

CURRICULUM VITAE



Name: Dr. A.R. Anand

Designation: Senior Associate Professor and Microbiologist

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Professional Experience

Microbiologist with extensive expertise in diagnostics and research in infectious disease.

Ph.D. from Sankara Nethralaya with thesis on the molecular diagnosis of infectious endophthalmitis, a devastating eye infection.

Postdoctoral fellow at Harvard Medical School, and junior faculty at Ohio State University with several research studies on analyzing host-pathogen interactions in various infectious diseases including Gram-negative sepsis, HIV and HCV infections.

Current Academic and Administrative responsibilities

- Programme co-ordinator, Vidyasagar Institute of Biomedical Sciences (July 2020 – present)
- Infection control officer, Hospital Infection Control committee, MRF, Sankara Nethralaya (July 2020-present)
- Member, Hospital safety committee, MRF, Sankara Nethralaya (March 2021- present)
- Member, Pharmaco Therapeutic Committee, MRF, Sankara Nethralaya (September 2018-present)
- Board of studies member, The Sankara Nethralaya Academy Medical Laboratory Technology programme BSc and MSc (2020- present)
- University External and Internal examiner – BSc MLT, BSc.Microbiology, MScMLT -The Tamil Nadu Dr.

MGR Medical University practical examination. (2019- present)

- Judge- Swarnalatha Punshi award for research in basic sciences, Sankara Nethralaya (2020,2021,2022)

Current Teaching responsibilities

BSc MLT- IIIyr - Advanced immunology, virology and Mycology

MSc MLT – Iyr – General Bacteriology, Immunology and Parasitology

MSc MLT – IIyr- Bacteriology, Virology and Mycology

M.Optomety – Immunology and Microbiology (under SASTRA Deemed University)

Ophthalmology post-graduates – Basics of Ocular Microbiology, Hospital Infection control orientation ,
Ocular Microbiology FAQs;

Education

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| 2001 | Ph.D. in Microbiology, Sankara Nethralaya, The Tamil Nadu Dr. MGR Medical University, Chennai, India (Thesis Title: <i>Evaluation of molecular techniques in the diagnosis of infectious endophthalmitis</i>) |
| 1994 | M.Sc. (Medical Microbiology), Kasturba Medical College, Mangalore University, India |
| 1991 | B.Sc. (Microbiology), St. Josephs College of Arts & Science, Bangalore University, Bangalore, India |

Postdoctoral Training

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| 2001-2002 | Postdoctoral Research Fellow, Jules Stein Eye Institute, University of California at Los Angeles (UCLA), CA, USA |
| 2002-2007 | Postdoctoral Research Fellow, Harvard Medical School (Beth Israel Deaconess Medical Center), Boston, MA, USA |

Academic Appointments

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| 2007-2010 | Instructor (faculty position), Department of Pathology, College of Medicine, Ohio State University Wexner Medical Center, Columbus, OH, USA |
| 2010-2013 | Assistant Professor (Research Track), Department of Pathology, College of Medicine, Ohio State University Wexner Medical Center, Columbus, OH, USA |
| 2013- 2015 | Senior Assistant Professor, School of Chemical and Biotechnology, SASTRA University, Thanjavur, Tamil Nadu |
| 2015-2018 | Scientist D & DBT-Ramalingaswami fellow, National Institute for Research in Tuberculosis (NIRT), Chennai |
| 2018- 2020 | Senior Associate Professor, L & T Microbiology Research Centre, Vision Research Foundation, Sankara Nethralaya, Chennai |
| 2020-present | Senior Associate Professor and Microbiologist, Department of Microbiology, Medical Research Foundation, Sankara Nethralaya, Chennai |

Professional Memberships

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| 1999- present | Indian Association of Medical Microbiologists (Life member) |
| 2007-2011 | American Society of Virology |
| 2022-2023 | American Society for Microbiology |

Other Professional Activities

Editorial Boards: Frontiers in Cellular and Infection Microbiology (Review editor) (2022-present);
Indian Journal of Ophthalmology (Aug 2023 – present)

Referee for journals Blood (2004-2012), International Immunology (2010-2012), Immunology and Cell Biology (2012), Inflammation (2011-present), diabetology and metabolic syndrome (2016), Ocular Immunology and Inflammation (2022-), Frontiers in Cellular and Infection Microbiology (2022-), BMC Ophthalmology (2022-), American Journal of Tropical Hygiene and Medicine (2022), International Journal of Infectious Diseases (2022), Indian Journal of Medical Microbiology (2022-present), Indian Journal of Ophthalmology (2022-present)

