

Curriculum vitae

Pankaj Suman, PhD
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Research Experience

- **Feb 2017 to till date: Scientist C, NIAB, Hyderabad**
- **Dec 2014 to Feb 2017: Veterinary Officer;** Department of Animal Husbandry, Govt. of Bihar, Patna
- **June 2013 to Dec 2014: Assistant Professor** at the Amity Institute of Biotechnology, Amity University Uttar Pradesh, Noida, India
 - *Worked on to identify the novel biomarker for the early diagnosis of preeclampsia*
 - *Initiated the work on to design and engineer a highly potent broad spectrum humanized antimicrobial peptide*
 - *Guided 2 B. Tech/M. Tech thesis and 6 summer interns*
 - *Taught immunology and animal biotechnology to B. Tech and M. Tech students*
- **June 2011 to May 2013: Postdoctoral fellow at the National Institute of Immunology, New Delhi, India**
 - *Development of adjunct therapy for pandemic H1N1 virus:*
*Worked as a team member to develop **monoclonal antibodies against pandemic H1N1 virus** by screening the phage display library*
Development of mouse monoclonal antibodies against pandemic H1N1
 - *Development of Contraceptive vaccine to control street dog population:*
Immunogenicity and contraceptive efficacy study of the ZP based contraceptive vaccines in mouse model was evaluated for the humane way to control the population of street dogs and reduce the incidence of rabies

Evaluation of the immunogenicity potential of zona pellucida based plasmid DNA vaccine encapsulated in microsphere
- **July 2006 to May 2011: Graduate student at the National Institute of Immunology, New Delhi, India**
Doctoral thesis entitled “**Delineation of the molecular basis of trophoblast invasion**” under supervision of Dr. Satish Kumar Gupta.
 - *Delineation of the molecular mechanisms of the trophoblast invasion (PhD thesis)*

- *Effect of endometrial decidualization and the endometrial expression of HOXA10 on the regulation of trophoblast invasion*

Evaluation of the immunogenicity potential of the contraceptive vaccine delivered as Virus-like particles (VLPs)

- **June 2007 to May 2010: Visiting fellow at the Friedrich Schiller University, Jena, Germany**

Established the molecular basis of the regulation of invasion of Trophoblast cells under the influence of interleukin-11

Education

- **2006-2011: Ph.D. in Immunology**
National Institute of Immunology, New Delhi, India
Reproductive Cell Biology Laboratory (PI: Dr. Satish Kumar Gupta)
Thesis: **Delineation of the molecular mechanisms of trophoblast invasion**
- **2004-2006: Masters of Science (M.Sc.) Biotechnology**
Indian Institute of Technology Roorkee, Roorkee, Uttarkhand, India
 - Scored 8.08/10 (First Class with Distinction)
 - Scholarship by Department of Biotechnology, Govt. of India
- **1999-2004: Bachelors of Veterinary Sciences & Animal Husbandry**
College of Veterinary and Animal Sciences Parbhani; MAFSU Nagpur, Maharashtra, India
 - Scored 8.85/10 (First Class with Distinction)
 - Second rank at the university level
 - Dr. B. L. Purohit silver medal in Veterinary Pathology for highest merit in Pathology at the University level

Award and Honors

- **2014: Prof. G. P. Talwar Young Scientist Award** for outstanding contribution in reproductive health
- 2010: Travel Grant from United States Department of Agriculture (USDA)
- 2010: Travel Grant from Department of Science and Technology (DST) Govt. of India
- 2009: Best oral presentation, New Delhi, India
- 2007: Best discussant Award, EMBIC summer School, Jena, Germany
- 2006: Junior Research Fellowship-NET from the CSIR, Govt. of India, New Delhi
- 2006: Qualified the Graduate Aptitude Test for Engineering (GATE)
- 2004: Scholarship from Dept. of Biotechnology, Govt. of India for Masters of Sciences study at IIT Roorkee
- 2004: Second highest merit at the University level for the award of B.V.Sc degree
- 2004: Dr. B. L. Purohit medal in Veterinary Pathology at the University level

