "The effect of mannose binding lectin gene and promoter polymorphism on susceptibility to leprosy in Indian population", Studies on activation of neutrophils by galectin-1,
- ✓ **Junior Research Scientist** ((Jun 1999- Feb 2000) Bio-Med (Pvt.) Ltd., Ghaziabad, INDIA
 Employer- Dr. S.P. Garg (Managing Director)
 Research Project: Development of capsular polysaccharide vaccine against *Haemophilus influenzae* type b, typhoid diagnostic kit

Publications:

1. **Rajesh Kumar Gupta**, Kshitij Gupta, Sumati Hajela, and Krishnan Hajela **(2015)** Carbohydrate-induced modulation of cell membrane IX: Binding with galectin-1 disrupts bacterial membrane. **Life Sciences International Research Journal** Vol. 2 issue 1: 355-362.
2. Christine Gaboriaud, **Rajesh Kumar Gupta**, Lydie Martin, Monique Lacroix, Laurence Serre, Florence Teillet, Gerard J. Arlaud, Veronique Rossi, Nicole M. Thielens **(2013)** The serine protease domain of MASP-3: Enzymatic Properties and crystal structure in complex with ecotin. **PLoS ONE** 8(7):e67962.doi:10.1371/journal.pone.0067962
3. **Gupta RK**, Goswami DG, Singh RR, Surolia A, and Panda AK **(2012)** Soybean agglutinin coated PLA particles entrapping candidate vaccines induces enhanced primary and sustained secondary antibody response from single point immunization. **Eur J Pharm Sci.** 45(3):282-95.
4. Bajaj M, Hinge A, Limaye LS, **Gupta RK**, Surolia A and Kale VP **(2011)** Mannose-binding dietary lectins induce adipogenic differentiation of the marrow-derived mesenchymal cells via an active insulin-like signaling mechanism. **Glycobiology** 21 (4):521-529.
5. Kshitij Gupta, **Rajesh K Gupta** and Krishnan Hajela **(2008)** Disease association of mannose binding lectin and potential of replacement therapy. **Ind. J. Med. Res.** (Review) 127(5):431-40

6. **Rajesh K Gupta**, Abhay H Pandey, Krishna C Gulla, H.J. Gabius and Krishnan Hajela (**2006**) Carbohydrate induced modulation of cell membrane VIII. Agglutination with Galectin-1 increases osmofragility and membrane fluidity of trypsinized erythrocytes. **FEBS Letters** 580 (6):1691-5.
7. KC Gulla, K Gupta, **R K Gupta**, V Vyas and K Hajela (**2006**) Development of a fluorescence assay for the detection of L-ficolin-MASP in serum or purified samples. **Journal of Biochemical and Biophysical Methods** 66:59-71.
8. Abhay H Pande, **Rajesh K Gupta**, Sumati and Krishnan Hajela (**2003**) Oxidation of goat hepatic galectin-1 induces changes in secondary structure. **Protein Peptide Lett.** 10(3): 265-275.
9. **Rajesh K Gupta**, Abhay H Pande, Sumati, and Krishnan Hajela (**2003**) EPR Studies of Fc γ Receptor in lymphocyte membrane. **Ind. J. Biochem. Biophys.**40 (1): 59-61.

Workshops/Conferences Attended:

1. **24th International complement Workshop (ICW) held at Crete, Greece, Oral Presentation by** Christine Gaboriaud, **Rajesh Gupta**, Lydie Martin, Monique Lacroix, Gerard J. Arlaud, Veronique Rossi, Nicole M. Thielens (**2012**) Enzymatic Properties of the MASP-3 serine protease domain and crystal structure of its complex with ecotin. Abstract No. 109 published in *Immunobiology* 217 (2012) 1129-1222.
2. Oral presentation at **24th International Lectin Conference, 2011 (24th Interlec 2011)** organized by the Victorian Infectious Diseases Service, Royal Melbourne Hospital, Victoria, Australia, held at Stamford Plaza Hotel, Brisbane, Queensland, Australia from 27th -29th July, 2011 on the topic "Interaction of Soybean agglutinin coated and antigen loaded PLA particles with dendritic cells and its correlation with immune response"
3. **National conference of Shanti Swarup Bhatnagar Award Winners:** on the topic "Carbohydrate induced modulation of cell membrane: Impact of binding of exogenous lectin on model membrane systems" organized by Devi Ahilya University, Indore, INDIA from 8-10 March, **2007. Rajesh Kumar Gupta**, Abhay H. Pande and Krishnan Hajela
4. **British Society of Immunology Annual Congress, 2007:** Demonstration of thrombin like activity in MBL-MASP and Ficolin- MASP complexes in different species. K. Gupta, K.C. Gulla, **R.K. Gupta** and K. Hajela. *Immunology* 120: 55 (Abstract)
5. **22nd Madhya Pradesh Council of Science and Technology Young Scientist Congress** (Discipline - Bio-Science) on the topic "Prediction and proof of membrane spanning propensity of mammalian liver galectin-1" organized by the MP Council of Science & Technology, BHOPAL (MP) INDIA from 28th Feb.-1st March **2007** at Samrat Ashok Technological Institute, VIDISHA (MP) INDIA. **Rajesh Kumar Gupta**