Honors

- DBT-Ramalingaswami re-entry fellowship from the Dept. of Biotechnology, Government of India (2014)
- Swarnalata Punshi Award (awarded to the best Research Fellow of the year), Medical Research Foundation, Sankara Nethralaya, Chennai, India (2001)
- Best Poster Award XXV National Congress of Indian Association of Medical Microbiologists (IAMM), Chandigarh, India (1999)
- CCLRU Travel Fellowships, Indian Eye Research Group Meeting- Years-1997, 1999 and 2000
- Junior/Senior Research Fellowship, University Grants Commission, India (1995-2000) by qualifying the National Eligibility Test (NET) for JRF/ Lectureship
- Best patient safety initiative: Hospital safety week : 2021-2022

List of publications Total: 53

1. Narayanan N, Bhandodkar N, **Anand AR**. First report of a ring corneal ulcer caused by *Cladophium bulbiliosum* posing a diagnostic debacle: A case report. Indian Journal of Ophthalmology-Case Reports. 2023 Jul 1;3(3):663-7.
2. Mohan S, Kandle K, Ganesan S, Prakash VJ, Mistry S, **Anand AR**, Biswas J. Endogenous fungal endophthalmitis following COVID-19 infection with microbiological and molecular biological correlation—A report of two cases. Indian Journal of Ophthalmology. 2023 May 1;71(5):2272-5.
3. **Anand AR**, Baskaran S. Microbiological work up in infective keratitis—The microbiologist's view. Journal of Cornea and Ocular Surface. 2023 Jan 1;1(1):55-60. (Review)
4. Agarwal S, Srinivasan B, Iyer G, Dhiman R, Agarwal M, Pandey S, Surya J, **Anand AR**, Team SN. Comparative outcome of *Aspergillus* versus *Fusarium* keratitis in relation to clinical presentation. Journal of Cornea and Ocular Surface. 2023 Jan 1;1(1):20-4.
5. Lakshmi D, **Anand AR**, Maharajan HRP, Anand RM, Thangam A, Santharaj RK. Molecular detection and identification of fungal pathogens infections occurring in COVID-19 recovered patients. *Virus Dis.* (2023). <https://doi.org/10.1007/s13337-022-00805-8>
6. Janani MK, Agarwal S, Rajagopal R, Dhanurekha L, **Anand AR**, Therese KL, Madhavan HN. Polymerase chain reaction for the detection of viruses in Pterygia. Indian Journal of Ophthalmology. 71(2):p 458-463, February 2023. (IF: 2.9)
7. Jeyalatha VM, Vetrivel U, Harinee R, Lakshmi D, Ganesan S, Biswas J, **Anand AR*** Draft Genome Sequence of a *Mycobacterium tuberculosis* strain SNMICRO 2047-20 isolated from intraocular infection. Microbiol Resour Announc. 2022 Dec 21:e0079122. (IF:0.8)

