

## PROFILE OF Dr.P. SELVARAJ

1. Name : Dr. P. SELVARAJ
2. Designation : Scientist ' E '
3. Date of Birth : 3<sup>rd</sup> April, 1953
4. Date of joining : 19<sup>th</sup> October, 1984
5. Date of joining present post : 6<sup>th</sup> March, 2006
6. Discipline : Immunology
7. Address (Off) : Dept. of Immunology  
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ii) paramasivam.selvaraj@gmail.com
12. Educational Qualifications : Ph.D. Immunology (1983)  
M.Sc., Zoology (1977)
13. Research Experience : Research Experience in Immunology and Immunogenetics  
from- 1978 – to date –33 years
- 13.1. Research Interests:
  - i) Host Genetic susceptibility to Tuberculosis, HIV and HIV-TB.
  - ii) Immunology and Immunogenetics of Tuberculosis.



- 13.2. Current Research Activities:
- i) Effect of vitamin D3 on innate and adaptive Immunity in pulmonary tuberculosis.
  - ii) Regulatory role of variant genotypes of Vitamin-D receptor gene on immune functions in pulmonary tuberculosis.
  - iii) Chemokine gene polymorphisms and Chemokine levels in pulmonary tuberculosis.
- 13.3. Recognised Guide/Supervisor for: Produced Eight Ph.Ds  
PH. D Students : Three Ph.D Students are working currently.
14. Membership in special Committees:
- i) Life Member of Indian Immunology Society.
  - ii) Executive Council Member, Indian Society for Histocompatibility and Immunogenetics, New Delhi.
15. Workshops/Conferences/Symposiums : Attended several
16. Awards : R.C. Garg Memorial Award for the best article published in the Indian Journal of Tuberculosis in 1999.
17. Visits abroad
- i. 26<sup>th</sup> October, 1988 to October, 1989 – LONDON, UK – 1 year Training in Molecular Biology of HLA Expression – BRITISH ODA PROGRAMME – At the Laboratory of Dr.D.B. LOWRIE / Dr.M.J. COLSTON, Division of Mycobacterial Diseases, National Institute of Medical Research, Mill Hill, London.
  - ii. 28<sup>th</sup> November, 1996 to May, 1997 – OXFORD, UK – 6 months Training in Non-MHC gene polymorphism studies in tuberculosis – BRITISH ODA PROGRAMME – At the Laboratory of Prof. Adrian V.S. Hill, Wellcome Trust Centre for Human Genetics, Oxford, UK.
  - iii) 2<sup>nd</sup> October,2005 to December,2005- National Institute of Health , Bethesda, USA-(three months)- visiting Scientist to establish collaboration with Dr. Steven M. Holland, Chief, Laboratory of Clinical Infectious Diseases,NIAID/NIH,USA.

