

Scientist Profile

Name	Dr. Uma Devi K.R.
Designation	Scientist "D" & HOD – Bacteriology
Date of Birth	09.05.1971
Date of Joining	5th July 2013
Date of joining present post	5th July 2013
Discipline	Microbiology and Immunology
Address (off.) including Contact Number*	National Institute for Research in Tuberculosis(ICMR) No: 1, Mayor Sathyamoorthy Road, Chetpet, Chennai – 600 031 Phone No.: 044 2836 9620
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Educational Qualifications:

Degree	Institution	FIELD OF STUDY	YEAR
PhD	Tuberculosis Research center/The Tamilnadu Dr.MGR Medical University, Guindy,Chennai, India	Biomedical Sciences	2002
M.Sc.	Dr. ALM PGIBMS, University, Taramani, Chennai, India	Biomedical Genetics	1993
B.Sc.	Queen Mary's College, Chennai, India.	Botany	1991

1. Research Experience

- July 2013 - Till Date: **Scientist "D" and Head**, Department of Bacteriology, National Institute for Research in Tuberculosis (ICMR) Chennai – India.
- July 2010- May 2013: **Assistant Professor**, Department of Paediatrics (Infectious Disease) Albert Einstein College of Medicine, New York, USA.
- July 2008 - July 2010: **Instructor**, Department of Paediatrics (Infectious Disease) Albert Einstein College of Medicine, New York, USA
- Oct 2003 - July 2008: **Research Associate**, Department of Microbiology and Immunology, Einstein College of Medicine, New York, USA.
- July 2002 -July 2003: **Post Doctoral Fellow**, Service de Microbiologie, Hospital Saint Louis, University Paris VII, Paris, France.

2. Membership/Fellowship of Professional Societies/Associations :

1. Life Member, Indian Immunology Society 1999 onwards
2. Member, New York Academy of sciences. 2003 - 2013.

3. Workshops/Conferences/Symposiums attended (Recent):

1. 3rd SRU-CITI International Conference on "Ethics and Responsible Conduct of Research: Basics and Beyond" organised by CITI – India, Sri Ramachandra University and CITI University of Miami, USA on November 11th & 12th, 2014 at Ramachandra university, Chennai.
2. Capacity building workshop on 'Evaluation of new TB diagnostics' at NIRT, Chennai, Dec 8-12th 2014.
3. Guest lecture in the National Symposium on "Genomics & Human Health" at IBMS Taramani on 03.03.2015.
4. Sensitization Workshop for NRL Microbiologist at NTI, Bangalore on 05.03.2015.
5. Relational Sequencing TB Data platform project workshop at Geneva on July 27-29th 2015.
6. DBT Nominee in the 3rd IBSC Committee for KMS Health Care Pvt. Ltd at Padi, Chennai on 04.09.2015.
7. Expand TB Symposium at New Delhi on Sep 09-12th 2015.
8. Medical Technology Steering Committee meeting at Directorate of Medical Education, Kilpauk on 01.10.2015
9. Lab Biosafety training at NTI, Bangalore on Nov 26-27th 2015.
10. Conducted Sensitization workshop on "Accelerating access to quality TB diagnosis for pediatric cases in Chennai, Hyderabad, Kolkata and New Delhi" at NIRT, Chennai on 05.02.2016
11. Participated in "Antibiotics and Antimicrobial Resistance in water Systems-Prevalence and impacts" at IIT Madras, on 07.03.2016
12. CPTR 2016 workshop & ReSeq TB Experts face to face meeting at Washington DC, USA on April 04-08th 2016.

4. Awards

- 2011: RO3 fellowship 1R03AI097040-01, NIAD-NIH, USA.
2009: Keystone Symposia scholar for Prevention of HIV/AIDS.
2008: Senior key personnel, NIH-1R01DE019064-01
2002: French Government postdoctoral Scholarship (Paris VII University Postdoctoral fellowship Number 006)
1999: ICMR Senior Research Fellowship from Government of India.
1995: DBT Fellowship from INDO-US Vaccine Action Program
1991: FIRST RANK in B.Sc.

5. Publications

1. Narender M, Jaswanth S. Bhandaru, Umasankar K, Malathi J, Raghuram R Adidala, **Umadevi K. R.**, Dusthacker A. V. N, Venkat Rao Kaki, Raghuram R. Akkinapally. Synthesis, in vitro antimycobacterial evaluation and docking studies of some new 5,6,7,8-

tetrahydropyrido[40,30:4,5]thieno[2,3-d] pyrimidin-4(3H)-one schiff bases **Biorg Med Chem Lett**. 2016; 26 (3):836-40. PMID: 26755393