8. Sharma R, Rajagopalan H, Klausen M, Jeyalatha MV, Üçüncü M, Venkateswaran S, **Anand AR*** (**co-corresponding author**), Bradley M. Rapid detection of major Gram-positive pathogens in ocular specimens using a novel fluorescent vancomycin-based probe. *Sensors & Diagnostics*. 2022.
9. **Anand AR***, Harinee R, Jeyalatha MV, Poonam NS, Therese KL, Rajeshwari H, Narasimhan L, Gopinath R. Microbiological profile of canaliculitis and their antibiotic susceptibility patterns: A 11-year review at a referral eye care centre. *Indian Journal of Medical Microbiology*. 2022 Jun 9. (IF: 0.9)
10. Sheerin AA, **Anand AR**, Mukherjee B. Kocuria rhizophila dacryocystitis: Report of a rare causative organism in a common clinical condition. *TNOA Journal of Ophthalmic Science and Research*. 2022 Jan 1;60(1):57.
11. Jeyalatha MV, Therese KL, **Anand AR**. An Update on the Laboratory Diagnosis of Neuromyelitis Optica Spectrum Disorders. *J Clin Neurol*. 2022 Mar;18(2):152-162. (IF: 3)
12. Agarwal S, Pandey S, Srinivasan B, **Anand AR**, Iyer G. Possible Synergistic Role of Cryo-Alcohol Therapy in Infectious Scleritis—Scope and Rationale for Expanding Indications and Review of the Literature. *Cornea*. 2022 Mar 5. (IF: 3.1)
13. Dhiman R, Agarwal S, **Anand AR**, Lakshmipathy D, Srinivasan B, Iyer G. Coexistence of Fungal Keratitis in Bilateral Sequential Microsporidial Keratitis—A Rare Case Presentation. *Ocular Immunology and Inflammation*. 2022 Feb 1:1-3. (IF: 3)
14. Gondhale H, Jaichandran VV, Jambulingam M, **Anand AR**, Srinivasan S, Raman R, Sharma T. Distribution and risk factors of postoperative endophthalmitis in people with diabetes. *Indian J Ophthalmol*. 2021 Nov;69(11):3329-3334. doi: 10.4103 (IF: 2.9)
15. Das T, Agarwal M, **Anand AR**, Behera UC, Bhende M, Das AV, Dasgupta D, Dave VP, Gandhi J, Gunasekaran R, Joseph J. Fungal endophthalmitis: Analysis of 730 consecutive eyes from seven tertiary eye care centers in India. *Ophthalmology Retina*. 2021 Sep 20. (IF: 3)
16. **Anand AR**, Biswas J. TB or NTM: Can a new multiplex PCR assay be the answer? *EBioMedicine*. 2021 Aug 26;71:103552. doi: 10.1016/j.ebiom.2021.103552. (IF: 11)
17. M Agarwal, **AR Anand**, M Lakshmipathy. Corneal ring infiltrate in fungal keratitis *Indian Journal of Ophthalmology-Case Reports* 2021; 1 (3), 391
18. A Nag, A Verma, **AR Anand** Acute endophthalmitis caused by Ochrobactrum anthropi following cataract surgery in an immunocompetent patient—A case report. *Indian Journal of Ophthalmology-Case Reports* 2021; 1 (3), 554
19. Agarwal M, Patnaik G, Agarwal S, Iyer G, **Anand AR**, Ar G, Biswas J, Zierhut M. Tuberculous Scleritis and Multidrug Resistance. *Ocul Immunol Inflamm*. 2021 Jan 8:1-10. (IF: 3)
20. Nair N, Sudharshan S, **Anand AR**, Biswas J, Therese KL. Utility of Treponemal Testing from Aqueous Fluid in the Diagnosis of Ocular Syphilis in Patients with HIV/AIDS. *Ocul Immunol Inflamm*.(2020) Oct 5:1-7. (IF: 3)
21. Agarwal M, Patnaik G, Sanghvi K, **Anand AR**, Janani MK, Biswas J. Clinicopathological, Microbiological and Polymerase Chain Reaction Study in a Case of Nocardia Scleritis. *Ocul Immunol Inflamm*. (2020) Jul 7:1-5. doi: 10.1080/09273948.2020.1770299. (IF: 3)
22. Suganeswari G, Shah D, **Anand AR**. Intravitreal piperacillin-tazobactam in endophthalmitis caused by *Mycobacterium abscessus* in silicone filled eye: A case report. *Indian J Ophthalmol*. (2020) Jul;68(7):1471-1473. (IF: 2.9)
23. **Anand AR**, Rachel G, Parthasarathy D. HIV proteins and endothelial dysfunction: implications in cardiovascular disease. *Frontiers in cardiovascular medicine*. (2018) 5:185. (IF: 5.8)
24. Ramana LN, **Anand AR**, Sethuraman S, Krishnan UM. Targeting strategies for delivery of anti-HIV drugs. *J Control Release*.(2014) 192:271-83. (IF: 11.4)

