

BIOGRAPHICAL SKETCH

NAME Alamelu Raja		POSITION TITLE Scientist F, Department of Immunology	
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Fatima college, Madurai, India	B. Sc	1974-76	Major - Chemistry
Madurai Kamaraj University, Madurai, India	M. Sc	1976-78	Molecular Biology
Madras University, Chennai, India	Ph. D	1987	Immunology

A. Research and/or Professional Experience

1979-1985: Worked as a part time Research Fellow and as a Staff member, in the Department of Immunology at Tuberculosis Research Centre, Madras on "Immuno modulation of host response in Filariasis".

1986: Trained in Immunological techniques such as Affinity Chromatography and Production of monoclonal antibodies at the Department of Medicine, Case Western Reserve University, Cleveland, OHIO.

1987-2005: Worked in various capacities as Research officer, Senior Research Officer, Assistant Director and Deputy Director, in the Department of Immunology at Tuberculosis Research Centre, Chennai on Immunodiagnosis, purification of antigens and development of diagnostic tests for tuberculosis, *in vitro* human cellular immune response in tuberculosis..

2006-present: Presently, working as Deputy Director (Senior Grade) from 2006 onwards, heading a Research Team of 5 Research Fellows and Trainee students. Responsible for Immunology and Immunodiagnosis of tuberculosis, flowcytometry and a portion of HIV immunology work.

Areas of Research interest and expertise:

The areas of research interests are mycobacterial proteins and development of diagnostic tests. During the past 10-15 years experience and expertise has been gained in preparative purification techniques for mycobacterial proteins; raising polyclonal and monoclonal antibodies; analytical electrophoretic techniques; development of various formats of ELISA for diagnosis and immuno-phenotyping of blood cells using flow cytometry. Recent interest centres on host immunity and protective immune response using mycobacterial proteins.

Honours

NIL

B. Selected Publications

- 1) **Alamelu Raja**, Kumaraswami, V., Narayanan, P.R., Tripathy, S.P. and Thiruvengadam, K.V. (1983). Cell-mediated immunity in chyluria. Indian Journal of Medical Research, 77, 443-446.
- 2) Basheer Ahmed, Sivakumar, M.R., **Alamelu R.**, Kumaraswami, V., Narayanan, P.R. and Thiruvengadam, K.V. (1984). Possible sensitization by filarial antigens in Diethyl Carbamazine (DEC) responsive bronchial asthma. A preliminary enquiry. Journal of Association of Physicians of India, 32, 937-938.
- 3) **Alamelu Raja**, Rabia Hussain, Prabhakar, R. (1984). Humoral immune response to filarial antigens in Chyluria. Journal of Bio-Sciences, 6, 723-728.
- 4) Narayanan, P.R., Vanamala, C.R., **Raja Alamelu**, Kumaraswami, V., Tripathy S. P. and Prabhakar, R. (1986). Reduced lymphocyte response to mitogens in patients with Bancroftian filariasis. Transactions of the Royal Society of Tropical Medicine and Hygiene, 80, 78-84.
- 5) Daniel, T.M., **Raja, A.** and Olds, G.R. (1987) The specific immunodiagnosis of tuberculosis. Bulletin of the International Union Against Tuberculosis, 62, 56-59.
- 6) **Raja, A.**, Baughman, P. and Daniel, T.M. (1988). The detection of immunoassay of antibody to mycobacterial antigens and mycobacterial antigens in broncho-alveolar lavage fluid from patients with tuberculosis and control subjects. Chest, 94, 133-137.
- 7) **Raja, A.**, Andrea Riedel Machicao, Anne B. Morrissey, Michael R. Jacobs and Thomas M. Daniel. (1988). Specific detection of Mycobacterium tuberculosis in radiometric cultures by using an immunassay for Antigen 5. Journal of Infectious Diseases, 158, 468-470.
- 8) Rajajee,S. and **Raja, A.** (1991). Immunodiagnosis of Tuberculous meningitis. Journal of Tropical Paediatrics, 37: 266-268.
- 9) **Alamelu Raja**, Narayanan, P.R., Jawahar, M.S., Prabhakar, R. (1994). Evaluation of Mycobacterium tuberculosis Antigen 6 by Enzyme Linked Immunosorbent assay (ELISA). Indian Journal of Tuberculosis, 41, 245-251.
- 10) **Alamelu Raja**, Narayanan, P.R., Rema Mathew and Prabhakar, R. (1995). Characterization of mycobacterial antigens and antibodies in circulating immune complexes from pulmonary tuberculosis. Journal of Laboratory and Clinical Medicine, 125, 581-588.
- 11) Senthil Kumar, K.S., **Alamelu Raja**, Uma Devi, K.R. and Paranjape, R.S. (2000). Production and characterization of monoclonal antibodies to *Mycobacterium tuberculosis*. Indian Journal of Medical Research. 112: 37-46.
- 12) **Alamelu Raja** and P. R. Narayanan (2000)
Evaluation of diagnostic tests for tuberculosis
Ranbaxy Science Foundation's 7th Round Table Conference on "Tuberculosis", Number 7, 93-112.

