# Bio Data

**Dr. Rajesh Rajaiah, Ph.D.**

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**SUMMARY:**

- Ph.D. with 10 years of research experience in immunological disease models *e.g*., infectious disease and autoimmune diseases (arthritis and SLE)
- Strong background in using mammalian cell culture and cell-based immunological assay development
- Proficiency in training and managing laboratory technicians and students
- Outstanding communication and interpersonal skills; ability to work independently and as a part of a team
- Excellent publication record in highly respected, peer-reviewed journals

**Research experience:**

November 2014-April 2016

Research Fellow

Center for Drug Evaluation and Review (CDER), Food and Drug Administration (FDA), Silver spring, Maryland 20993 USA.

Project: Innate immune response (Toll-like receptors) in remission phase of Lupus patients.

July 2010-October 2014

University of Maryland, School of Medicine, Baltimore, MD USA.

Senior postdoctoral Fellow

Project: Molecular mechanism of toll-like receptors (TLRs) signaling in macrophage during infection and endotoxin tolerance

April 2006 – July 2010

University of Maryland School of Medicine, Baltimore, MD
Post-doctoral fellow

Project: Role of T cell and antigen presenting cell (APC) cytokines in the pathogenesis of autoimmune arthritis

**EDUCATION**:

**Ph.D.** Biochemistry, 2006/07
University of Mysore, Mysore, India

**M.S.** Biochemistry, 2000
University of Mysore, Mysore, India

**B.S.** Biochemistry, 1997
University of Mysore, Mysore, India

**Awards and Honors**

CSIR-UGC National Entrance Test with fellowship among top 20% (2000).

IEIIS Society Travel Award 2014 (Salt Lake City Utah).

**Citations and h index (Google Scholar)**

Total citation: 822, h index: 18 and i-10 index: 25

**MEMBERSHIPS:**

- International Endotoxin and Innate Immunity Society 2014-present
- Society for Leukocyte Biology 2011-present
- The American Association of Immunologists 2010-present.

**TEACHING EXPERIENCE:**

M.Sc Biochemistry courses (2001-2006)

**JOURNAL REVEIWER**

- The Journal of Immunology
- International Immunopharmacology
- Journal of Interferon and Cytokine Research
- Life Sciences
- Current Medicinal Chemistry
- Journal of Ethnopharmacology
- Pharmaceutical Biology
- Journal of Pharmacy and Pharmacology
- Autoimmunity
- American Journal of Chinese Medicine

**PUBLICATIONS:**

**Original Reports**

**1)** DJ Perkins, **R Rajaiah,** SM Tennant, G Ramachandran, TN Dyson and SN Vogel. *Salmonella* typhimurium Co-opts the Host Type I Interferon System to Selectively Restrict Macrophage Innate Immune Transcriptional Responses (2015). J Immunol. 2015 Sep 1;195(5):2461-71.

**2) R Rajaiah,** DJ Perkins, Ireland DDC and SN Vogel. The CD14 Dependence of TLR4 Endocytosis and TRIF Signaling Displays Ligand Specificity and Is
Dissociable in Endotoxin Tolerance (2015). Proc Natl Acad Sci U S A. 2015 Jul 7;112(27):8391-6.

3) Venkataramana M, Chandra Nayaka S, Anand T, **Rajesh R**, Aiyaz M, Divakara ST, Murali HS, Prakash HS, Lakshmana Rao PV. Zearalenone induced toxicity in SHSY-5Y cells: The role of oxidative stress evidenced by N-acetyl cysteine. Food Chem Toxicol. 2014;65:335-42.

4) **R Rajaiah**, DJ Perkins, SK Polumuri, A Zhao, AD Keegan and SN Vogel. Dissociation of Endotoxin tolerance and alternatively activated macrophage**.** J Immunol. 2013 May 1;190(9):4763-72.

5) Gowda CD, Shivaprasad HV, Kumar RV, **Rajesh R**, Saikumari YK, Frey BM, Frey FJ, Sharath BK, Vishwanath BS.Characterization of major zinc containing myonecrotic and procoagulant metalloprotease 'malabarin' from non lethal trimeresurus malabaricus snake venom with thrombin like activity: its neutralization by chelating agents. Curr Top Med Chem. 2011;11(20):2578-88.

6) YH Yang, **R Rajaiah**, E Ruoslahti and KD Moudgil. Peptides targeting the inflamed synovial vasculature attenuate ongoing autoimmune arthritis. *PNAS USA* 2011, 108(31):12857-62) **.** (PMID: 21768392).

7) SH Venkatesha, H Yu, **R Rajaiah** and KD Moudgil. Celastrus-derived celastrol suppresses autoimmune arthritis by modulating antigen-induced cellular and humoral effector responses. *J Biol Chem*. 2011; 286(17):15138-46. (PMID: 21402700).

**8)** Komeh-Nkrumah SA, Nanjundaiah SM, **Rajaiah R,** Yu H, Moudgil KD. Topical Dermal Application of Essential Oils Attenuates the Severity of Adjuvant Arthritis in Lewis Rats. Phytother Res. 2012; 26(1):54-9. (PMID: 21544881).

