###### Clinical Assistant Professor

Dept. of Infectious Diseases and Immunology

UF College of Veterinary Medicine

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Google scholar data: Citations: 2078; h-index: 21; i10index: 29

**PROFESSIONAL QUALIFICATIONS**

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| **Training** | **Year** | **University/Institute**  |  **Research Focus** |
| Clinical Assistant Professor | 2014 - Present | CVM, University of Florida | Gut microbiology, Disease resistance mechanisms and Vaccine development |
| Research Assistant Professor | 2012 - 2014 | CVM, University of Florida | Gut microbiology and oral vaccine development |
| Postdoctoral Fellow  | 2005 -.2012 | Albany Medical College, Albany, NY, 12208 | Host-pathogen interactions (*B. burgdorferi*) |
| Doctorate (PhD) | 2001-2005 | Indian Veterinary Research Institute, Izatnagar, U.P., India | Application of RNAi in control of viral infections |
| Master of Veterinary Science (MVSc) | 1999-2001 | Indian Veterinary Research Institute, Izatnagar, U.P., India | Functional genomics of *Salmonella* Abortus *equi* using signature tagged mutagenesis |
| Bachelor of Veterinary Science and Animal Husbandry (BVSc& AH) | 1994-1999 | Bihar Veterinary College, Rajendra Agricultural University, Pusa, Bihar, India | Veterinary Sciences |

**AWARDS AND FELLOWSHIPS**

* Travel Award for attending a joint meeting of the Society for Leukocyte Biology and International Endotoxin and the Innate Immunity Society. Held at Marriot Riverside in San Antonio, TX on November 2006.
* ICAR-SRF/NET awarded by the Indian Council of Agricultural Research (ICAR), New Delhi.
* CSIR-SRF awarded with extramural funding for Ph.D. research by the Council for Scientific and Industrial Research (CSIR), New Delhi.
* IVRI-Senior Research Fellowship during PhD.
* IVRI-JRF during entire duration of M.V.Sc.
* CSIR-JRF/NET awarded by the Council for Scientific and Industrial Research (CSIR), New Delhi.
* Merit fellowship for academic excellence during entire duration of B.V.Sc & A.H.

**CURRENT RESEARCH FOCUSES**

The human gastrointestinal (GI) tract harbors a complex consortium of trillions of microbes, thousands of bacterial phylotypes, methanogenic archaea, and fungi colonizing the entire gut length, collectively referred to as the microbiota, produce 100-fold many gene products as the host. Although it is largely unexplored and underappreciated, the gut microbiota plays a critical role in health and disease states. My research focuses on identifying microbes and using them or their products to treat human ailments, including infectious origin.

**POSTDOCTORATE RESEARCH**

* **Mentor:** Dr. T. J. Sellati, Associate Professor, Center for Immunology and Microbial Disease, Albany Medical Center, Albany, New York, USA.
* **Summary of Research:** CD14 is a GPI-anchored protein that resides in lipid rafts–regions of the plasma membrane rich in cholesterol and sphingolipids–that serve as a platform for signaling initiation. We identified, CD14 regulates the recruitment of PI3K to lipid rafts, which in turn leads to p38-MAPK inhibition. p38-MAPK is a serine/threonine kinase that is conventionally thought of as pro-inflammatory. We challenged this paradigm by showing that the activation of p38 is required for the macrophage to turn off pro-inflammatory cytokine production and to be tolerized against the perpetual presence of inflammatory ligands.