25. Zhao H, Anand AR, Ganju RK. Slit2-Robo4 Pathway Modulates Lipopolysaccharide-Induced Endothelial Inflammation and Its Expression Is Dysregulated during Endotoxemia. *Journal of Immunology*. (2014) Jan 1;192(1):385-93.(IF: 5.4)
26. Anand AR, Helong Zhao, Nagaraja T, Robinson LA and Ganju RK. N-terminal Slit2 regulates HIV-1 replication in T-cells by modulating the actin cytoskeleton. *Retrovirology* (2013) 10:2 (7 January 2013). (IF: 4)
27. Nagaraja T, Chen L, Balasubramanian A, Groopman JE, Brigstock D, Anand AR (**co-corresponding author**), Ganju RK. Connective Tissue Growth Factor Mediates Transforming Growth Factor β -Induced Fibrosis in Hepatitis C Virus-Infected Hepatocytes. *PLoS ONE* (2012) 7(10):e46526. Epub 2012 Oct 4. (IF: 3.2)
28. Nagaraja T, Anand AR (**co-first author**), Zhao H, and Ganju RK. The adaptor protein SLP-76 regulates HIV-1 release and cell to cell transmission in T-cells. *Journal of Immunology* (2012) 188(6):2769-77.(IF: 5.4)
29. Anand AR, Nagaraja T, and Ganju RK. A novel role for Slit2/Robo1 axis in modulating HIV-1 replication in T-cells. *AIDS* (2011) 13;25(17):2105-11. (IF: 4.1)
30. Anand AR, Prasad A, Bradley RR, Deol YS, Nagaraja T, Ren X, Terwilliger EF, Ganju RK. HIV-1 gp120-induced migration of dendritic cells is regulated by a novel kinase cascade involving Pyk2, p38 MAP kinase and LSP1. *Blood* (2009) 114(17):3588-600. (IF: 22.1)
31. Anand AR, Cucchiari M, Terwilliger EF, Ganju RK. The Tyrosine kinase, Pyk2 mediates LPS-induced IL-8 Expression in Human Endothelial Cells. *Journal of Immunology* (2008) 180(8):5636-44.(IF: 5.4)
32. Anand AR, Bradley R, Ganju RK. LPS-induced MCP-1 expression in human microvascular endothelial cells is mediated by the tyrosine kinase, Pyk2 via the p38 MAPK/NF-kappaB-dependent pathway. *Molecular Immunology* (2009) 46(5):962-8. (IF: 4.4)
33. Lane HC, Anand AR, Ganju RK Cbl and Akt regulate CXCL8-induced and CXCR1- and CXCR2-mediated chemotaxis. *International Immunology* (2006) 18(8):1315-25. (IF: 4.8)
34. Kuehne JJ, Yu AL, Holland GN, Anand AR (Ramaswamy A), Taban R, Mondino BJ, Yu F, Rayner SA, Giese MJ. Corneal pharmacokinetics of topically applied azithromycin and clarithromycin. *American Journal of Ophthalmology* (2004) 138(4): 547-53. (IF:5.2)
35. Anand AR, Ganju RK. HIV-1 gp120-mediated Apoptosis of T Cells Is Regulated by the Membrane Tyrosine Phosphatase CD45. (2006) *Journal of Biological Chemistry* 281(18): 12289-99. (IF: 5.1)
36. Wang JF, Liu ZY, Anand AR, Zhang X, Brown LF, Dezube BJ, Gill P, Ganju RK. Alpha-chemokine-mediated signal transduction in human Kaposi's sarcoma spindle cells. *Biochim Biophys Acta. Molecular cell research* (2004) 691(2-3): 129-39. (IF: 4.6)
37. Gopal L, Anand AR (Ramaswamy AA), Madhavan HN, Battu RR, Sharma T, Shanmugam MP, Bhende PS, Bhende M, Ratra D, Shetty NS, Rao MK. Endophthalmitis caused by Acinetobacter calcoaceticus. A profile. *Indian Journal of Ophthalmology* (2003) 51(4): 335-40. (IF: 2.9)
38. Anand AR, Madhavan HN, Sudha NV, Therese KL. Polymerase chain reaction in the diagnosis of Aspergillus endophthalmitis. *Indian Journal of Medical Research* (2001) 114:133-40. (IF: 2.3)
39. Fogla R, Rao SK, Anand AR, Madhavan HN. Insect wing case: unusual foreign body. *Cornea* (2001) 20: 119-121. (IF: 3.1)
40. Anand AR, Madhavan HN, Neelam V, Therese KL. Use of polymerase chain reaction in the diagnosis of fungal endophthalmitis. *Ophthalmology* (2001) 108: 326-330. (IF: 12)
41. Pasricha G, Anand AR, Therese KL, Madhavan HN. Use of Polymerase chain reaction (PCR)- Restriction Fragment Length Polymorphism to trace the source of Alcaligenes xylosoxidans containing ocular clinical specimens. *Indian Journal of Applied Microbiology*. (2001) 1: 1 (41-45).
42. Samanta TK, Biswas J, Gopal L, Anand AR, Kumarasamy N, Solomon S. Panophthalmitis due to Rhizopus in an AIDS Patient-A Clinicopathological study. *Indian Journal of Ophthalmology* (2001) 49:49-51. (IF: 2.9)
43. Anand AR, Madhavan HN, Therese KL. Use of polymerase chain reaction (PCR) and DNA probe hybridization to determine the Gram reaction of the infecting bacterium in intraocular fluids of patients with endophthalmitis. *Journal of Infection* (2000) 41: 221-226. (IF: 6.07)