## LIST OF SELECTED PUBLICATIONS:

1. Manickasundari, M.; **Selvaraj, P.**; Pitchappan, RM.  
Studies on T-cells of the lizard, *Calotes versicolor*: Adherent and non-adherent population of the spleen.  
Developmental and Comparative Immunology, 1984; 8; 367-374.
2. **P Selvaraj**; RM Pitchappan.  
Effect of oestradiol dipropionate on the immune system of the pigeon, *Columba livia*.  
Developmental and Comparative Immunology, 1985; 9; 669-677.
3. **Selvaraj, P.**; Rajiswamy; Vijayan, V.K.;Prabhakar, R.; Narayanan, P.R.  
Hydrogen peroxide producing potential of alveolar macrophages and blood monocytes in pulmonary tuberculosis.  
Indian J Med Res, 1988; 88; 124-129.
4. **Selvaraj, P.**; Rajiswamy; Vijayan, V.K.; Prabhakar, R.; Narayanan, P.R.  
Hydrogen peroxide release by OKIa1 (anti DR-monoclonal antibody) resistant alveolar macrophages in tuberculosis.Indian J Chest Dis & All Sci., 1989; 31; 141-149.
5. **P. Selvaraj**; Pitchappan, R.M.  
Post-hatching development of the immune system of the pigeon, *columba livia*.  
Developmental and Comparative Immunology, 1988; 12; 879-884.
6. **P. Selvaraj**; N. Venkataprasad; V.K. Vijayan; P.R. Narayanan.  
Altered bactericidal activity against *Staphylococcus aureus* in tuberculous bronchoalveolar lavage fluids. Eur Respir J, 1994; 7; 121-128.
7. **P. Selvaraj**; N. Venkataprasad; V.K. Vijayan; R. Prabhakar; P.R. Narayanan.  
Procoagulant activity of bronchoalveolar lavage fluids taken from the site of tuberculous lesions. Eur.Respir.J., 1994; 7; 1227-1232.
8. V.S. Subramanian; P. **Selvaraj**; P.R. Narayanan; R. Prabhakar ;C. Damodaran.  
Distribution of HLA (Class I and Class II) antigens in the native Dravidian Hindus of Tamil Nadu, South India. Gene Geography, 1995; 9; 15-24.
9. **P. Selvaraj**; A.M. Reetha; H. Uma, T. Xavier; B. Janardhanam; R. Prabhakar, P.R. Narayanan. Influence of HLA-DR and –DQ phenotypes on tuberculin reactive status in pulmonary tuberculosis patients. Tubercle and Lung Disease, 1996; 77; 369-373.
10. **P. Selvaraj**; M. Kannapiran; A.M. Reetha; H. Uma; T. Xavier; P.R. Narayanan.  
HLA-DR2 phenotype and plasma lysozyme,  $\beta$ -glucuronidase and acid phosphatase levels in pulmonary tuberculosis.Int J Tuberc Lung Dis, 1997; 1; 265-269.

11. **P. Selvaraj**; H. Uma; A.M. Reetha; S.M. Kurian; Theresa Xavier; R. Prabhakar; P.R. Narayanan. HLA antigen profile in pulmonary tuberculosis patients and their spouses. *Indian J Med Res*, 1998; 107; 155-158.
12. **P. Selvaraj**; H. Uma; A.M. Reetha; Theresa Xavier; R. Prabhakar and P.R. Narayanan. Influence of HLA-DR2 phenotype on humoral immunity and lymphocyte response to *Mycobacterium tuberculosis* culture filtrate antigens in pulmonary tuberculosis. *Indian J Med Res*, 1998; 107; 208-217.
13. H. Uma; **P. Selvaraj**; A.M. Reetha; Theresa Xavier; R. Prabhakar; P.R. Narayanan. Antibody and lymphocyte responses to *Mycobacterium tuberculosis* culture filtrate antigens in active and quiescent (cured) pulmonary tuberculosis. *Indian J Tub*, 1999; 46, 21-28.
14. H. Uma; **P. Selvaraj**; A.M. Reetha; T. Xavier; R. Prabhakar, P.R. Narayanan. Influence of HLA-DR antigens on lymphocyte response to *Mycobacterium tuberculosis* culture filtrate antigens and mitogens in pulmonary tuberculosis. *Tubercle and Lung Disease*; 1999; 79; 199-206.
15. **P. Selvaraj**; P.R. Narayanan; A.M. Reetha. Association of functional mutant homozygotes of the mannose binding protein gene with susceptibility to pulmonary tuberculosis in India. *Tubercle and Lung Disease*, 1999; 79; 221-227.
16. **P. Selvaraj**; P.R. Narayanan; A.M. Reetha. Association of vitamin D receptor genotypes with the susceptibility to pulmonary tuberculosis in female patients and resistance in female contacts. *Indian J Med Res*, 2000; 111; 172-179.
17. **P. Selvaraj**; S.M. Kurian; H. Uma; A.M. Reetha; P.R. Narayanan. Influence of non-MHC genes on lymphocyte response to *Mycobacterium tuberculosis* antigens and tuberculin reactive status in pulmonary tuberculosis. *Indian J Med Res*, 2000; 112; 86-92.
18. **Selvaraj, P.**; Kannapiran, M.; Sunil Mathan Kurian; Narayanan, P.R. Effect of plasma lysozyme on live *Mycobacterium tuberculosis*. *Current Science*; 2001; 81; 201-203.
19. Uma Sriram; **Selvaraj, P.**; Kurian, S.M.; Reetha, A.M.; Narayanan, P.R. HLA-DR2 subtypes and immune responses in pulmonary tuberculosis. *Indian J Med Res*; 2001; 113; 117-124.