Publications

- 1. Decrease in Expression of HOXA10 in the Decidua after Embryo Implantation Promotes Trophoblast Invasion.**
Godbole G*, [Suman P*](#), Malik A*, Galvankar M, Joshi N, Fazleabas A, Gupta SK, Modi D. *Endocrinology* 2017 doi: 10.1210/en.2017-00032. [IF: 4.1] *Equal contribution
- 2. Prospects of electrochemical immunosensors for early diagnosis of preeclampsia.**
[Suman P*](#), Gandhi S, Kumar P, Garg K. *Am J Reprod Immunol* 2017; 77 (1):e12584. [IF: 2.9] *Corresponding Author
- 3. Omics and its application in clinical nanotechnology and nanodiagnosics.**
Srivastava R, Sharma S, Srivastava S, [Suman P](#), Chandra P. In book: **Marine OMICS**. Se-Kwon Kim (ed), Taylor and Francis 2016, pp497-512.
- 4. Recent advances in immunosensor for narcotic drug detection.**
Gandhi S, [Suman P](#), Kumar A, Sharma P, Capalash N, Suri CR *Bioimpacts* 2015; 5:207-213 [IF: 1]
- 5. Chrysin rich Scutellaria discolor Colebr. Induces cervical cancer cell death via the induction of cell cycle arrest and caspase dependent apoptosis**
Laishram S, Moriangthem DS, Borah JC, Pal BC, [Suman P](#), Gupta SK, Klaita MC, Talukdar NC. *Life Sciences* 2015; 143: 105-13. [IF: 2.7]
- 6. Alpha or beta human chorionic gonadotropin knockdown decrease BeWo cell fusion by down-regulating PKA and CREB activation.**
Malhotra SS, [Suman P](#), Gupta SK. *Scientific Reports* 2015; 5:11210. [IF: 5.5]
- 7. STAT3 and ERK1/2 cross-talk in leukaemia inhibitory factor mediated trophoblastic JEG-3 cell invasion and expression of mucin 1 and Fos**
[Suman P](#), Gupta SK. *Am J Reprod Immunol* 2014; 72(1):65-74 [IF: 3.1]
- 8. Prospects and advancement in c-reactive protein detection**
Chandra P, [Suman P](#), Airon H, Mukherjee M, Kumar P. *World J Methodol* 2014; 4(1): 1-5.
- 9. HER2 protein biomarker based sensor systems for the breast cancer diagnosis**
Chandra P, [Suman P](#), Mukherjee M, Kumar P. *J Mol Biomark Diagn* 2014; 5:e119.
- 10. LIF-STAT signaling in trophoblast biology**
[Suman P](#), Malhotra SS, Gupta SK. *JAK-STAT* 2013; 2 (4): e25155.
- 11. LIF increases the invasiveness of trophoblastic cells through integrated increase in the expression of adhesion molecules and pappalysin 1 with a concomitant decrease in the expression of TIMPs**
[Suman P](#), Shembekar N, Gupta SK. *Fertil Steril* 2013; 99(2):533-42 [IF: 4.43]
- 12. Comparative analysis of the invasion-associated genes expression pattern in first trimester trophoblastic (HTR-8/SVneo) and JEG-3 choriocarcinoma cells**

