Biographical Sketch

Provide the following information for the key personnel in the order listed for Form Page 2.
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NAME	POSITION TITLE
Sangeeta Khare	Associate Research Scientist, Veterinary Pathobiology, College of Veterinary Medicine, Texas A&M University

EDUCATIOM/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)

INTITUTION AND LOCATION	DEGREE	YEAR(s)	FIELD OF STUDY
Kanpur University, India	B.S.	1986	Biology & Chemistry
Kanpur University, India	M.S.	1989	Life Sciences
All India Institute of Medical Science, New Delhi, India	Ph.D.	1996	Immunology & Biochemistry

NOTE: The Biographical Sketch may not exceed four pages. Items A and B may not exceed two of the four-page limit.

A. Positions and Honors. List in chronological order previous positions, concluding with your present position. List any honors. Include present membership on any Federal Government public advisory committee.

ACADEMIC APPOINTMENTS:

2003-present	Associate Research Scientist, Department of Pathobiology, Texas A&M University, College Station, TX
1999-2003	Assistant Research Scientist, Department of Pathobiology, Texas A&M University, College Station, TX
1998-1999	Postdoctoral Research Associate, Department of Pathobiology, Texas A&M University, College Station, TX
1996-1997	Postdoctoral Fellow, Department of Microbiology, University of Saskatchewan, Saskatoon, Canada
1995-1996	Research Associate, Department of Biochemistry, All India Institute of Medical Sciences, New Delhi, India

HONORS AND AWARDS:

Travel Award from "James W McLaughlin Fund" to attend UK-TX-collaborative Research Initiative in the area of Emerging and Reemerging Diseases", February 2005.

Certificate of Achievement from National Veterinary Science Laboratory, USDA, Iowa for 2001 **Johne's Disease Laboratory approval.**

Prof. K.P. Sinha – Prof. P.S. Krishnan Award for the research published in Indian Journal of Clinical Biochemistry, 1998.

Research Associate awarded by College of Medicine, University of Saskatchewan, Saskatoon, Canada, 1997-1999.

Nominated for **P.S. Murthy Award** for best paper presentation in the Association of Biochemists of India, 1995.

Dwarka Prasad Award 1995 from All India Institute of Medical Sciences, New Delhi, to attend and present paper in the Association of Clinical Biochemists of India at Bangalore, India, 1995.

Research Associate awarded by Council of Scientific and Industrial Research, New Delhi, India, 1995-1996.

Research Fellow awarded by Department of Atomic Energy, India, 1995.

Senior Research Fellowship awarded by Council of Scientific and Industrial Research, New Delhi, India, 1991-1995.

Council of Scientific and Industrial Research **International Travel Grant** to attend and present research paper in14thInternational Congress of Leprosy held at Orlando, Florida, 1993.

Best paper presentation Award from Association of Clinical Biochemists of India, 1992.

Junior Best Paper presentation award in XVI Annual Conference of Indian Association of Medical Microbiologists. New Delhi; 1991.

Junior Research Fellowship awarded by Council of Scientific and Industrial Research, New Delhi, India, 1989-1991.

Qualified **Graduate Aptitude Test of Engineering** 1990 Conducted by Indian Institute of Technology. India.

Master of Life Sciences with **Honors**, 1989.

ASSOCIATION IN SCIENTIFIC SOCIETIES:

American Society of Microbiology

Conference of Research Workers in Animal Diseases

B. Selected (>180) peer-reviewed publications (in reverse chronological order). Do not include publications submitted or in preparation.

Raffatellu, M., Wilson, P.R., Chessa, D., Andrews-Polymenis, H, Lawhon, S., **Khare, S.**, Adams, L.G. and Baumler, A.J. SipA, SopA, SopB and SopE2 Contribute to *Salmonella enteritica serotype typhimurium* invasion of Epithelial Cells. 2005. Infection and Immunity. 73: 146-154.