20. **Selvaraj, P.**; Sriram, U.; Mathan Kurian, S.; Reetha, A.M.; Narayanan,P.R. Tumour necrosis factor alpha (-238 and -308) and beta gene polymorphisms in pulmonary tuberculosis : haplotype analysis with HLA-A, B and DR genes. *Tuberculosis*; 2001; 81; 335-341.
21. **Selvaraj, P.**; Sriram, U.; Mathan Kurian, S.; Reetha, A.M.; Narayanan, P.R. NRAMP1 gene polymorphisms in pulmonary and spinal tuberculosis. *Current Science*; 2002; 82; 451-454.
22. **Selvaraj, P.**; Chandra, G.; Sunil Mathan Kurian; Reetha, A.M.; Narayanan, P.R. Association of vitamin D receptor gene variants of *BsmI*, *ApaI* and *FokI* polymorphisms with susceptibility or resistance to pulmonary tuberculosis. *Current Science*; 2003; 84; 1564-1568.
23. **Selvaraj, P.**; Kurian, S.M.; Chandra, G.; Reetha, A.M.;Charles, N., Narayanan,P.R. Vitamin D receptor gene variants of *BsmI*, *ApaI*, *TaqI* and *FokI* polymorphisms in spinal tuberculosis.Letter to Editor –*Clinical Genetics*,2004; 65; 73-76.
24. Chandra, G.; **Selvaraj, P.**; Jawahar, M.S.; Banurekha, V.V.; Narayanan, P.R. Effect of vitamin D<sub>3</sub> on phagocytic potential of macrophages with live *Mycobacterium tuberculosis* and lymphoproliferative response in pulmonary tuberculosis. *Journal of Clinical Immunology*, 2004; 24; 249-257.
25. **Selvaraj,P.**;Chandra,G.;Jawahar,M.S.;Vidyarani,M.;NishaRajeswari,D.; and Narayanan, P.R. Regulatory role of vitamin D receptor gene variants of *BsmI*, *ApaI*, *TaqI*,and *FokI* polymorphisms on macrophage phagocytosis and lymphoproloferative response to *Mycobacterium tuberculosis* antigen in Pulmonary tuberculosis . *Journal of Clinical Immunology*,2004;24;523
26. **Selvaraj P.**, Jawahar M.S, Rajeswari D.N, Alagarasu K, Vidyarani M, Narayanan P.R. Role of mannose binding lectin gene variants on its protein levels and macrophage phagocytosis with live *Mycobacterium tuberculosis* in pulmonary tuberculosis. *FEMS Immunol Med Microbiol*,2006,46:433-437.
27. **Selvaraj P.**, Prabhu Anand S, Jawahar M S, Chandra G, Banurekha B, and Narayanan P.R. Promoter polymorphism of IL-8 gene and IL-8 production in pulmonary tuberculosis. *Current Science* 2006,90;952- 954.
28. Nisha Rajeswari D, **Selvaraj P.**, Jawahar MS,Adhilakshmi AR, Vidyarani M, Narayanan PR. Elevated percentage of perforin positive cells in active pulmonary tuberculosis. *Indian J Med Res* 2006,123;687-690.