6. **8th FIMSA/ IIS advanced Immunology Course Focus on Clinical Immunology**, March 1-5, **2006** New Delhi. Abstract No. P 41 Estimation of L-Ficolin level in Indian population. Krishana C. Gulla, **Rajesh Kumar Gupta**, Kshitij Gupta and Krishnan Hajela
7. **European Molecular Biology Online (EMBO)** workshop on Developmental and Disease models, IIT Kanpur, INDIA **2006**: Species dependent differences in MBL/Ficolin associated serine proteases: implications in innate immunity. Kshitij Gupta, **Rajesh K. Gupta**, Krishana C. Gulla, and Krishnan Hajela
8. **British Society of Immunology Annual Congress, 2005**: Development of fluorescence assay for the detection of L-ficolin in serum. K.C. Gulla, **Rajesh Kumar Gupta**, K Gupta and Krishnan Hajela. *Immunology*, 116, suppl. Abstract 116
9. **Therapeutic Applications of Mannose Binding Lectin, Biochemical Society Focused Meeting, 20th March, 2003** Edinburgh UK. Abstract no 4, Calcium induces conformational changes in MBL associated serine protease-1. **Rajesh Kumar Gupta** and Krishnan Hajela

Awards:

1. Department of Science and Technology, International Travel support for attending the 24th International Lectin Conference, 2011 (24th Interlec 2011) organized by the Victorian Infectious Diseases Service, Royal Melbourne Hospital, Victoria, Australia, held at Stamford Plaza Hotel, Brisbane, Queensland, Australia from 27th -29th July, 2011.
2. 22nd Madhya Pradesh Council of Science and Technology Young Scientist Award (Discipline-Bio-Science) on the topic "Prediction and proof of membrane spanning propensity of mammalian liver galectin-1" organized by the MP Council of Science & Technology, Bhopal (MP) India from 28th Feb.-1st March 2007 at Samrat Ashok Technological Institute, VIDISHA (MP) India.
3. Federation of Immunological Societies of Asia-Oceania (FIMSA) travel award for attending 8th FIMSA/IIS advanced immunology course Focus on Clinical Immunology, March 1-5, 2006 at All India Institute of Medical Sciences, New Delhi, INDIA.

Fellowship Awarded / Aailed:

1. The French Embassy Post-doctoral Fellowship, the French Embassy, New Delhi, (2007-08).
2. Council of Scientific and Industrial Research, Research Associate (CSIR-RA), New Delhi, (2007)
3. Project Fellow- University Grant Commission (UGC), New Delhi, 2006-07 (Project)
4. Senior Research Fellowship, Indian Council of Medical Research (ICMR-SRF) (2003-06), New Delhi
5. Junior Research Fellow (Project), Defence Research Development Organization (DRDO),(2003)

Membership:

Indian Immunology Society

Trainings: Workshop attended:

1. Workshop on Faculty Development conducted by Dr. D. Y. Patil Vidyapeeth's University Centre for Professional Educational & Faculty Development (UCPE& FD) at Padmashree Dr. D. Y. Patil Medical College, Hospital & Research Centre, Dr. D. Y. PATIL VIDYAPEETH, Sant Tukaram Nagar, Pimpri, Pune from 30/10/2014 to 31/10/2014.
2. Theoretical and practical course "Experimental approaches to studying host- pathogen interaction" from 30th October to 10th Nov 2006 conducted by International Centre for Genetic Engineering and Biotechnology (ICGEB), New Delhi, India.
3. 8th FIMSA/ IIS advanced Immunology Course Focus on Clinical Immunology, March 1-5, 2006, New Delhi, India.
4. Short term course and work shop on Molecular and Genetic Diagnostic Techniques and clinical implications conducted by Reliance Life Sciences at Dhirubhai Ambani Life Sciences centre at Navi Mumbai, India from Jan.16-20, 2006.
5. Workshop on computer basics and application in bioinformatics from 20th-22nd Oct, 2005 conducted by Biotechnology Sub-Centre, Department of Biotechnology, Devi Ahilya University, Indore, INDIA sponsored by Department of Biotechnology, Govt. of INDIA, New Delhi, INDIA.
6. Short term training carried out at Division of Biological Products, Indian Veterinary Research Institute, Izatnagar, (UP), INDIA to learn various techniques of production of Veterinary Immunobiologicals from 01.06.1998 to 10.07.1998.

RAJESH KUMAR GUPTA