**DOCTORATE RESEARCH**

* **Mentor:** Dr. R. K. Singh\*, Head of the Division of Virology, IVRI, Mukteswar Campus, Uttranchal, India
* **Title of PhD Thesis:** Evaluation of gene silencing by RNA interference in control of animal viral infections
* **Summary of Research:** With the help of bio-informatics, we identified target sequences against various RNA (PPRV, Bluetongue) and DNA viruses (Duck plague, goat pox, sheep pox, buffalo pox) to inhibit their replication in host cells using RNA interference. We also found shared target sequences between viruses of the same genus that could lead to the development of a common drug for various related viral diseases

**MASTER’S RESEARCH**

* **Supervisor:** Dr. R. K. Singh\*, Senior Scientist in the National Biotechnology Center, IVRI, Bareilly, UP, India
* **Title of M.V.Sc. Thesis:** Characterization of *Salmonella* Abortus *equi* mutants generated by signature tagged mutagenesis
* **Summary of Research:** To understand a new pathogen, a functional genomics approach is the preferred choice. Signature tagged mutagenesis is a technique that generates mutants with a signature inserted into their genome, which enables tracking in various *in vivo* and *in vitro* conditions. This technique not only helps in determining the function of a particular gene, but also aids in the development of various vaccine candidates. *Salmonella* Abortus *equi* is a recognized challenge to equine breeders and yet very little is known about this pathogen. By making 1500 mutants of *Salmonella* Abortus *equi* and screening these mutants *in vivo* we identified five essential genes for virulence, which can be further tested in vaccination trials.

 ***\*Present address: Ex. Director, Indian Veterinary Research Institute, Izatnagar, India***

**PROFESSIONAL MEMBERSHIPS**

* American Association for the Advancement of Science (AAAS)
* American Society for Microbiology (ASM)
* Society For Immunology and Immuno-pathology (SIIP)
* Indian Society for Veterinary Immunology and Biotechnology (ISVIB)

**CONTRIBUTION TO EDUCATION**

Teaching Responsibilities

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| --- | --- |
| 2009-2012  | Lecturer, IMD 609 Microbial Disease (Bacterial Toxins, Toxicogenic bacteria, Bacillus, Clostridium, Neisseria, Helicobacter) |
| 2013 | Lecturer, VME 6934 (B cell responses at Mucosal Surfaces) |
| 2017-2018 | Lecturer, VME 5131(Recent advances in Veterinary Molecular Diagnostics) |
| 2020 | Course coordinator, VME 6934/4906, Human and animal vaccines for prevention and cure. |
| 2021 | Lecturer, VME 5141(Veterinary Microbiology), VME 5110B (Veterinary Hematology and Immunology) |

**Training**

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| **Trainee** | **Designation** | **Duration** |
| Dr. Sasmita Nayak | Technician/graduate student | Jan 06 - Jun 06 |
| Nana Wilmot | Prep Student | Feb 06 - Aug 07 |
| Nicole Whatley | Prep Student | Jan 07 - Aug 07 |
| Kerron Gilford | Prep Student | Aug 07- Jan 08 |
| Dr. M. Naveed Akhtar | Technician | Feb 09 - Apr 09 |
| **\***Dr. Arumugam Gnanamani | Visiting Scientist from CLRI, India | Feb 09 - Jul 09 |
| Dr. Dyneshwar Bawankule | Visiting Scientist from CIMAP, India | Jun 10 - Mar 11 |
| ‡Kathleen Bashant | High School Student Intern | Jan 10 – Mar 12 |
| Charles Yueh | RPI Pre-medical Student Intern | Jun 11 – Dec 11 |
| $Ashley Mila | Undergraduate Student at UF | Mar 12 – Oct 15 |
| Dr. Kristina Bowels | Veterinary Oncology Resident | June 15 – May 16 |
| Dr. Shanan Hutchinson | Veterinary Oncology Resident | Dec 15 – Oct 17 |
| Dr. Mathew Cascio | Medical Oncology Resident | Dec 15- Present |
| Dr. Alexis M. Livaccari | Veterinary Oncology Resident | Dec 15 – Oct 17 |
| Dr. Masrror Qadri | Volunteer | June 16 – Dec 16 |
| Lindsey Powers | Volunteer | April 16 – Mar 19 |
| Dr. Meerambika Mishra | Post-doctoral scientist | Aug 18 – Apr 20 |
| Ananta Arukha | Assistant Research Scientist | Jul 20 - Present |

\* Her work contributed to a manuscript (Bibliography Reference # 35)

‡ Her presentation of our research at a regional competition led to a college scholarship and she is a co-author in a communicated manuscript.