29. Vidyarani M, **Selvaraj P**, Prabhu Anand S, Jawahar MS, Adhilakshimi AR, Narayanan PR. Interferon gamma (IFN $\gamma$ ) & interleukin-4 (IL-4) gene variants & cytokine levels in pulmonary tuberculosis. *Indian J Med Res* 2006;124:403 – 410.
30. **Selvaraj P**, Swaminathan S, Alagarasu K, Raghavan S, Narendran G, Narayanan PR. Association of Human Leukocyte antigen-A11 with resistance and- B40 and -DR2 with susceptibility to HIV-1 infection in south India. *J Acquir Immune Defic Syndr* ,2006; 43:497-499.
31. Harishankar M, **Selvaraj P**, Rajeswari DN, Anand SP, Narayanan PR. Promoter polymorphism of IL-18 gene in pulmonary tuberculosis in South Indian population. *Int J Immunogenet*,2007; 34:317-20.
32. Rajeswari DN, **Selvaraj P**, Raghavan S, Jawahar MS, Narayanan PR. Influence of HLA-DR2 on perforin-positive cells in pulmonary tuberculosis. *Int J Immunogenet*, 2007; 34:379-84.
33. Vidyarani M, **Selvaraj P**, Jawahar MS, Narayanan PR. Intracellular granzyme A expression of peripheral blood lymphocyte subsets in pulmonary tuberculosis. *Current Science*, 2007; 93: 823-825.
34. Prabhu Anand S, **Selvaraj P**, Jawahar MS, Rajeswari DN, Anbalagan S, Narayanan PR. Interleukin-12B & interleukin-10 gene polymorphisms in pulmonary tuberculosis. *Indian J Med Res*, 2007; 126:135-138.
35. **Selvaraj P**, Nisha Rajeswari D, Jawahar MS, Narayanan PR. Influence of HLA-DRB1 alleles on Th1 and Th2 cytokine response to *Mycobacterium tuberculosis* antigens in pulmonary tuberculosis. *Tuberculosis (Edinb)*, 2007; 87:544-550.
36. Alagarasu K, **Selvaraj P**, Swaminathan S, Raghavan S, Narendran G, Narayanan PR. Mannose binding lectin gene variants and susceptibility to tuberculosis in HIV-1 infected patients of South India. *Tuberculosis (Edinb)*, 2007; 87:535-543.
37. Vidyarani M, **Selvaraj P**, Jawahar MS, Narayanan PR. 1,25 Dihydroxyvitamin D3 modulated cytokine response in pulmonary tuberculosis. *Cytokine*, 2007; 40:128-34
38. **Selvaraj P**, Vidyarani M, Alagarasu K, Prabhu Anand S, Narayanan PR. Regulatory role of promoter and 3' UTR variants of vitamin D receptor gene on cytokine response in pulmonary tuberculosis. *J Clin Immunol* 2008; 28(4): 306-13.
39. **Selvaraj P**, Alagarasu K, Harishankar M, Vidyarani M, Narayanan PR. Regulatory region polymorphisms of vitamin D receptor gene in pulmonary tuberculosis patients and normal healthy subjects of south India. *Int J Immunogenet* 2008; 35(3): 251-4.

