

Staff Handbook

Name	Dr. R. Vijayakumar		
Post	Associate Professor (Microbiology)		
Academic career	Initial academic appointment	Institution	Year
	Ph.D in Microbiology	Bharathidasan University, India	2009-2013
	Master of Science in Microbiology	Madurai Kamaraj University, India	2000-2002
	Bachelor of Science in Industrial Microbiology	Madurai Kamaraj University, India	1997-2000
Employment	Position	Employer	Period
	Assistant Professor	Majmaah University, Saudi Arabia	2014-2020
	Senior Microbiologist	Aravind Eye Hospital, India	2002-2008
Research and development projects over the last 5 years	<p>Name of project: Genetic underpinnings of stroke in Saudi Arabia: Development of high-throughput multiplex PCR- reverse hybridization assay for early diagnosis [IFP-2020-38] Period: 2020 – 2022. Amount of financing: 70,400 SAR; Funded by The deputyship for Research & Innovation, Ministry of Education in Saudi Arabia</p>		
Industry collaborations over the last 5 years	Nil		
Patents and proprietary rights	Nil		
Important publications over the last 5 years	<p>Total number of Publications : 29</p> <ol style="list-style-type: none"> Selvaraj C, Cho WC, Langeswaran K, Alothaim AS, Vijayakumar R. Artificial intelligence in cancer care: revolutionizing diagnosis, treatment, and precision medicine amid emerging challenges and future opportunities. <i>3 Biotech</i>. 2025;15(10):425. doi:10.1007/s13205-025-04351-4. Vijayakumar R. F.Alfaiz, Randa Ibrahim et al., Investigating the Effect of Plant Resin Fumes on Sandstorm Allergenic Fungi Isolated from Al Zulfi, Saudi Arabia. <i>Asian Journal of Pharmaceutics</i>. 2025;19(2). [Note: Specific page range or article number not yet available from the journal site]. Selvaraj C, Santhosh R, Alothaim AS, Vijayakumar R, Desai D, Safi SZ. Advances in cancer therapy: unveil the immunomodulatory protein involved in signaling pathways as molecular targets. <i>Chemical Papers</i>. 2025;Published online. doi:10.1007/s11696-025-03857-8. Selvaraj C, Vijayakumar R, Veeramuthu A. Structural-level insights into the functional proteins MMO and MDH from methanotrophic bacteria for their reaction mechanism. <i>Biomass and Bioenergy</i>. 2024;190:107413. doi:10.1016/j.biombioe.2024.107413. Alothaim AS, Alhoqail WA, Menakha M, Vijayakumar R. Combining molecular modelling and experimental approaches to gain mechanistic insights into the LuxP drug target in <i>Streptococcus pyogenes</i>. <i>Journal of</i> 		

	<p><i>Biomolecular Structure and Dynamics</i>. 2024;42(18):9494-9504. doi:10.1080/07391102.2023.2246599.</p> <p>6. Al Othaim A, Aloyuni S, Ismail A, Veluchamy A, Alshehri B, Abdelhadi A. R. Vijayakumar et al., Metallo-β-lactamases producing <i>Pseudomonas aeruginosa</i> and the molecular mechanism of drug resistance variants. <i>Journal of King Saud University - Science</i>. 2024;36(7):103399. doi:10.1016/j.jksus.2024.103399.</p> <p>7. Manikandan P, Aloyuni S, Al Othaim A, Ismail A, Veluchamy A, Alshehri B. R. Vijayakumar et al., Prevalence and antimicrobial mechanism of carbapenem-resistant <i>Klebsiella pneumoniae</i> and its molecular properties. <i>Journal of King Saud University - Science</i>. 2024;36(7):103284. doi:10.1016/j.jksus.2024.103284.</p> <p>8. Selvaraj C, Vijayalakshmi P, Alex AM, Alothaim AS, Vijayakumar R. Metalloproteins structural and functional insights into immunological patterns. In: Donev R, ed. <i>Advances in Protein Chemistry and Structural Biology</i>. Vol 140. Academic Press; 2024:67-86. doi:10.1016/bs.apcsb.2024.04.001.</p> <p>9. Selvaraj C, Safi SZ, Vijayakumar R. Circadian rhythms and cancer. <i>Advances in Protein Chemistry and Structural Biology</i>. 