O'Shea, B., **Khare, S**., Bliss, K., Klein, P., Ficht, T. A., Adams, L. G., Rice-Ficht, A. C. Genotyping and Characterization of *Mycobacterium avium subsp. paratuberculosis* Using Amplified Fragment Length Polymorphism. 2004. Journal of Clinical Microbiology. 42:3600-3606.

Khare, S., Ficht, T.A., Santos R.L., Romano, J., Ficht, A.R., Zhang, S., Grant I.R., Libal, M., Hunter, D., Adams, L.G. Rapid and sensitive detection of *Mycobacterium avium subsp. paratuberculosis* in bovine milk and feces an immunomagnetic bead beat-conventional and real time PCR. 2004. Journal of Clinical Microbiology. 42:1075-1081.

Zhang, S., Nunes, J. E. S., Adams, L. G., **Khare, S**., Tsolis R. M., Baulmer, A.J. Secreted effector proteins of *Salmonella enterica serotype typhimurium* elicit host specific chemokine profiles in animal models of typhoid fever and enterocolitis. 2003. Infection and Immunity. 71:4795-4803.

Khare, S., Banai, Y., Gokulan, K., Linthicum, D. S., Modiano, J.F., Early changes in metabolism of leukemic cell lines upon induction of apoptosis by cytotoxic drugs. 2003. European Journal of Pharmacology. 465:23-30

Humphries, A.D., Raffatellu, M., Winter, S., Weening, E.H., Kingsley, R.A., Droleskey, R., Zhang, S., Figueiredo, J., **Khare, S.**, Nunes, J. E. S., Adams, L.G., Tsolis, R.M., Baumler, A.J. The use of flow cytometry to detect expression of subunits encoded by 11 *Salmonella enterica serotype typhimurium* fimbrial operons. 2003. Molecular Microbiology. 48:1357-76.

Khare, S., Gokulan, K., Linthicum, D.S. Cellular responses of NG108-15 and SK-N-MC lines to sweet and bitter tastants as measured by extracellular acidification rates. 2001. Journal of Neuroscience Research. 63:64-71.

Zhang, A.J., **Khare, S**., Gokulan, K., Linthicum, D.S., Burgess, K. Dimeric beta-turn peptidomimetics as ligands for the neurotrophin receptor TrkC. 2001; Bioorganic and Medicinal Chemistry Letters. 11:207-210.

Khare, S., Gokulan, K., Linthicum, D.S. Vasoactive amine responses in murine cerebrovascular endothielial cells as measured by extracellular acidification rates. 2000. Journal of Neuroscience Research. 60:356-361.

Gokulan, K., **Khare, S**., Rao, D.N. Increase in the immunogenicity of HIV peptide antigens by chemical linkage to polytuftsin (TKPR) 40. 1999. DNA and Cell Biology. 18:623-630.

Gokulan, K., **Khare, S**., Rao, D.N. Construction of chimeric immunogens: Bioactive fragment of human IL-1b or polytuftsin (PT) capable of eliciting immune responses to HIV peptides. 1998. Indian Journal of Clinical Biochemistry. 13:116-123.

Khare, S., Bhutani, L.K., Rao, D.N. Quantitative assessment of tuftsin receptor expression and second messenger during in vitro differentiation of peripheral blood derived monocytes of leprosy patients. 1997. Molecular and Cellular Biochemistry. 171:1-10.

Khare, S., Bhutani, L.K., Rao, D.N. Release of reactive nitrogen intermediates from the peripheral blood derived monocytes/macropahges of leprosy patients stimulated in vitro by tuftsin. 1997. Leprosy Review. 68:16-24.

Khare, S., Bhutani, L.K., Rao, D.N. Reactive oxygen intermediates during macrophage activation with tuftsin derived from peripheral blood of leprosy patients. 1993. Leprosy Review. 64:208-218.

Khare, S. Bhutani, L.K., Rao, D.N. Modulation of monocytes/macrophages of leprosy patients by tuftsin for biochemical and immunogenic functions. 1993. International Journal of Leprosy. 68:16-24.