$ Her work contributed to a manuscript (Bibliography Reference # 18)

**Member of students’/trainees’ committee**

Dr. Mathew Cascio Medical Oncology Resident

Dr. Shana Hutchinson Veterinary Oncology Resident

Dr. Alexis M. Livaccari Veterinary Oncology Resident

Dr. Kristen Jackson Veterinary Oncology Resident

Dr. Jordan C. Ayers Veterinary Oncology Resident

Dr. Lydia Sixta Veterinary Oncology Resident

**Reviewed manuscripts for following journals:**

1. Veterinary Immunology and Immunolopathology
2. Genes
3. Viral genes
4. Inflammatory Bowel Disease
5. Environmental Sciences
6. Journal of Bioterrorism and Biodefense
7. Journal of Functional Foods
8. Nutrients
9. PLoS One
10. Journal of Leukocyte Biology
11. Scientific Reports
12. International Journal of Molecular Sciences

**Serve as Associate Editor:**

1. MOJ Autoimmune Diseases
2. Frontiers in Cellular and Infection Microbiology

**Faculty search committee**

Medical Oncologist search committee

Faculty Search Committee

**Current Funding**

**R44DK117726** (NIH; NIDDK) **Sahay (PI) 05/20/20 to 03/31/22 $** **261,575**

*A Novel Immunological Probiotic for treating Inflammatory Bowel Disease*: This is a Phase I Small Business Initiative Research (SBIR), which is testing the delivery of a biomolecule SlpA for the treatment of colitis.

**Previous Funding**

**R43 AI142975-01A1#** (NIH; NIDDK) **Sahay (PI) 04/01/19 to 07/31/21 $134,531**

*A Novel Probiotic Engineered for Enhanced Immunological Function for Treating Inflammatory Bowel Disease*: This is a Phase I Small Business Initiative Research (SBIR) to test the ability of recombinant *Lactobacillus acidophilus* for the treatment of infectious colitis.

**R43DK117726** (NIH; NIDDK) **Sahay (PI) 07/01/18 to 06/30/19 $107,868**

*A Novel Immunological Probiotic for treating Inflammatory Bowel Disease*: This is a Phase I Small Business Initiative Research (SBIR), which is testing the delivery of a biomolecule SlpA for the treatment of colitis.

**Inovio Pharmaceuticals Sahay (PI) 11/20/18 – 11/20/19 $35,465**

*Development of DNA vaccine against Lyme Disease*: The project evaluates a DNA vaccine expressing Outer Surface Protein A (OspA) using a proprietary *in vivo* DNA electroporation system.

**Merck/Intervet Vaccine Trial Yamamoto (PI) 02/28/2018- 02/28/2019 $260,410**

*Intervet Animal Clinical Vaccine Trial*: We are evaluating a viral vectored vaccine expressing Feline Immunodeficiency virus antigens. The trial will evaluate the efficacy and immune protection of felines post FIV challenge. Sahay (CoI, $ 22,000)

**Sarcoma Foundation of America Cascio (PI) 06/01/17-11/1/18 $50,000**

*CAR T cells for Sarcoma*: We are designing and developing a Chimeric Antigen Receptor T cells against Osteosarcoma using GD2 and GD3 as target antigens.

**CVM-IDP2016 Sahay (PI) 11/7/16-11/6/17 $10,000**

*Regulation of Lyme-associated inflammation by a probiotic bacterium*

**CVM-IDP2015 Sahay (PI) 11/1/16-11/1/17 $10,000**

*Development of oral immune contraceptives for canine and felines*

**CVM-IDP2014 Sahay (PI) 1/1/15 - 11/1/16 $10,000**

*Cyclic-AMP regulation of Lyme disease*

**1 S10 OD021676-01 Pascual (PI) 01/16 $329,606**

*Sony Cell Sorter SH800 System*: It was a shared equipment grant to acquire Sony cell sorter for the investigators at the College of Veterinary Medicine.