2. Raizada N, Sachdeva KS, Swaminathan S, Kulsange S, Khaparde SD, Nair SA, Khanna A, Chopra KK, Hanif M, Sethi GR, **Umadevi KR**, Keshav Chander G, Saha B, Shah A, Parmar M, Ghediya M, Jaju J, Boehme C, Paramasivan CN. Piloting Upfront Xpert MTB/RIF Testing on Various Specimens under Programmatic Conditions for Diagnosis of TB & DR-TB in Paediatric Population. **PLoS One**. 2015. Oct 15;10(10):e0140375. doi: 10.1371/journal.pone.0140375. eCollection 2015.
3. Balaji Subramanyan and **Uma Devi KR**. Laboratory Investigation for the Detection of Tuberculosis from Clinical Specimens. **Indian Journal of Practical Pediatrics** 2014: Vol.16 No.4, 337-344.
4. Jensen K, Pena MD, Wilson R, **Ranganathan UD**, Jacobs WR Jr, Fennelly G, Larsen MH, Rompay V, Kozlowski P and Abel K. A neonatal oral Mycobacterium tuberculosis-SIV prime /intramuscular MVA-SIV boost combination vaccine induces both SIV and Mtb-specific immune responses in infant macaques. **Trials in Vaccinology**.2013: Volume 2, 2013, 53-63. PMID: 24454591
5. **Ranganathan, U. D.** and Raja, A. (2013). Purification of Antigen 85 Complex of *Mycobacterium tuberculosis*. **Bio-protocol** 3(3): e324. <http://www.bio-protocol.org/e324>
6. **Ranganathan UD**, Larsen M, Abel k, Jacobs WR Jr and Fennelly G. Recombinant attenuated M.tuberculosis-SIVgag (rAMtb-gag) vaccination primes for SIV-specific CD8 T cell response that are boosted by Ad5-SIVgag in mice. **Retrovirology** 2012, Vol. 9 (2):P263.
7. Jensen K, **Ranganathan UD**, Van Rompay KK, Canfield DR, Khan I, Ravindran R, Luciw PA, Jacobs WR Jr, Fennelly G, Larsen MH, Abel K. A recombinant attenuated Mycobacterium tuberculosis vaccine strain is safe in immunosuppressed simian immunodeficiency virus-infected infant macaques. **Clin Vaccine Immunol**. 2012: Aug; 19 (8):1170-81. PMID: 22695156.
8. **Ranganathan, U. D.**, Bethunaickan, R. and Raja, A. Isolation of Circulating Immune Complexes from TB Patient Serum for Serodiagnosis. **Bio-protocol**. 2012.2(11): e188. <http://www.bio-protocol.org/e188>
9. **Ranganathan, U. D.** and Raja A. (2012). Purification of 38kDa Antigen of *Mycobacterium tuberculosis* by Two Dimensional Preparative Electrophoresis. **Bio-protocol** 2(24): e312. <http://www.bio-protocol.org/e312>
10. Larsen MH, Jacobs WR, Porcelli SA, Kim J, **Ranganathan UD**, Fennelly GJ. Balancing safety and immunogenicity in live-attenuated mycobacterial vaccines for use in humans at risk for HIV: response to misleading comments in Rangathan et al., "recombinant pro-apoptotic Mycobacterium tuberculosis generates CD8+ T cell responses against human immunodeficiency virus type 1 ENV and M. tuberculosis in neonatal mice". **Vaccine**. 2010: May 7; 28(21):3633-3634. PMID:20347058.
11. **Ranganathan UD**, Larsen MH, Kim J, Porcelli SA, Jacobs WR Jr, Fennelly GJ. Recombinant pro-apoptotic Mycobacterium tuberculosis generates CD8+ T cell responses against human immunodeficiency virus type 1 Env and M. tuberculosis in neonatal mice. **Vaccine**. 2009;28(1):152-61. PMID: 19808028
12. Raja A, **Ranganathan UD**, Bethunaickan R. Improved diagnosis of pulmonary tuberculosis by detection of antibodies against multiple Mycobacterium tuberculosis antigens. **Diagn. Microbiol Infect Dis**. 2008: Apr;60(4):361-368. . PMID:18206332
13. Mo Y, Quanquin NM, Vecino WH, **Ranganathan UD**, Tesfa L, Bourn W, Derbyshire KM, Letvin NL, Jacobs WR Jr, Fennelly GJ. Genetic Alteration of Mycobacterium smegmatis to