Khare, S., Iyer, R.R., Rao, D.N. Modulation of peripheral blood derived monocytes-macrophages of leprosy patients for immunogenic functions in vitro by tuftsin. 1993. Indian Journal of Medical Microbiology. 10:164-175. (This paper was selected the best paper published during the year 1993 in the above journal).

CHAPTERS IN BOOK:

Ficht, T.A., Adams, L.G., **Khare, S.,** O'Shea, B. and Rice-Ficht, A.C. Global analysis of the *Mycobacterium avium subsp. paratuberculosis* gemone and model systems exploring host-agent interaction. In "Pre-harvest and post-harvest food safety: Contemporary issues and future directions" Blackwell publishing, Ames, IA, 2004.

Kaur, J, **Khare, S**., Bhutani, L.K., Rao, D.N. Enzyme Immunoassay of phagocytosis stimulating tetra peptide-tuftsin in normal and leprosy sera. In Immunology Perspectives in Reproduction and Infection. (Editor Gupta, S.K.), Oxford & IBH Publishing Co. Pvt. Ltd. 1991, p327-335.

ABSTRACTS:

Khare S., Nunes J. E. S, Figueiredo J. F., Lawhon S, Ficht T. A., Rice-Ficht A. C., Adams L. G. Early Host Responses to Mycobacterium Avium Subsp. Paratuberculosis. Analyzed by The Bovine Ileal Loop Model. Fifth McLaughlin Symposia in Infection & Immunity, Galveston, 2005.

Figueiredo J., Lawhon S., Rafeeatellu M., **Khare S**., Adams L. G. Salmonella typhimurium activates CXC chemokines in a TLR-5 independent pathway. Submitted for presentation in 105 American Society of Microbiology General Meeting; 2005.

Khare, S., Figueiredo, J.F., Lawhon, S.D., Rossetti, C., Nunes, J.E.S., Gull, T., Ficht, T. A., Rice-Ficht, A. C. and Adams, L.G. Gene Expression Analysis of *Mycobacterium avium* subspecies *paratuberculosis* Infected Peyer's Patches in Ligated Bovine Ileal Loops. 104 American Society of Microbiology General Meeting; 2004.

Lawhon, S.D., **Khare, S.**, Figueiredo, J.F., Rossetti, C., Nunes, J.E.S., Gull, T., Baumler, A.J. and Adams, L.G. Induction of interleukin 6 and Interleukin 15 by *Salmonella entrrica Serovar typhymurium* in calves. 104 American Society of Microbiology General Meeting; 2004

Rossetti, C., **Khare, S.**, Lawhon, S.D., Adams, L.G. Gene Expression of *Brucella abortus*-Infected Macrophages from Cattle Naturally Resistant to Brucellosis.104 American Society of Microbiology General Meeting; 2004.

Khare, S., Figueiredo, J.F., Lawhon, S.D., Rossetti, C., Nunes, J.E.S., Zhang, S., Ficht, T.A., Ficht, A.C., and Adams, L.G. Establishment of *Mycobacterium avium subspecies paratuberculosis* Infection and Modulation of bovine Peyer's patch gene expression. The Texas Branch of The American Society for microbiology. College Station, Texas; 2003.

Raffatellu, M., Wilson, P.R., Zhang, S., Humpshries, A.D., Andrews-Polymenis, A., Figueiredo, J.F., **Khare, S.**, Lawhon, S.D., Rossetti, C., Adams, L.G. and Baumler, A.J. *S. enterica serotype typhimurium* interaction with epithelial cells: comparison of in vivo and in vitro models. The Texas Branch of The American Society for Microbiology. College Station, Texas; 2003.

Lawhon, S.D., **Khare, S.**, Figueiredo, J.F., Rossetti, C., Nunes, J.E.S., and Adams, L.G. Effects of the illeal environment on *Salmonella enterica serovar Typimurium*. The Texas Branch of The American Society for Microbiology. College Station, Texas; 2003.