**CVM-IDP2012 Sahay (PI) 11/15/12 - 11/14/13 $10,000**

*DC-targeted vaccine against Lyme arthritis*

**EPI-12-1 Sahay (PI) 07/15/12 - 07/14/13 $100,000**

Novel Oral Vaccine for Influenza A Virus

**PATENTS**

1. **Sahay, B**., Fanger, G., Jha, J., Freguia, CF. Surface layer protein A (SlpA) as a therapeutic agent for the treatment of Inflammatory diseases. Provisional Patent Application Docket No. UF.1357P
2. Milner, M., **Sahay, B.,** Salute, M., Cascio, M., Sayour, E., Lagmay, J. GD3-based nanoparticle vaccine against cancer. We are processing the patent application with the help of the office of technology licensing at UF. A company has already showed interest in collaboration. *Application has also been filed in Japan, European Union and USA.*
3. Lightfoot, Y., **Sahay, B**., and Mohamadzadeh, M*. Lactobacillus acidophilus* surface layer protein A (SlpA) as a therapeutic agent for the treatment of inflammatory bowel diseases. Web Publication # WO2016064643A1
4. **Sahay, B.,** and Mohamadzadeh *Propionibacterium freudenreichii* as a probiotic for infants. US Patent # US20180199611A1
5. Mohamadzadeh, M., **Sahay, B**., Salek-Ardekani, and Tahiliani, V. Lipoteichoic acid from *Lactobacilli* as a potent immune stimulatory adjuvant for vaccine development. Publication # US20170035880A1
6. **Sahay,B.,** and Mohamadzadeh, M. A vaccine against *Botulinum* toxin and a vaccination regimen. U.S. Provisional Patent Application Docket No. UF.1238P