- 13) Uma Devi, K.R., Ramalingam, B., Brennan, P.J., Narayanan, P.R, **Alamelu Raja**. (2001). Specific and early detection of IgG, IgA and IgM antibodies to *M. tuberculosis* 38kDa antigen in pulmonary tuberculosis. *Tuberculosis*, 81, 249-253.
- 14) **Alamelu Raja**, Acharyulu, G.S., Selvaraj, R. and Abdul Khudoos. (2001). Evaluation of antibody level to purified mycobacterial antigens for identification of tuberculous infection. *Biomedicine*, 21, 63-69.
- 15) **Raja, A**, Ranganathan UD, Bethunaickan R and Dharmalingam, V. (2001). Serological response to a secreted (30kDa) and a cytosolic (16kDa) antigen of *Mycobacterium tuberculosis* in childhood tuberculosis. *Pediatr Infect Dis J*. 20, 1161-1164.
- 16) Uma Devi, K.R., Senthil Kumar, K. S., Ramalingam, B. and **Alamelu Raja**. (2002). Purification and characterization of three immunodominant proteins (38, 30 and 16 kDa) of *Mycobacterium tuberculosis*. *Protein Expression and Purification*, 24: 188 -195.
- 17) **Alamelu Raja**, Uma Devi, K.R., Ramalingam, B. and Patrick J. Brennan. (2002). Immunoglobulin G, A and M response in serum and circulating immune complexes against 16kDa antigen of *M.tuberculosis*. *Clinical and Diagnostic Laboratory Immunology*, 9: 308 - 12.
- 18) Ramalingam, B., Uma Devi, K. R., Soumya Swaminathan, **Alamelu Raja**. (2002). Isotype specific antibody response in Childhood tuberculosis against purified 38kDa antigen of *Mycobacterium tuberculosis*. *Journal of Tropical Pediatrics*: 48, 188 –189
- 19) Madhavan R, Porkodi R, Panchapakesa Rajendran C, Chandrasekaran AN, Uma Devi KR and **Alamelu Raja**. (2002). IgM, IgG and IgA response to Enterobacteria in Ankylosing Spondylitis patients of South India. *Annals of New York Academy of Sciences*, 958: 40, 8- 11.
- 20) Uma Devi, K.R., Ramalingam, B. and **Alamelu Raja**. (2002). Qualitative and quantitative analysis of antibody response in childhood tuberculosis against antigens of *Mycobacterium tuberculosis*. *Indian Journal of Medical Microbiology* 20, 145-149
- 21) Senthil Kumar, K. S., Uma Devi, K. R. and **Raja Alamelu** (2002). Isolation and evaluation of diagnostic value of two major secreted proteins of *Mycobacterium tuberculosis*. *Indian J Chest Dis Allied Sci* 44: 5-12.
- 22) Selvaraj, R., Gopal, G., **Raja, A.**, Kumaraswami V. (2002). Pattern recognition technique in immunological antigenic tests to identify *Mycobacterium tuberculosis* infection. *Tuberculosis* 82: 261-266
- 23) Ramalingam, B., Uma Devi, K. R., **Alamelu Raja**. (2003). Isotype specific anti 38kDa and 27kDa (mpt 51) response in pulmonary tuberculosis with human immunodeficiency virus coinfection. *Scand. J. Infect. Dis*. 35: 234-239.
- 24) Uma Devi, K.R., Ramalingam, B., **Alamelu Raja**. (2003). Antibody response to *Mycobacterium tuberculosis* 30 and 16kDa in pulmonary tuberculosis with human immunodeficiency virus coinfection. *Diagn. Microbiol. Infect. Dis*. 46: 205-209.

- 25) Swaminathan, S., Hanna, L. E., **Raja, A.**, Sankaran, K., and Arun Kumar, R. (2003). Age-related changes in blood lymphocyte subsets of south Indian children. *The National Medical Journal of India*, 16, 249-252.
- 26) Ramalingam, B., Alain R. Baulard , Camille Locht , Narayanan, PR. and **Alamelu Raja.** (2004). Cloning, Expression and Purification of the 27 kDa (MPT 51, Rv3803c) Protein of *Mycobacterium tuberculosis*. *Protein Expression and Purification*, 36, 53-60.
- 27) P. Selvaraj, **Alamelu Raja**, Sunil M. Kurian, K. R. Uma Devi, and P. R. Narayanan (2004). HLA-DR phenotypes and IgG, IgA and IgM antibody response to *Mycobacterium tuberculosis* culture filtrate and 30kDa antigens in pulmonary tuberculosis. *Current Science*, 87, 771-774.
- 28) **Alamelu Raja**, Uma Devi, K.R., Ramalingam, B. and Patrick J. Brennan (2004). Improved diagnosis of pulmonary tuberculosis by detection of free and immune complex bound Anti-30kDa antibodies. *Diagn. Microbiol. Infect. Dis.*, 50, 253-259.
- 29) **Alamelu Raja** (2004). Immunology of tuberculosis. *Indian Journal of Medical Research*, 120, 213-232.
- 30) **Raja A**, Ranganathan UD, Ramalingam B (2006). Clinical value of specific detection of immune complex-bound antibodies in pulmonary tuberculosis. *Diagn Microbiol Infect Dis.* 56, 281-7.
- 31) Madhan Kumar Murthy, Ramana Rao V. Parasaa, Anbarasu Deenadayalana, Pawan Sharma **Alamelu Raja** (2007),. Evaluation of the diagnostic potential of region of deletion-1–encoded antigen culture filtrate protein-10 in pulmonary tuberculosis. *Diagn Microbiol Infect Dis.* 59, 295–302.
- 32) Bethunaickan R, Baulard AR, Locht C, **Raja A** (2007). Antibody response in pulmonary tuberculosis against recombinant 27kDa (MPT51, Rv3803c) protein of *Mycobacterium tuberculosis*. *Scand J Infect Dis.* 30,1-8

C. Book Chapter

NIL

D. Ongoing Research Support

- 1) “Interferon gamma assay for latent TB in HIV infection” - funded by RO3 Grant of NIAID, NIH, USA.
- 2) “Development and clinical evaluation of fast tests for tuberculosis diagnosis” – Joint Collaborative Project funded by European Commission.