- [Suman P](#), Gupta SK. *Placenta* 2012; 33(10):874-877. [IF: 3.0]
13. **Regulators of early invasion of trophoblast cells**
[Suman P](#), Gupta SK. *In Immunology of Pregnancy*: 2012, Chaouat G, Sandra O, Ledee N (eds). Bentham e-book, Bentham Science Publisher, 2012, pp 222-239.
 14. **AP-1 transcription factors, mucin-type molecules and MMPs regulate the IL-11 mediated invasiveness of JEG-3 and HTR-8/SVneo trophoblastic cells**
[Suman P](#), Godbole G, Thakur R, Morales-Prieto DM, Modi DN, Markert UR, Gupta SK. *PLoS One* 2012; 7: e29745. [IF: 3.23]
 15. **Endometrial biology during trophoblast invasion**
Modi DN, Godbole G, [Suman P](#), Gupta SK. *Front Biosci* 2012; 4: 1151-1171. [IF: 3.52]
 16. **Role of IL-6 group of cytokines in trophoblast invasion and proliferation**
Gupta SK, [Suman P](#), Markert UR. *J Reprod Immunol* 2011; 90(2): 153-154 [IF: 3.2]
 17. **Cytokines regulating trophoblast invasion**
Fitzgerald JS, Abad C, Alvarez AM, Bhai Mehta R, Chaiwangyen W, Dubinsky V, Gueuvoghlanian B, Gutierrez G, Hofmann S, Hölters S, Joukadar J, Junovich G, Kuhn C, Morales Prieto DM, Nevers T, Ospina Prieto S, Pastuschek J, Pereira de Sousa FL, San Martin S, [Suman P](#), Weber M, Markert UR. *Adv Neuroimmune Biol* 2011; 2(1-2): 61-97.
 18. **Relevance of syndecan-1 in the trophoblastic BeWo cell syncytialization** Golla JP, [Suman P](#), Gupta SK. *Am J Reprod Immunol* 2011; 66(5):385-393. [IF: 2.9]
 19. **Contraceptive vaccines based on zona pellucida glycoproteins for wild dog population management**
Gupta SK, Srinivasan VA, [Suman P](#), Sriraman R, Nagendrakumar SB, Gupta N, Shrestha A, Joshi P, Panda AK. *Am J Reprod Immunol* 2011; 66(1): 51-62. [IF: 2.9]
 20. **Leukemia inhibitory factor mediated proliferation of HTR-8/SVneo trophoblastic cells is dependent on extracellular signal-regulated kinase1/2 activation**
Golla JP*, [Suman P](#)*, Morales DMM, Markert UR, Gupta SK. *Reprod Fert Dev* 2011; 23(5): 714-724. [IF: 2.13] *Equal contribution
 21. **Zona pellucida-based contraceptive vaccines for human and animal utility**
Gupta SK, Gupta N, [Suman P](#), Choudhury S, Prakash K, Gupta T, Sriraman R, Nagendrakumar SB, Srinivasan VA. *J Reprod Immunol* 2011; 88: 240-246. [IF: 3.2]
 22. **Decidualized endometrial stromal cell derived factors promote trophoblast invasion**
Godbole G, [Suman P](#), Gupta SK, Modi D. *Fertil Steril* 2011; 95(4):1278-1283. [IF: 4.43]
 23. **Regulation of proliferation and invasion of trophoblastic cells by IL-6 family of cytokines**
Gupta SK, [Suman P](#), Golla JP, Thakur R. *Am J Reprod Immunol* 2010; 64 (Suppl 1): 7 [IF: 2.9].

24. **Role of regulatory and angiogenic cytokines in invasion of trophoblastic cells**
Dubinsky V, Poehlmann TG, [Suman P](#), Gentile T, Markert UR, Gutierrez G. *Am J Reprod Immunol* 2010; 63(3):193-199. [IF: 2.9]
25. **Differential effects of IL-11 on invasion of JEG-3 and HTR-8/SVneo cell lines** [Suman P](#), Golla JP, Godbole G, Modi DN, Markert UR, Gupta SK. *Am J Reprod Immunol* 2010; 63(Suppl 1):16-17 [IF: 2.9].
26. **Interleukin-11 increases invasiveness of JEG-3 choriocarcinoma cells by modulating STAT3 expression**
[Suman P](#), Poehlmann TG, Prakash GJ, Markert UR, Gupta SK. *J Reprod Immunol* 2009; 82(1):1-11. [IF: 3.2]
27. **Immunogenicity of zona pellucida glycoprotein-3 and spermatozoa YLP(12) peptides presented on Johnson grass mosaic virus-like particles**
Choudhury S, Kakkar V, [Suman P](#), Chakrabarti K, Vrati S, Gupta SK. *Vaccine* 2009; 27(22):2948-2953. [IF: 3.4]
28. **Signal transducer and activator of transcription 3 (STAT3) and trophoblast invasion**
Fitzgerald JS, Poehlmann TG, [Suman P](#), Gupta SK and Schleussner E, Markert UR. *J Reproductionsmed Endocrinol* 2007 4: 322-330.