**Published peer-reviewed manuscripts**

1. Arukha, AP., Freguia, CF., Mishra, M., Jha, J., Kariyawasam, S., Fanger, N., Zimmermann, E., Fanger, G., **Sahay, B**. *Lactococcus lactis* delivery of Surface layer protein A protects mice from colitis by re-setting host immune repertoire. Biomedicines 2021 In Press [Impact factor 6.081]
2. Yusufu I, Ding K, Smith K, Wankhade UD, **Sahay B**, Patterson GT, Pacholczyk R, Adusumilli S, Hamrick MW, Hill WD, Isales CM, Fulzele S. A Tryptophan-Deficient Diet Induces Gut Microbiota Dysbiosis and Increases Systemic Inflammation in Aged Mice. **Int J Mol Sc**. 2021 May 8;22(9):5005 doi: 10.3390/ijms22095005. PMID: **34066870; [Impact factor 5.923]**
3. Ayers J, Milner RJ, Cortés-Hinojosa G, Riva A, Bechtel S, **Sahay B**, Cascio M, Lejeune A, Shiomitsu K, Souza C, Hernandez O, Salute M. Novel application of single-cell next-generation sequencing for determination of intratumoral heterogeneity of canine osteosarcoma cell lines. **J Vet Diagn Invest**. 2021 Jan 15:1040638720985242. doi: 10.1177/1040638720985242. Epub ahead of print. PMID:33446089. [Impact factor 1.522]
4. Cascio MJ, Whitley EM, **Sahay B,** Cortes-Hinojosa G, Chang LJ, Cowart J, Salute M, Sayour E, Dark M, Sandoval Z, Mitchell DA, Milner RJ. Canine osteosarcoma checkpoint expression correlates with metastasis and T-cell infiltrate. **Vet Immunol Immunopathol**. 2021 Feb;232:110169. doi: 10.1016/j.vetimm.2020.110169. Epub 2020 Dec 15. PMID: 33387703. [Impact factor 2.046]
5. Jackson K, Milner RJ, Doty A, Hutchison S, Cortes-Hinojosa G, Riva A, **Sahay B**, Lejeune A, Bechtel S. Analysis of canine myeloid-derived suppressor cells (MDSCs) utilizing fluorescence-activated cell sorting, RNA protection mediums to yield quality RNA for single-cell RNA sequencing. **Vet Immunol Immunopathol**. 2021 Jan;231:110144. doi: 10.1016/j.vetimm.2020.110144. Epub 2020 Nov 7. PMID: 33278779. [Impact factor 2.046]
6. **Sahay B**, Mergia A. The Potential Contribution of Caveolin 1 to HIV Latent Infection. **Pathogens**. 2020 Oct 27;9(11):896. doi: 10.3390/pathogens9110896.PMID: 33121153; PMCID: PMC7692328. [Impact factor 3.492]
7. Guibinga GH, **Sahay B**, Brown H, Cooch N, Chen J, Yan J, Reed C, Mishra M, Yung B, Pugh H, Schultheis K, Esquivel RN, Weiner DB, Humeau LH, Broderick KE, Smith TRF. Protection against *Borreliella burgdorferi* infection mediated by a synthetically engineered DNA vaccine. **Hum Vaccin Immunother**. 2020 Sep 1;16(9):2114-2122. doi: 10.1080/21645515.2020.1789408. Epub 2020 Aug 12. PMID: 32783701; PMCID: PMC7553707.[Impact factor 2.619]
8. Fulzele S, **Sahay B**, Yusufu I, Lee TJ, Sharma A, Kolhe R, Isales CM. COVID-19 Virulence in Aged Patients Might Be Impacted by the Host Cellular MicroRNAs Abundance/Profile. **Aging Dis**. 2020 May 9;11(3):509-522. doi:10.14336/AD.2020.0428. PMID: 32489698; PMCID: PMC7220294. [Impact factor 6.745]
9. Mishra, M., Powers L., Vanhorn, CL, **Sahay, B**. 2020 HDAC6 inhibition aggravates the Lyme disease associated inflammation. **EC Microbiology** Vol 16, Issue 11 (not yet list in NCBI; It will show up soon)
10. Hutchison S, **Sahay B**, de Mello SC, Sayour EJ, Lejeune A, Szivek A, Livaccari AM, Fox-Alvarez S, Salute M, Powers L, Milner RJ. Characterization of myeloid-derived suppressor cells and cytokines GM-CSF, IL-10 and MCP-1 in dogs with malignant melanoma receiving a GD3-based immunotherapy. Vet Immunol Immunopathol. 2019 Oct;216:109912. doi: 10.1016/j.vetimm.2019.109912. Epub 2019 Jul 31. PubMed [PMID: 31446208], [Impact Factor 1.846]
11. **Sahay** B, Aranyos AM, Mishra M, McAvoy AC, Martin MM, Pu R, Shiomitsu S,Shiomitsu K, Dark MJ, Sanou MP, Roff SR, Rathore MH, Yamamoto JK. Immunogenicity and Efficacy of a Novel Multi-Antigenic Peptide Vaccine Based on Cross-Reactivity between Feline and Human Immunodeficiency Viruses. **Viruses.** 2019 Feb 3;11(2).pii: E136. doi: 10.3390/v11020136. [PMID: 30717485], [Impact Factor 3.761**]**