44. Anand AR, Therese KL, Madhavan HN. Spectrum of etiological agents of postoperative endophthalmitis and antibiotic susceptibility of the bacterial isolates. *Indian Journal of Ophthalmology* (2000) 48: 123-128. (IF: 2.9)
45. Gopal L, Anand AR (Ramaswamy AA), Madhavan HN, Saswade M, Battu RR. Postoperative endophthalmitis caused by sequestered Acinetobacter calcoaceticus. *American Journal of Ophthalmology* (2000) 129: 388-390. (IF: 5.2)
46. Anand AR (Ramaswamy AA), Biswas J, Bhaskar V, Gopal L, Rajagopal R, Madhavan HN. Postoperative Mycobacterium chelonae endophthalmitis after extracapsular cataract extraction and posterior chamber intraocular lens implantation. *Ophthalmology* (2000) 107: 1283-1286. (IF:12)
47. Madhavan HN, Anand AR, Therese KL. Infectious endophthalmitis (Review article) *Indian Journal of Medical Microbiology* (1999) 17:108-115. (IF: 0.98)
48. Madhavan HN, Priya K, Anand AR, Therese KL. Detection of Herpes simplex virus (HSV) genome using polymerase chain reaction (PCR) in clinical samples- Comparison of PCR with standard laboratory methods for the detection of HSV. *Journal of Clinical Virology* (1999) 14: 145-151. (IF:3.1)
49. Therese KL, Anand AR, Madhavan HN. Polymerase chain reaction in the diagnosis of bacterial endophthalmitis. *British Journal of Ophthalmology* (1998) 82:1078-1082. (IF: 4.6)
50. Therese KL, Anand AR, Madhavan HN. Spectrum of bacterial and fungal agents isolated from patients with endogenous endophthalmitis. *Indian Journal of Medical Microbiology* (1997) 15: 187-190. (IF:0.98)
51. Patil SA, Gouri-Devi M, Anand AR, Vijaya N, Pratima N, Neelam K, Chandramukhi A. Significance of Mycobacterial Immune Complexes [IgG] in the Diagnosis of Tuberculous Meningitis. *Tubercle and Lung Disease* (1996) 77: 164-167. (IF:3.4)
52. Shenoy S, Samaga M, Urs S, Anuradha KM, Kurian MM, Augustine A, Anand AR, Prasad A. Intravenous catheter related Candida rugosa fungaemia: Case Report. *Tropical Doctor* (1996) 26: 31. (IF:0.81)
53. Shalini S, Ganesh P, Anand AR. Actinobacillus actinomycetocomitans septicaemia during pregnancy (Letter) *International Journal of Gynecology and Obstetrics* (1995)51: 57 - 58. (IF-4.4)

Publications (Non-peer reviewed)

1. **Anand AR**, Biswas JB. Molecular diagnosis of Infectious uveitis: an Update. *All India Ophthalmological Society* (AIOS) Times. Issue 1, 2021 19-22.
2. **Anand AR**. Ten Microbiological Facts on Mucormycosis All Ophthalmologists Should Know. *E-Ophtha* online June 2021.
3. **Anand AR, Biswas JB**. Polymerase chain reaction (PCR) and newer investigative tools in endophthalmitis. *VRSI newsletter*. September 2023, p 07-15.

Nucleotide Sequences Submitted to Gene Bank (NCBI)

1. Anand,A.R., Vimalin,M., Dhanurekha,L., Umashankar,V. and Harinee,R. (2021) Mycobacterium tuberculosis strain SNMICRO 2047-20 688091-836050, whole genome shotgun sequence *GenBank* Accession no. JAHTBJ010000007
2. Vimalin,M.J., Umashankar,V., Lily,T.K., Saraswathi,B., Nathiya,R.,Durgadevi,P., Anand,A.R. and Madhavan,H.N. (2020) Brucella anthrophi strain M_3537_19, whole genome shotgun sequencing project *GenBank* Accession no.JAEPQV000000000