2023 ;137:135-159. DOI: 10.1016/bs.apcsb.2023.05.001. PMID: 37709373. (SCIE-Q2, Impact factor 5.4)</p> <p>10. Abdulaziz S. Alothaim, Wardah; A. Alhoqail, Muniraj Menakha & R. Vijayakumar (2023) Combining molecular modelling and experimental approaches to gain mechanistic insights into the LuxP drug target in <i>Streptococcus pyogenes</i>, <i>Journal of Biomolecular Structure and Dynamics</i>, DOI: 10.1080/07391102.2023.2252079 (SCIE-Q2, Impact factor 4.4)</p> <p>11. Selvaraj C, Dinesh DC, Pedone EM, Alothaim AS, Vijayakumar R, Rudhra O, Singh SK. SARS-CoV-2 ORF8 dimerization and binding mode analysis with class I MHC: computational approaches to identify COVID-19 inhibitors. <i>Brief Funct Genomics</i>. 2023 Feb 21:elac046. doi: 10.1093/bfgp/elac046 (ISI-Q2, Impact factor 4.8)</p> <p>12. Vanajothi, R., Bhavaniramya, S., Vijayakumar, R. et al. In silico and In vitro Analysis of <i>Nigella sativa</i> Bioactives Against Chorismate Synthase of <i>Listeria monocytogenes</i>: a Target Protein for Biofilm Inhibition. <i>Appl Biochem Biotechnol</i> 195, 519–533 (2023). https://doi.org/10.1007/s12010-022-04157-3 (ISI-Q3, Impact factor 3.1)</p> <p>13. R. Vijayakumar, P. Manikandan, Faiz Alfaiz, Mohammad Saleh Al Aboodi, S. Mickymaray, M. Kannaiyan, B. Bhanoth, A. Veluchamy, Prediction of protein aggregation on key proteins involved in ischemic stroke, <i>Journal of King Saud University - Science</i>, Volume 35, Issue 2, 2023, https://doi.org/10.1016/j.jksus.2022.102474. (ISI-Q2, Impact factor 3.8)</p> <p>14. P. Manikandan, R. AL-Baradie, A. Abdelhadi, A. Al Othaim, R. Vijayakumar, R. Ibrahim, S. Aldosari, Ahmed Alhussain, M. Kannaiyan, N K. Binsaleh, N Binroshod, A Veluchamy, K A. Al-Gahtany. Neuroprotective effect of endophytic fungal antioxidant polyphenols on cerebral ischemic stroke-induced Albino rats; memory impairments, brain damage, and upregulation of metabolic proteins, <i>Journal of King Saud University - Science</i>, Volume 35, Issue 1, 2023, https://doi.org/10.1016/j.jksus.2022.102433. (ISI-Q2, Impact factor 3.8)</p> <p>15. Selvaraj C, Panwar U, Ramalingam KR, Vijayakumar R, Singh SK. Exploring the macromolecules for secretory pathway in cancer disease. <i>Advances in Protein Chemistry and Structural Biology</i>. 2023 ;133:55-83. DOI: 10.1016/bs.apcsb.2022.10.003. PMID: 36707206. (ISI-Q2, Impact factor 5.4)</p>
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16. R. **Vijayakumar**, P. Manikandan, Faiz Alfaiz, Mohammad Saleh Al Aboodi, M. Kannaiyan, S. Mickymaray, Balaji Banoth, Alaguraj Veluchamy, *Mutational signatures on ischemic stroke-associated genes in Saudi human genome*, *Journal of King Saud University - Science*, Volume 34, Issue 6, 2022, <https://doi.org/10.1016/j.jksus.2022.102151>. (ISI-Q2, Impact factor 3.8)
17. Selvaraj C, Shri GR, **Vijayakumar** R, Alothaim AS, Ramya S, Singh SK. *Viral hijacking mechanism in humans through protein-protein interactions*. *Adv Protein Chem Struct Biol.* 2022;131:261-276. doi: 10.1016/bs.apcsb.2022.05.001. Epub 2022 Jun 2. PMID: 35871893. (ISI-Q2, Impact factor 5.4)
18. P. Manikandan, R. **Vijayakumar**, B. Alshehri, S. Senthilkumar, MS Al-Aboody, R. Haribaskar, A. Veluchamy. *Long non-coding RNAs act as novel therapeutic targets by regulating molecular networks associated with ischemic stroke*, *Journal of King Saud University - Science*, Volume 34, Issue 5, 2022, <https://doi.org/10.1016/j.jksus.2022.102119> (ISI-Q2, Impact factor 3.8)
19. Manikandan P, **Vijayakumar** R, Alshehri B, Senthilkumar S, Al-Aboody MS, Veluchamy A, Haribaskar R. *Exploring the biological behavior of Heat shock protein (HSPs) for understanding the Anti-ischemic stroke in humans*. *J Infect Public Health.* 2022 Apr;15(4):379-388. doi: 10.1016/j.jiph.2022.03.001. Epub 2022 Mar 4. PMID: 35299061. (ISI-Q2, Impact factor 3.7)
20. Alshehri B, **Vijayakumar** R, Senthilkumar S, Ismail A, Abdel-Hadi A, Choudhary RK, Albenasy KS, Banawas S, Alaidarous MA, Manikandan P. *Therapeutic potential of nitric oxide synthase inhibitor from natural sources for the treatment of ischemic stroke*. *Saudi Journal of Biological Sciences*, Vol. 29, Issue 2, 2022, Pages 984-991, (ISI-Q2, Impact factor 4.4)