12. Sayour EJ, Grippin A, De Leon G, Stover B, Rahman M, Karachi A, Wummer B, Moore G, Castillo-Caro P, Fredenburg K, Sarkisian MR, Huang J, Deleyrolle LP, **Sahay B**, Carrera-Justiz S, Mendez-Gomez HR, Mitchell DA. 2018 Personalized Tumor RNA Loaded Lipid-Nanoparticles Prime the Systemic and Intratumoral Milieu for Response to Cancer Immunotherapy. **Nano Lett**. 2018 Oct 10;18(10):6195-6206. [PMID: 30259750], [Impact factor: 12.08]
13. **Sahay, B.,** Yamamoto, J.K. 2018 Lessons Learned in Developing a Commercial FIV Vaccine: The Immunity Required for an Effective HIV-1 Vaccine**. Viruses** May 22;10(5). pii: E277. doi: 10.3390/v10050277. [PMID: 29956186], [Impact factor: 3.761]
14. **Sahay, B**\*., Bashant, K., Nelson, N.J., Patsey, R.L., Gadila, S.K., Boohaker, R., Verma, A., Strle, K., Sellati, T.J. 2018 Induction of IL-10 by *Borrelia burgdorferi* is regulated by the action of CD14-dependent p38-MAPK and cAMP-mediated chromatin remodeling. **Infection and Immunity Jan8** doi: 10.1128/IAI.00781-17**. \* Corresponding Author** [PMID: 29311239], [Impact factor: 3.731]
15. **Sahay**, **B**., Colliou N., M. Zadeh, J.L. Owen, M. Valletti, C. Jobin, M. Mohamadzadeh. 2017 Dual route vaccine protects efficiently against botulinum neurotoxin complex. **Vaccine** Nov 24. pii: S0264-410X(17)31550-5. doi: 10.1016/j.vaccine.2017.11.008[PMID: 29180028], [Impact factor: 3.235]
16. **Sahay, B.,** C.Q. Nguyen, J.K. Yamamoto 2017. Conserved HIV epitopes for an effective HIV vaccine. **Journal of Clinical and Cellular Immunology** 4:4 [PMID: 29226015]
17. Colliou N., Y. Ge, **B. Sahay**, M. Gong, M. Zadeh, J.L. Owen, J. Neu, W.G. Farmerie, F. AlonzoIII, K., Liu, D.P. Jones, S. Li, M. Mohamadzadeh 2017. Commensal Propionibacterium strain UF1 mitigates intestinal inflammation via Th17 cell regulation. **The Journal of Clinical Investigation** 127(11):3970-3986. [PMID: 28945202] [Impact factor: 13.251]
18. J. L. Owen, S. X. Cheng, Y. Ge, **Sahay, B.**, M. Mohamadzadeh 2016. The role of the calcium-sensing receptor in gastrointestinal inflammation. **Seminars in cell & developmental biology** 49: 44-51, [PMID: 26709005], [Impact factor: 6.138]
19. **Sahay, B**., Y. Ge, N. Colliou, M. Zadeh, C. Weiner, A. Mila, J. L. Owen, M. Mohamadzadeh 2015. Advancing the use of *Lactobacillus acidophilus* surface layer protein A for the treatment of intestinal disorders in humans. **Gut Microbes** 6:392-7, [PMID: 26647142], [Impact factor: 4.16]
20. Colliou N., **Sahay, B**. M. Zadeh, J.L. Owen, M. Mohamadzadeh, 2015. Impact of gastrointestinal *Bacillis anthracis* infection on hepatic B cells. **Toxins** 7:3805-3817, [PMID: 26402706], [Impact factor: 3.273]
21. Yang T, M.M. Santisteban, V. Rodriguez, E. Li, N. Ahmari, J.M. Carvajal, M. Zadeh, M. Gong, Y. Qi, J. Zubcevic, **Sahay, B**, C.J. Pepine, M.K. Raizada, M. Mohamadzadeh 2015. Gut dysbiosis is linked to hypertension. **Hypertension** 65(6):1331-40, [PMID:25870193], [Impact factor: 6.857]
22. Lightfoot, Y.L., K., Selle,T. Yang, Y.J. Goh, **B. Sahay**, M. Zadeh, J.L. Owen, N. Colliou, E. Li, T. Johannssen, B. Lepenies, T. R. Klaenhammer, M. Mohamadzadeh 2015. SIGNR3-dependent immune regulation by Lactobacillus acidophilus surface layer protein A in colitis. **EMBO J.** 34(7):881-95, [PMID:25666591], [Impact factor: 9.792]
23. **Sahay, B**., J.L. Owen, M. Zadeh, T. Yang, Y. L. Lightfoot, F. Abed, M. Mohamadzadeh 2014. Impaired colonic B-cell responses by gastrointestinal *Bacillus anthracis* infection. **Journal of Infectious Diseases** pii: jiu280, [PMID: 24829464], [Impact factor: 5.186]
24. Sam X. Cheng, Y. L. Lightfoot, T. Yang, M. Zadeh, L.Tang, **Sahay, B.**, G. P. Wang, J. L. Owen, M. Mohamadzadeh 2014. Epithelial CaSR Deficiency Alters Intestinal Integrity and Immune Responses. **FEBS letters** pii: S0014-5793(14)00368-8. doi: 10.1016/j.febslet.2014.05.007. [PMID: 24842610], [ Impact factor: 2.999]
25. Y. L. Lightfoot, T. Yang, **Sahay, B.,** M. Zadeh, Sam X. Cheng, Gary P. Wang, J.L. Owen, M. Mohamadzadeh 2014. Rigid Immune Suppression, Intestinal Barrier Dysfunction, and Dysbiosis by Gastrointestinal *Bacillus* *anthracis* Infection. **PLos One** 19;9(6):e100532. [PMID: 24945934], [Impact factor: 2.766]