- Improve Mycobacterial Bactofection and DNA Immunization. *Infect. Immun.* 2007;75(10):4804-16. PMID:17664267
14. Alamelu Raja, **Uma Devi KR**, and Ramalingam B. Clinical value of specific detection of immune complex-bound antibodies in pulmonary tuberculosis. *Diagn. Microbiol. Infect. Dis.* 2006; 56(3):281-287. PMID:16876372.
 15. Alamelu Raja, **Uma Devi KR**, Ramalingam B and Patrick J. Brennan. Improved diagnosis of pulmonary tuberculosis by detection of free and immune complex bound anti – 30kDa antibodies. *Diagn. Microbiol. Infect. Dis.* 2004;50 (4):253-259. PMID:15582298.
 16. Selvaraj P., Alamelu Raja, Kurian S. M, **Uma Devi K. R.** and Narayanan P.R. HLADR phenotypes and IgG, IgA and IgM antibody responses to *Mycobacterium tuberculosis* culture filtrate and 30 kDa antigens in pulmonary tuberculosis. *Current Science.* 2004: 87(6), 771-775.
 17. **Uma Devi KR**, Ramalingam B and Raja A. Antibody response to Mycobacterium tuberculosis 30 and 16kDa antigens in pulmonary tuberculosis with human immunodeficiency virus coinfection. *Diagn. Microbiol. Infect. Dis.* 2003;46(3):205-209. PMID:12867096.
 18. Ramalingam B, **Uma Devi KR**, and Raja A. Isotype-specific anti-38 and 27 kDa (mpt 51) response in pulmonary tuberculosis with human immunodeficiency virus coinfection. *Scand J. Infect Dis.* 2003; 35(4):234-239. PMID: 12839150.
 19. Mahadevan , R, Porkodi, R, Panchapakesa Rajendran, C, Chandrasekeran, A N, **Uma Devi, K R**, Alamelu Raja. IgM, IgG, and IgA, response to enterobacteria in ankylosing spondylitis patients of South India. *Annals of New York Academy of Sciences.* 2002: 958; 408-411.
 20. K.S. Senthil Kumar, **K.R. Uma Devi** and Raja Alamelu. Isolation and evaluation of diagnostic value of two major secreted proteins of *Mycobacterium tuberculosis*. *Indian Journal of Chest and Allied Sciences.* 2002: 44; 5-12. PMID:12437234.
 21. **Uma Devi, K.R.**, Ramalingam, B. and Alamelu Raja. Qualitative and quantitative analysis of antibody response in childhood tuberculosis against antigens of *Mycobacterium tuberculosis*. *Indian Journal of Medical Microbiology.* 2002: 20 (3); 145-149. PMID: 11874868.
 22. Ramalingam, B, **Uma Devi, K.R.**, Soumya Swaminathan and Alamelu Raja. Isotype specific antibody response in childhood tuberculosis against purified 38kDa antigen of *Mycobacterium tuberculosis*. *Journal of Tropical Pediatrics.* 2002: 48 (3): 188-189. PMID:12164607.
 23. Alamelu Raja, **Uma Devi K.R**, Ramalingam B and Patrick J. Brennan. Immunoglobulin G,A and M responses in serum and circulating immune complexes elicited by the 16- Kilodalton antigen of *Mycobacterium tuberculosis*. *Clinical and Diagnostic Laboratory Immunology.* 2002: 9(2):308-312. PMID:11858712.
 24. **Uma Devi, K. R.**, Senthil Kumar, K. S., Ramalingam, B and Alamelu Raja. Purification and characterization of three immunodominant proteins (38, 30 and 16 kDa) of *Mycobacterium tuberculosis*. *Protein expression and purification.* 2002: 24:188-195. PMID:11858712.
 25. Alamelu Raja, **Uma Devi K.R**, Ramalingam B and Vijayasekeran D. Serologic response to a secreted (30kDa) and a cytosolic (16kDa) antigen of *Mycobacterium tuberculosis* in childhood tuberculosis. *The Pediatric infectious disease Journal.* 2001: 20:1161- 1165. PMID:11740324.
 26. **Uma Devi K.R**, Ramalingam B, Brennan, PJ, Narayanan PR, Alamelu Raja. Specific and early detection of IgG, A and M antibodies to M. tuberculosis 38kDa antigen in pulmonary tuberculosis. *Tuberculosis.* 2001: 81 (3): 249-253. PMID:11466037.

27. Senthil kumar K.S, Alamelu Raja, **Uma Devi K.R**, Ramesh Pranjape. Production & characterization of monoclonal antibodies to *Mycobacterium tuberculosis*. **Indian Journal of Medical Research**. 2000:12: 37-46. PMID:11037676.

6. ONGOING RESEARCH PROJECTS:

1. **Title** : *Protecting and improving public health globally: Building laboratory, surveillance and workforce capacity to detect, respond to, and prevent drug resistant tuberculosis in India.*
Role : Principal investigator
Duration : 5 Years (Sep 2015- ongoing)
Agency : CDC, Atlanta, USA.
Amount : 1,150,000 USD

2. **Title** : *Cambridge-Chennai Centre Partnership on Antimicrobial Resistance in Tuberculosis: Focus on Novel Diagnostics and Therapeutics.*
Role : Co – Principal investigator
Duration : 3 Years (Dec 2015-Ongoing)
Agency : DBT- MRC- (Indo-UK)
Amount : 787.44 Lakhs INR

3. **Title** : *Purity and in vivo efficacy studies on Transitmycin: A novel Anti TB and Anti HIV antibiotics from streptomycin sp.*
Role : Principal Investigator at NIRT site
Duration : 1 year (March 2015)
Agency : ICMR-India
Amount : 4,76,607.00 INR

4. **Title** : *Early Bactericidal activity for Tuberculosis during a short monotherapy.*
Role : Principal Investigator
Duration : 1 Year (2016-2017)
Agency : CDC, Atlanta, USA.
Amount : (Yet to be sanctioned)