9) H Yu, YH Yang, **R Rajaiah** and KD Moudgil. Nicotine-induced differential modulation of autoimmune arthritis in the Lewis rat involves changes in IL-17 and anti-citrullinated cyclic peptide antibodies. Arthritis Rheum. 2011; 63(4):981-91. (PMID: 21305506).

10) SH Venkatesha, **R Rajaiah**, B Berman, and KD Moudgil. Immunomodulation of autoimmune arthritis by herbal CAM. Evid Based Complement Alternat Med. 2011; 2011:986797. (PMID: 21234398) (Review).

11) **R Rajaiah**, M Puttabyatappa, SK Polumuri and KD Moudgil. Interleukin-27 and IFN-gamma are involved in regulation of autoimmune arthritis. J Biol Chem. 2011; 286(4):2817-25. (PMID: 21123181).

12) YH Yang, **R Rajaiah**, DY Lee, Z Ma, H Yu, HH Fong, L Lao, BM Berman, KD Moudgil. Suppression of ongoing experimental arthritis by a chinese herbal formula (huo-luo-xiao-ling dan) involves changes in antigen-induced immunological and

biochemical mediators of inflammation. Evid Based Complement Alternat Med. 2011; 2011:642027. (PMID: 20981317). (IF-1.722).
13) Shivaprasad HV, **Rajaiah R**, Frey BM, Frey FJ and Vishwanath BS. 'Pergularain e I'--a plant cysteine protease with thrombin-like activity from Pergularia extensa latex. Thromb Res. 2010, 125(3):e100-5.
14) **R Rajaiah**, DY-W Lee, Z Ma, AY Fan, L Lao, HHS Fong, BM Berman and KD Moudgil. Huo-Luo-Xiao-Ling Dan modulates antigen-directed immune response in adjuvant-induced inflammation. J Ethnopharmacol 2009, 123(1):40-4. (PMID: 19429337).
15) **R Rajaiah** and KD Moudgil. Heat shock proteins can promote as well as regulate inflammation in autoimmunity. Autoimmun Rev. 2009, 8(5):388-93 (Review). (PMID: 19121415).
16) HV Shivaprasad, **R Rajesh**, BL Nanda, KK Dharmappa, BS Vishwanath. Thrombin like activity of Asclepias curassavica L. latex: action of cysteine proteases. J Ethnopharmacol. 2009, 123(1):106-9. (PMID: 19429347).
17) Shivaprasad HV, Riyaz M, Venkatesh Kumar R, Dharmappa KK, Tarannum S, Siddesha JM, **Rajesh R**, Vishwanath BS.Cysteine proteases from the Asclepiadaceae plants latex exhibited thrombin and plasmin like activities. J Thromb Thrombolysis. 2009 Oct;28(3):304-8.
18) SR Satpute, **R Rajaiah**, S Polumuri, and KD Moudgil. Tolerization with heat shock protein 65 induces protection against adjuvant arthritis by modulating the IFN-g, IL-17 and antibody response. Arthritis Rheum. 2009, 60: 103-113. (PMID: 19116924).
19) HR Kim*, **R Rajaiah***, Qing-Li W u, SR Satpute, JE Simon, BM Berman, and KD Moudgil. Green tea affords protection against autoimmune arthritis by modulating the disease related immune events. J. Nutr. 2008, 138: 1-6. (PMID: 18936206). (*Equal first author).
20) EY Kim, HH Chi, **R Rajaiah** and KD Moudgil. Exogenous tumour necrosis factor alpha induces suppression of autoimmune arthritis. Arthritis Res Ther. 2008, 10(1):R38. (PMID: 18380898).
21) **Rajesh R,** Shivaprasad HV, Raghavendra Gowda CD, Nataraju A, Dhananjaya BL and Vishwanath BS. Comparative study on plant latex proteases and their involvement in hemostasis: a special emphasis on clot inducing and dissolving properties. Planta Med. 2007, 73(10): 1061-7.
22) Nataraju A, Raghavendra Gowda CD, **Rajesh R** and Vishwanath BS. Group IIA secretory PLA2 inhibition by ursolic acid: a potent anti-inflammatory molecule. Curr Top Med Chem. 2007;7(8):801-9.
23) Nanda BL, Nataraju A, **Rajesh R**, Rangappa KS, Shekar MA and Vishwanath BS. PLA2 mediated arachidonate free radicals: PLA2 inhibition and neutralization of free radicals by anti-oxidants- a new role as anti-inflammatory molecule. Curr Top Med Chem 2007, 7(8):765-77. (Review). (PMID: 17456040).
24) **Rajesh R**, Nataraju A, Raghavendragowda CD, Frey BJ, Frey FJ, Vishwanath BS. Purification and Characterization of a heat stable, 34-kDa glycoprotein from *Synadenium grantii* latex: Action on human fibrinogen and plasma clot. Biochimie 2006, 88(10):1313-22. (PMID: 16997451).
25) Dhananjaya BL, Nataraju A, **Rajesh R**, Raghavendra Gowda CD, Sharath BK, Vishwanath BS and D'Souza CJ. Anticoagulant effect of *Naja naja* venom 5'nucleotidase: demonstration through the use of novel specific inhibitor, vanillic acid. Toxicon 2006, 48(4):411-21. (PMID: 16899266).
26) Gowda CD, Nataraju A, **Rajesh R**, Dhananjaya BL, Sharath BK, Vishwanath BS Differential action of proteases from *Trimeresurus malabaricus*, *Naja naja* and

*Daboia russellii* venoms on hemostasis. Comp Biochem Physiol C Toxicol Pharmacol. 2006, 143(3):295-302.