26. **Sahay, B**. J.L. Owen, T. Yang, M. Zadeh, Y. L. Lightfoot, J.W. Ge, M. Mohamadzadeh 2014. Activation of B cells by a dendritic cell targeted vaccine. **Current Pharmaceutical Biotechnology** Nov; 14(10): 867-77. [PMID: 24372255], [Impact factor: 2.14]
27. Owen, J.L., **Sahay, B.**, M. Mohamadzadeh. 2013. New generation of oral mucosal vaccines targeting dendritic cells. 2013 **Current Opinion In Chemical Biology** Jul 5. pii: S1367-5931(13)00115-4. doi: 10.1016/j.cbpa.2013.06.013. [PMID: 23835515], [Impact factor: 7.52]
28. **Sahay, B**., M. Kathania, J.L. Owen, M. Mohamadzadeh 2013. Directional activation of intestinal dendritic cells by oral targeted multivalent vaccine strategy. **Journal of Vaccine and Vaccinology** 4: 5-6 [Impact factor: 1.48]
29. Kathania, M., M. Zadeh, Y. L. Lighfoot, R. Roman, **Sahay, B.**, J. Abbot, M. Mohamadzadeh 2013. Colonic immune stimulation by targeted oral vaccine. **PLoS One** 8(1):e55143. PMID: 23383086
30. Lightfoot, Y., T.Yang, **Sahay, B.**, M. Mohamadzadeh 2012. Targeting aberrant colon cancer-specific DNA methylation with lipoteichoic acid-deficient *Lactobacillus acidophilus.* **Gut Microbes** 4(1):84-8. [PMID: 23137966], [Impact factor: 4.16]
31. Sellati, T.J., **Sahay, B.,** G. P. Wormser, 2012. The Toll of TLR1 Polymorphism in Lyme Disease: A Tale of Mice and Men, **Arthritis and rheumatism** 64(5):1311. [PMID: 22246662], [Impact factor: 6.918]
32. Shi, C., **B. Sahay,** J. Q. Russell, K. A. Fortner, N. Hardin, T. J. Sellati and R. Budd. 2011. Reduced immune response to *Borrelia burgdorferi* in the absence of gamma delta T cells. **Infection and Immunity** 79(10):3940-6. [PMID: 21768278], [Impact factor: 3.731]
33. Periasamy, S., A. Singh, **Sahay, B.**, T. Rahman, G. H. Pham, E. J. Gosselin, P. J. Feustel and T. J. Sellati. 2011. Development of tolerogenic dendritic cells and regulatory T cells favors exponential bacterial growth and survival during early respiratory tularemia. **Journal of Leukocyte Biology** 90(3):493-507. [PMID: 21724804], [Impact factor: 4.289]
34. Zarrella, T. M., A. Singh, C. Bitsaktsis, T. Rahman, **Sahay, B.**, P. J. Feustel, E. J. Gosselin, T. J. Sellati, K. R.O Hazlett. 2011. Host adaptation of *Francisella tularensis* induces multiple changes to the bacterium’s surface-carbohydrates that hinder effectors of innate and adaptive immunity. **PLoS ONE** 6(7): e22335. doi:10.1371/journal.pone.0022335. [PMID: 21799828], [Impact factor: 2.766]
35. Cervantes, J.L., S. Dunham-Ems, C. La Vake, M. M. Petzke, **Sahay, B.**, T. J. Sellati, J. D. Radolf, and J. C. Salazar. 2011. Phagosomal signaling by *Borrelia burgdorferi* in human monocytes involves TLR2-TLR8 cooperativity and TLR8 mediated transcription of IFN-β. **Proceedings of National Academy of Science**108: 3683-8*.* [PMID: 21321205], [Impact factor: 9.661]
36. **Sahay B**., A. Singh, A. Gnanamani, R. L. Patsey, J. E. Blalock, and T. J. Sellati. 2010. CD14 Signaling Reciprocally Controls Collagen Deposition and Turnover to Regulate the Development of Lyme Arthritis.**American Journal of Pathology**. 178: 724-34. [PMID: 21281805], [Impact factor: 4.583]
37. **Sahay B**., R. L. Patsey, C. H. Eggers, J.A. Salazar, J. D. Radolf, and T. J. Sellati. 2009. CD14 signaling restrains chronic inflammation through induction of p38-MAPK/SOCS-dependent tolerance. **PLoS Pathogens**. December 5 (12): e1000687. [PMID: 20011115], [Impact factor: 10.44]
38. Sarkar, J., V. Balamurugan, A. Sen, P. Saravanan, **Sahay, B.**, K.K. Rajak, T.J. Rasool, V. Bhanuprakash, R.K. Singh. 2009. Sequence analysis of morbillivirus CD150 receptor-signaling lymphocyte activation molecule (SLAM) of different animal species. **Virus Genes** 39: 335-41. [PMID: 19669672], [Impact factor: 1.96]
39. Balamurugan, V., R. P. Singh, P. Saravanan, A. Sen, J. Sarkar, **Sahay, B.**, T. J. Rasool, and R. K. Singh. 2007. Development of an indirect ELISA for the detection of antibodies against Peste-des-petits-ruminants virus in small ruminants. **Veterinary Research Communications***.* 31: 355-64, [Impact Factor: 0.96]
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**Book Chapter**