Presentations in conferences or meetings

1. **Invited Lecture: Suman P** (2014) Cytokine signaling in the regulation of trophoblast invasion and proliferation. International conference on Reproductive health: issues and strategies under changing climate scenario”, IVRI, Izzatnagar, India February 6-8, 2014
2. **Invited lecture: Suman P** (2013) Invasion of trophoblastic cells: regulation by STAT3 and ERK1/2 signaling pathways. **International Symposium on ”Frontiers in Cancer Research: Prevention to Therapeutics”**, Amity university Uttar Pradesh, NOIDA, India November 15-16, 2013
3. Mukherjee M, **Suman P**, Chandra P, Suhag D (2013) Synthesis and characterization of novel pH sensitive hydrogels for controlled delivery of anti-cancer agents

Award for the best poster in the **International Symposium on ”Frontiers in Cancer Research: Prevention to Therapeutics”**, Amity university Uttar Pradesh, NOIDA, India November 15-16, 2013
4. **Suman P**, Malhotra SS, Gupta SK (2013) Global gene expression profile in cytokine mediated trophoblast invasion. **Oral Presentaion in International Conference on Repromics-OMICS In Reproduction and Development**, Rajeev Gandhi Center for Biotechnology, Kerela. Feb 7-9, 2013
5. **Suman P**, Gupta SK. Molecular mechanisms for the regulation of trophoblastic cell invasion and proliferation by IL-6 family of cytokines. Poster presentation at the **International Conference on Reproductive Health with Emphasis on Strategies for Family Planning**, New Delhi. Feb 19-21, 2012

6. Gupta SK, **Suman P**, Markert UR. Role of IL-6 group of cytokines in trophoblast invasion and proliferation **J Reprod Immunol** 2011; 90(2): 153-154 [**IF: 2.97**]

Oral presentation in the 9th Congress of the European Society for Reproductive Immunology and European Society for Human Reproduction and Embryology Early Pregnancy Special Interest Group, Copenhagen, Denmark. Aug 23-26, 2011

7. **Suman P**, Golla JP, Godbole G, Modi DN, Markert UR, Gupta SK. Differential effects of IL-11 on invasion of JEG-3 and HTR-8/SVneo cell lines. **Am J Reprod Immunol** 2010; 63(Suppl 1):16-17 [**IF: 3.05**].

Poster presented in the 30th Annual meeting of the American Society of Reproductive Immunology, Farmington, PA, USA. May 17-20 2010

8. Gupta SK, **Suman P**, Golla JP, Thakur R. Regulation of proliferation and invasion of trophoblastic cells by IL-6 family of cytokines. **Am J Reprod Immunol** 2010; 64 (Suppl 1): 7 [**IF: 3.05**].

Oral presentation in the International Conference on Reproductive Immunology, Fudan University, Shanghai, China. Nov 28-Dec 2, 2010

9. **Suman P**, Godbole G, Thakur R, Modi DN, Markert UR, Gupta SK (2010) Role of IL-11 in regulation of invasion of JEG-3 and HTR-8/SVneo cells. **Poster presentation at the International Conference on Reproductive Health, Jaipur**. India Feb 8-10, 2010,

10. **Suman P**, Gupta SK (2009) IL-11 increases the invasion of JEG-3 cells through STAT3 activation. **Oral presentation (Awarded First Prize) at the International congress on the Bio-immunoregulatory Mechanisms Associated with Reproductive Organs: Relevance in Fertility and in Sexually Transmitted Infections**; New Delhi, India. Feb 9-13, 2009

11. **Suman P**, Poehlmann T, Markert UR, Gupta SK. IL-11 mediated invasion and gene expression in JEG-3 cells. **Poster presentation in the 3rd EMBIC (European Network of Excellence on Embryo Implantation Control) Summer School; Jena, Germany**. Sep 3-7, 2007

12. **5th European Congress on Reproductive Immunology**, August 30-September 1, 2007; Berlin, Germany

13. Faculty development program on “**Recent Advancements in nanofabrication and Healthcare**” on organized by the Amity academic staff college, Amity University Uttar Pradesh, Noida, INDIA; **2-3 July, 2013**

Professional membership and other experiences

- Life Member India Society for the Study of Reproduction of fertility (ISSRF)
- 2011-present Member, International Society for Immunology of Reproduction (ISIR)
- 2010-present Reviewed manuscripts submitted to several Journals