40. **Selvaraj P**, Alagarasu K, Harishankar M, Vidyarani M, Nisha Rajeswari D, Narayanan PR. Cytokine gene polymorphisms and cytokine levels in pulmonary tuberculosis. *Cytokine* 2008; 43(1): 26-33.
41. **Selvaraj P**, Raghavan S, Swaminathan S, Alagarasu K, Narendran G, Narayanan PR. HLA-DQB1 and -DPB1 allele profile in HIV infected patients with and without pulmonary tuberculosis of south India. *Infect Genet Evol* 2008; 8(5): 664-71.
42. Prabhu Anand S, **Selvaraj P**, Narayanan PR. Effect of 1,25 dihydroxyvitamin D(3) on intracellular IFN-gamma and TNF-alpha positive T cell subsets in pulmonary tuberculosis. *Cytokine* 2009: 45(2); 105-110.
43. Vidyarani M, **Selvaraj P**, Raghavan S, Narayanan PR. Regulatory role of 1, 25-dihydroxyvitamin D(3) and vitamin D receptor gene variants on intracellular granzyme A expression in pulmonary tuberculosis. *Exp Mol Pathol* 2009: 86; 69-73.
44. **Selvaraj P**, Alagarasu K, Swaminathan S, Harishankar M, Narendran G. CD209 gene polymorphisms in south Indian HIV and HIV-TB patients. *Infect.Genet.Evol* 2009;9;256-262.
45. Alagarsu K, **Selvaraj P**, Swaminathan S, Narendran G, Narayanan P.R. 5' Regulatory and 3' Untranslated region polymorphisms of Vitamin d Receptor gene in south Indian HIV and HIV-TB patients. *J Clin Immunol* 2009: 29;196-204.
46. Raghavan S, **Selvaraj P**, Swaminathan S, Alagarasu K, Narendran G, Narayanan P.R. Haplotype analysis of HLA-A,-B antigens and -DRB1 alleles in south Indian HIV-1 infected patients with and without pulmonary tuberculosis. *Int J Immunogenet* 2009;36;129-133.
47. **Selvaraj P**, Prabhu Anand S, Harishankar M, Alagarsu K. Plasma 1,25 Dihydroxy vitamin D3 level and expression of vitamin D receptor and cathelicidin in pulmonary tuberculosis. *J Clin Immunol*. 2009;29;470-478.
48. Prabhu Anand S, **Selvaraj P**. Effect of 1,25 dihydroxy vitamin D3 on matrix metalloproteinases MMP-7, MMP-9 and the inhibitor TIMP-1 in pulmonary tuberculosis. *Clin Immunol*.2009. *Clin.Immunol*.133:126-131.
49. Raghavan S, **Selvaraj P**, Swaminathan S and Narendran G. Short Communication: Association of HLA-A\*1101 with resistance and B\*4006 with susceptibility to HIV and HIV-TB: An *in silico* analysis of promiscuous T cell epitopes. *.AIDS Research and Human Retroviruses*. 2009.25:1023-1028.

50. Alagarasu K, **Selvaraj P**, Swaminathan S, Raghavan S, Narendran G & Narayanan P.R. CCR2,MCP-1,SDF-1& DC-SIGN gene polymorphisms in HIV-1 infected patients with & without tuberculosis. Indian J Med Res 2009. 130:444-450.

51. Prabhu Anand S, Harishankar M, **Selvaraj P**. Interferon gamma gene +874 A/T polymorphism and intracellular interferon gamma expression in pulmonary tuberculosis. Cytokine. 2010.49:130-133.

52. **P. Selvaraj**, M. Harishankar, Brijendra Singh, M.S. Jawahar, V.V. Banurekha. Toll-like receptor and TIRAP gene polymorphisms in pulmonary tuberculosis patients of South India. Tuberculosis 2010 90 ;306-310.

53. **P. Selvaraj**, K. Alagarasu, B. Singh & K. Afsal CCL5 (RANTES) gene polymorphisms in pulmonary tuberculosis patients of south India. International Journal of Immunogenetics 38, 397–402

#### **Reviews:**

54. Yim J J and **Selvaraj P**. Genetic susceptibility in tuberculosis. Respirology, 2010,15:241-256.

55. S. Raghavan , K. Alagarasu , **P. Selvaraj**. Immunogenetics of HIV and HIV associated tuberculosis. Tuberculosis, 2011, (published Online)

#### **Article published in Book :**

56. S. Prabhu Anand and **P. Selvaraj**. [Chapter 3 - Vitamin D3 and Immunity to Tuberculosis pp. 89-104](#). 2010. In Vitamin D: Nutrition, Side Effects and Supplements. (E-Book)

Edited by: Stephanie R. Malone. Nova Science Publishers, Inc.

57. **P.Selvaraj**. [Chapter 13 - Vitamin D, Vitamin D Receptor, and Cathelicidin in the treatment of Tuberculosis](#), 2011. In Vitamins and Hormones, Volume 86.pp.308-325. Edited by: Gerald Litwack. Elsevier,Inc. Academic Press.