1. **Sahay, B**., Sellati, TJS 2012 Cells of innate immunity: mechanisms of activation, Pathobiology of Human Disease: A Dynamic Encyclopedia of Disease Mechanisms. Publisher **Elsevier Publications**, NY
2. **Sahay, B**., Aranyos, A.M., McAvoy, A., and Yamamoto, J K. 2018. Utilization of Feline ELISpot to Evaluate the Immunogenicity of a T cell-Based FIV MAP Vaccine Publisher **Bio-Techne.** In Handbook of ELISpot: Methods and Protocols. 3rd Ed. (Editor: A.E. Kalyuzhny) Humana Press, Chapt. 18, pp 197-219. Also In: Methods in Molecular Biology. (Ed. JH Walker).

**Invited presentations**

1. Bikash Sahay, “Harnessing the gut microbiota for therapeutics” organized by Government of India as Global Summit of Overseas and resident Indian scientist and academicians in session titled Immunobiological agents for animal disease management held on Oct 21st 2020
2. **Sahay, B.,** A. Singh, A. Gnanamani, R. L. Patsey and T. J. Sellati. 2009. CD14 signaling reciprocally controls collagen deposition and turnover to regulate the development of Lyme Arthritis. Invited presentation at 12th Annual Upstate New York Immunology Conference. Held at The Sagamore, Bolton Landing, NY, on Oct 25-27.
3. **Sahay, B.,** R. L. Patsey and T. J. Sellati. 2011. cAMP-dependent IL-10 production determines the severity of Lyme disease. Invited presentation at 14th Annual Upstate New York immunology Conference. Held at The Sagamore, Bolton Landing, on Oct 24-26
4. **Sahay, B.** cAMP-mediated epigenetic control of Lyme Disease pathogenesis.Presented at the department of Physiological Sciences, UF College of Veterinary Medicine, Gainesville FL 32608 Nov 29 2016