Figueiredo, J.F., Moueimne, R.B., **Khare, S**., Zhang, S., Burghardt, R.C., Baumler, A.J. and Adams, L.G. Down regulation of PMCA induced by *Salmonella Typhimurium* in intestinal epithelial cells and its correlation with cytosolic levels of calcium. The Texas Branch of The American Society for Microbiology. College Station, Texas; 2003.

Khare, S., Zhang, S., Nunes, J.E.S., Figueiredo, J.F., Ficht, T.A., Ficht, A.C., and Adams, L.G. Bovine ligated ileal loops infected with *Mycobacteium avium* subspecies *paratuberculosis*: Ultrastructural analysis of Peyer's patches and early changes in gene expression profiles of C-C cytokines and C-X-C cytokines. 103 General Meeting of American Society of Microbiology, Washington DC. 2003.

Khare, S., Ficht,T.A., Ficht, A.C., Romano, J., Hunter, D. and Adams, L.G. Detection of *Mycobacterium avium subspecies paratuberculosis* in milk and feces using immunomagnetic PCR. 102 The American Society for Microbiology General Meeting. Salt Lake City, Utah; 2002.

Khare, S., Zhang, S., Nunes, J.E.S., Figueiredo, J.F., Ficht, T.A., Ficht, A.C., and Adams, L.G. Early Gene Expression Profile of Bovine Ileal Loop Infected with *Mycobacterium avium subspecies paratuberculosis*. Proceedings Conference of Research Workers in Animal Disease, St. Louis, Missouri, Nov. 10-12, 2002, Abstract 8.

O'Shea, B., **Khare, S**., Bliss, K., Klein, P., Ficht, T. A., Adams, L. G., Rice-Ficht, A. C. Genotyping and Characterization of *Mycobacterium avium subsp. paratuberculosis* Using Amplified Fragment Length Polymorphism for the Use as a Diagnostic Tool. Proceedings Conference of Research Workers in Animal Disease, St. Louis, Missouri, Nov. 10-12, 2002, Abstract 113.

Khare, S., Ficht, T. A., Ficht, A. R., Romano, J, Hunter, D. and Adams, L. Garry. Development of a Sensitive and Rapid Test to Identify Mycobacterium avium subspecies paratuberculosis in Bovine and Bison Milk and Fecal Samples. Proceedings Conference of Research Workers in Animal Disease, St. Louis, Missouri, Nov. 11-13, 2001, Abstract 12.

Khare, S., Gokulan, K., and Linthicum, D.S. Vasoactive Amine Responses in murine cerebrovascular endothelial cells as measured by extracellular acidification rates. The 39th Conference of Immunologists. Asilomar, California; 2000.

Khare, S., Gokulan, K., McGregor, R., and Linthicum, D.S. Use of the cytosensor Microphysiometer to study Hamster taste bud cells responses to sweet compounds. XXI Association for Chemoreception Science, Sarasota, Florida; 1999.

Khare, S., Bhutani, L.K., Rao, D.N. Modulation of leprosy derived macrophages by tuftsin for ROI, RNI and second messengers: a defect at tuftsin receptor expression. The 9th International Congress of Immunology, San Francisco; 1995.

Khare, S., Rao, D.N., Modulation of leprosy derived macrophages by tuftsin for respiratory intermediates (ROI and RNI) and second messengers. 3rd IUBMB Conference, Singapore; 1995.

Khare, S., Bhutani, L.K, Rao, D.N., Intracellular survival strategies of *Mycobacterium leprae* in lepromatous leprosy patients towards tuftsin stimulation. XXI Annual Conference of Association of Clinical Biochemists of India, Bangalore; 1995.

Khare, S., Rao, D.N. Modulation of leprosy derived macrophages by tuftsin of respiratory intermediates (ROI and RNI) and second messengers. XXI Annual Conference of Association of Clinical Biochemists of India, Bangalore; 1995. **This paper was selected for PS Murthy oral Award Presentation.**

Khare, S., Bhutani, L.K., Rao, D.N. Relationship between extracellular stimulation of oxygen dependent killing and second messengers levels of monocytes/macrophages of leprosy patients. Presented at VII International Congress of Dermatology, New Delhi; 1994.