21. Selvaraj, C., Abhirami, R., **Vijayakumar**, R., Alfaiz, FA., Singh, S.K. *Immunological insights of selectins in human disease mechanism*, *Advances in Protein Chemistry and Structural Biology*, Academic Press, 2022, <https://doi.org/10.1016/bs.apcsb.2021.11.00> (ISI-Q2, Impact factor 5.4)
22. B. Alshehri, R. **Vijayakumar**, S. Senthilkumar, A. Ismail, A. Abdelhadi, R.K. Choudhary, K. S. Albenasy, S. Banawas, M. A. Alaidarous, P. Manikandan, *Molecular target prediction and docking of anti-thrombosis compounds and its activation on tissue-plasminogen activator to treat stroke*, *Journal of King Saud University – Science*, Volume 34, Issue 1, 2022, 101732, (ISI-Q2, Impact factor 4.0)
23. Vanajothi R, Srikanth N, **Vijayakumar** R, et al. *HPV-mediated Cervical Cancer: A Systematic review on Immunological Basis, Molecular Biology and Immune evasion mechanisms*. *Current Drug Targets.* 2021 Dec. DOI: 10.2174/1389450123666211221160632 (ISI-Q2, Impact factor 3.7)
24. Wael Alturaiki, Ayman Mubarak, SA Mir, A. Afridi, M. Premanathan, S. Mickymaray, R. **Vijayakumar**, SA. Alsagaby, SG. Almalki, F. Alghofaili, A.K. Alnemare, B.F. Flanagan. *Plasma levels of BAFF and APRIL are elevated in patients with asthma in Saudi Arabia*, *Saudi Journal of Biological Sciences*, 2021, ISSN 1319-562X, <https://doi.org/10.1016/j.sjbs.2021.08.044> (ISI-Q2, Impact factor 4.4)
25. M Suresh, M Alfonisan, W Alturaiki, MSA Aboody, FA Alfaiz, M. Premanathan, R. **Vijayakumar**, K. Umamageswari, S. Al Ghamdi, Suliman A. Alsagaby. *Investigations of Bioactivity of Acalypha indica (L.), Centella asiatica (L.) and Croton bonplandianus (Baill) against Multidrug Resistant Bacteria and Cancer Cells*. *Journal of Herbal Medicine*, 2021, 28, 100359 <https://doi.org/10.1016/j.hermed.2020.10> (ISI-Q2, Impact factor 3.1)
26. S Murala, A Ram, R **Vijayakumar**, E Nagarajan. *Review on Infectious Myositis*. *RRNMF Neuromuscular Journal* 2 (2), 2021

	<p>27. C. Selvaraj, G Selvaraj, RM Ismail, R Vijayakumar, A Baazeem, DQ Wei, SK Singh. Interrogation of <i>Bacillus anthracis</i> SrtA active site loop forming open/close lid conformations through extensive MD simulations for understanding binding selectivity of SrtA inhibitors. <i>Saudi J Biol Sci.</i> 28(7),2021, 3650-3659, https://doi.org/10.1016/j.sjbs.2021.05.009 (ISI-Q2, Impact factor 4.4)</p> <p>28. S A. Alsagaby, I A. Brewis, R Vijayakumar, F A. Alhumaydhi, A S. Alwashmi, N K. Alharbi, W Al Abdulmonem, M Premanathan, G Pratt, C Fegan, C Pepper, P Brennan. Proteomics-based identification of cancer-associated proteins in chronic lymphocytic leukaemia, <i>Electronic Journal of Biotechnology</i>, Vol 52, 2021, Pages 1-12. (ISI-Q3, Impact factor 3.4)</p> <p>29. Vijayakumar R, Abdulaziz Alfaiz F, Al-Malki ES, Sandle T. Assessment of airborne endotoxin in sandstorm dust and indoor environments using a novel passive sampling device in Al Zulfi city, Saudi Arabia - Establishing threshold exposure levels. <i>Saudi J Biol Sci.</i> 2021 Feb;28(2):1257-1266. doi: 10.1016/j.sjbs.2020.12.011. (ISI-Q2, Impact factor 4.4)</p>						
Activities in specialist bodies over the last 5 years	<table border="1"> <thead> <tr> <th data-bbox="526 824 798 862"><i>Organisation</i></th> <th data-bbox="798 824 1117 862"><i>Role</i></th> <th data-bbox="1117 824 1418 862"><i>Period</i></th> </tr> </thead> <tbody> <tr> <td data-bbox="526 862 798 1079"><i>Bharathiyar University</i></td> <td data-bbox="798 862 1117 1079"><i>Ph.D Thesis Reviewer</i></td> <td data-bbox="1117 862 1418 1079"><i>2022 – till date</i></td> </tr> </tbody> </table>	<i>Organisation</i>	<i>Role</i>	<i>Period</i>	<i>Bharathiyar University</i>	<i>Ph.D Thesis Reviewer</i>	<i>2022 – till date</i>
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