27) Gowda CD, **Rajesh R**, Nataraju A, Dhananjaya BL, Raghupathi AR, Gowda TV, Sharath BK, and Vishwanath BS. Strong myotoxic activity of Trimeresurus malabaricus venom: role of metalloproteases. Mol Cell Biochem 2006, 282(1-2):147-55. (PMID: 16317522).

28) Sadashiva MP, Nataraju A, Mallesha H, **Rajesh R**, Vishwanath BS and Rangappa KS. Synthesis and evaluation of trimethoxyphenyl isoxazolidines as inhibitors of secretory phospholipase A2 with anti-inflammatory activity. Int J Mol Med. 2005, 16(5):895-904.

29) **Rajesh R**, Raghavendra Gowda CD, Nataraju A, Dhananjaya BL, Kemparaju K, and Vishwanath BS. Procoagulalnt activity of Calotropis gigantea latex associated with fibrino(geno)lytic activity. Toxicon 2005, 46 (1); 84-92. (PMID: 15922393).

**Invited book chapters**

1) **R Rajaiah**, Y Yang, SR Satpute, M Durai, and KD Moudgil. Immunopathogenesis and treatment of autoimmune arthritis in animal models, In: Recent Research Developments in Rheumatology (edited by Antonio La Cava, MD, PhD, UCLA, Los Angeles, CA, USA), Research Signpost Publishers 2008, Ch 1: 1-30.
2) **R Rajaiah** and KD. Moudgil. Animal Models, In: Rheumatoid Arthritis (eds. M.C. Hochberg, A.J. Silman, J.S. Smolen, M.H. Weisman, and M.E. Weinblatt), Mosby, Inc., an affiliate of Elsevier, Inc., 2008, Ch 8N: 218-224.
3) H.V. Shivaprasad, **R. Rajesh**, M. Yariswamy, and B.S. Vishwanath. Procoagulant Properties of Plant Latex Proteases (eds. R.M. Kini et al.,), *Toxins and Hemostasis*, Springer Science+Business Media B.V. 2010, Ch 33: 591-603.

**ABSTRACTS and PRESENTATIONS**

1) **R Rajaiah**, DJ Perkins and SN Vogel. CD14-independent receptor internalization and signaling mediated by TLR4/MD2 agonistic antibody. Joint meeting for SLB and IEIIS society 2014. (Oral presentation and Abstract).
2) DJ Perkins, **R Rajaiah**, G Ramachandran, T Dyson, SM Tennant and SN Vogel. *Salmonella* typhimurium Co-opts the Mammalian Type I Interferon System to Restrict Innate inflammatory Responses Selectively and Promote Pathogenesis. Joint meeting for SLB and IEIIS society 2014. (Oral presentation and Abstract).
3) **R Rajaiah,** M Puttabyatappa and KD Moudgil. Intricate regulation of IL-17 response by IFN-g and IL-27 determines the outcome of pathogenetic event in autoimmune experimental arthritis. Poster presentation AAI 2010.
4) SR Satpute, E.Y. Kim, **R. Rajaiah**, and K.D. Moudgil. Regulation of autoimmune arthritis by heat-shock protein 65-induced pro-inflammatory cytokines. The 6th International Congress on Autoimmunity, Porto, Portugal, September 10-14, 2008.
5) EY Kim, SR Satpute, **R Rajaiah** and KD Moudgil. Pro-inflammatory cytokines mediate regression of autoimmune arthritis induced by Th1/Th17 cells. FOCIS 2009, San Francisco, CA, June 11-14, 2009, Clinical Immunology 2009, 131 (supplement): S34.
6) SR Satpute, EY Kim, **R Rajaiah**, and K.D. Moudgil. Regulation of autoimmune arthritis by heat-shock protein 65-induced pro-inflammatory cytokines.

The 6th International Congress on Autoimmunity, Porto, Portugal, September 10-14, 2008.

7) **R Rajaiah**, D Lee, L. Lao, H Fong, B Berman, and KD Moudgil. Immunological basis of the anti-arthritic activity of Huo-Luo-Xiao-Ling Dan in the Lewis rat, at "The status and future of acupuncture research: 10 years post-NIH consensus conference", University of Maryland at Baltimore, Society for Acupuncture Research (SAR) Annual Conference, Baltimore, MD, USA, Nov. 8-11, 2007.