Khare, S., Bhutani, L.K., Rao, D.N. Differential stimulation of monocytes /macrophages derived from leprosy patients: Molecular basis for defective macrophage functions of tuftsin. XX Annual conference Association of Clinical Biochemists of India, Sevagram; 1994.

Khare, S., Bhutani, L.K., Rao, D.N. Depression of tuftsin mediated respiratory burst capacity of monocytes/macrophages of lepromatous leprosy patients: Alteration in signal transduction. Presented in IUIS-AIIMS advanced Immunology Course. New Delhi; 1993.

Khare, S., Bhutani, L.K., Rao, D.N. Defective functional activation of macrophages: Correlation with the membrane potencial changes. XIX Annual Conference of Association of Clinical Biochemists, Hyderabad; 1993.

Khare, S., Bhutani, L.K., Rao, D.N. Altered intracellular signaling during macrophages activation accounts for the defective immunogenic functions in leprosy patients. XX Indian Immunology Society. Bangalore 1993. **This paper was selected for the presentation in the mini symposium on infectious diseases**.

Khare, S., Rao, D.N. Reactive oxygen intermediates during macrophages activation with tuftsin derived peripheral blood of leprosy patients. XVIII Indian Immunology Society, Lucknow; 1992.

Khare, S., Rao, D.N. Modulation of peripheral blood derived monocytes/macrophages from leprosy patients for respiratory burst mechanism and maturation profile. XVIII Annual Conference of Association of Clinical Biochemists of India, New Delhi; 1992. **This paper was awarded the best paper presented in the Conference.**

Khare, S., Iyer, R.R., Rao, D.N. Modulation of peripheral blood derived monocytes/macrophages for immunogenic functions in vitro by tuftsin in leprosy patients. XVI Annual Conference of Indian association of Medical Microbiologists. New Delhi; 1991. **This paper received the award of Junior Best Paper presented in the Conference.**

Khare, S., Bhutani, L.K., Rao, D.N. Modulation of human lepromatous monocytes/macrophages function for reactive oxygen intermediates production and maturation profile. XVII Indian Immunology Society, New Delhi; 1991.

Kaur, J., **Khare, S.**, and Rao D.N. Development of enzyme immunoassay for measuring serum tuftsin levels in normal and leprosy individuals. XVII Association of Clinical Biochemists of India, Shimla; 1991.

Khare, S., Aggarawal, A., Kalra, S.M., Sharma, A., Singh, P.K. T-cell sub-setting using monoclonal antibodies in patients of pulmonary tuberculosis. Presented in UP State Chapter Annual Conference and CME program, Indian Association of Pathologists and Microbiologists; 1989.

Khare, S., Aggarawal, A., Kalra, S.M., Sharma, A., and Narang, R.K. Effect of industrial pollution on the development of pulmonary tuberculosis with special reference to immunological status. National Seminar on Natural Resource Conservation and Environmental Management; 1989.

C. Research Support. List selected ongoing or completed (during the last three years) research projects (federal and non-federal support). Begin with the projects that are most relevant to the research proposed in this application. Briefly indicate the overall goals of the projects and responsibilities of principal investigator identified above.

NIH (PO1, submitted Oct. 2004):-Innate Immunity to *Mycobacterium avium subspecies paratuberculosis*. Principle Investigator-A. C Rice-Ficht, Co-Investigators-A. Rousell, **S. Khare**

College of Medicine, University of Saskatchewan Saskatoon, Canada (1997-1999), Characterization of immune correlates of distinctive host-parasite relationship in murine leishmaniasis. (Mentor-P. A. Bretscher)

Council of Scientific and Industrial Research, New Delhi, India (1995-1997)-Modulation of peripheral blood derived monocytes/macrophages of leprosy patients: Molecular basis for defective immune functions during tuftsin stimulation (Mentor- D. N. Rao)