Individual Biodata

Name : **Dr. Ambika Binesh**

Designation : Assistant Professor (Biotechnology)

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Qualification : M.Sc. & Ph.D.

Field of Specialization : Biotechnology

Major : Biotechnology

Specializing field : Molecular Cardiology and Immunology

Experience (in years) : 5 years 5 months

Citations : 291
h-index : 9
i10-index : 7

Current projects

Sl.No.	Title of the Project	Year	PI / Co- PI of the Project	Funds (in lakhs)	Funding Agency
1.	Investigation on Molecular Crosstalk of Inflammatory hub NFkB and NICD using Zebrafish model	2022 - 2024	**PI**	31.10	DST - SERB - SRG
2.	Exploration of the Notch signaling pathway in regulating macrophage differentiation and IL-6 expression in deep vein thrombosis: Insights from Notch knockdown studies	2024 - 2027	**PI**	67.65	ICMR - IIRP
3.	Understanding the mechanism of resveratrol and IL-17 knockdown on macrophage via NFκB signaling pathway under Metabolic stress conditions	2023 - 2026	**Co-PI**	42.20	DST - SERB - CRG

Research Publications

- Shawna Yadav, Anusha Prasannan, Venkatachalam K, **Ambika Binesh***. Exploring the mechanism and crosstalk between IL-6 and IL- 1β on M2 macrophages under metabolic stress conditions. Cytokine, 2025 Jan 6:186:156852. doi: 10.1016/j.cyto.2024.156852. **IF – 3.70.**

- **Ambika Binesh**, Venkatachalam K, Saravanan R. Investigating the Therapeutic Potential of Gracilaria edulis Extract in Copper-Exposed Zebrafish Embryos: An Anti-Inflammatory Perspective. The Natural Products Journal, 2025, 5(15), e22103155294834. **IF – 0.8.**

- **Ambika Binesh** and Venkatachalam K. Copper in Human Health and Disease: A Comprehensive Review. J Biochem Mol Toxicol. 2024 Nov;38(11):e70052. doi: 10.1002/jbt.70052. PMID: 39503199**. IF – 3.652**.

- Sharma P, Piyushbhai MK, Venkatachalam K, **Ambika Binesh***. Exploring the Role of Secondary Metabolites from Plants and Microbes as Modulators of Macrophage Differentiation. Cardiovasc Hematol Disord Drug Targets, 2024, 24(3), 134 - 150. doi: 10.2174/011871529X327064241003072202. (Scopus cite score – 1.90).

- Sharma P, Venkatachalam K, **Ambika Binesh***. Decades Long Involvement of THP-1 Cells as a Model for Macrophage Research: A Comprehensive Review. Anti-inflamm Anti-allergy Agents Med Chem. 2024, 23 (2), 85-104. doi: 10.2174/0118715230294413240415054610. (Scopus cite score - 3.00).

- Ramalingam R, Venkatachalam K, Piyushbha M K, Sharma P, **Ambika Binesh***. Macrophages: Balancing Inflammation and Homeostasis in Health and Disease. Current Biotechnology, 2024, 13(2), 71-82. (Scopus cite score - 3.00).

- Piyushbha M K, Sharma P, Ramalingam R, **Ambika Binesh**, Venkatachalam K. A comprehensive review on integrated approach for discovery and development of novel bioactive compounds: from natural resources to targeted therapeutics. Current Bioactive Compounds, 2024, e15734072327345. (Scopus cite score - 3.00).

- Bhai MKP, **Ambika Binesh**, Shanmugam SA, Venkatachalam K. Effects of mercury chloride on antioxidant and inflammatory cytokines in zebrafish embryos. J Biochem Mol Toxicol. 2024 Jan;38(1):e23589. **IF – 3.652.**

- Kaliyamurthi V, **Ambika Binesh*.** Power of Portieria hornemannii: influence on zebrafish antioxidant system-inflammatory cascade by combatting copper-induced inflammation. Nat Prod Res. 2023 Nov 11:1-5**. IF – 2.80.**

- Piyushbhai MK, **Ambika Binesh**, Shanmugam SA, Venkatachalam K. Exposure to low-dose arsenic caused teratogenicity and upregulation of proinflammatory cytokines in zebrafish embryos. Biol Trace Elem Res. 2023 Jul;201(7):3487-3496. doi: 10.1007/s12011-022-03418-w. **NAAS – 10.081.**

- Meril, Divya, Raju Piliyan, Santhanam Perumal, Dinesh Kumar Sundarraj, and **Ambika Binesh**. Efficacy of alginate immobilized microalgae in the bioremediation of shrimp aquaculture wastewater. Process Biochemistry, 2022, 122, 196- 202. https://doi.org/10.1016/j.procbio.2022.08.030. **NAAS** – 1**0.885.**

- **Ambika Binesh**. Decades-long involvement of signaling pathways in cardiovascular research using Zebrafish and its global trends. Reviews in Aquaculture. 2021, (Jan) 13(1), 556-566. https://doi.org/10.1111/raq.12486. **NAAS – 16.592.**

- **Ambika Binesh**, Sivasitambaram Niranjali Devaraj, Devaraj Halagowder. Molecular interaction of NFκB and NICD in monocyte–macrophage differentiation is a target for intervention in atherosclerosis. J Cell Physiol. 2019 (May) 234(5): 7040-7050. PMID: 30478968. https://doi.org/10.1002/jcp.27458. **NAAS – 12.513.**

- **Ambika Binesh**, Sivasitambaram Niranjali Devaraj, Devaraj Halagowder. Atherogenic diet induced lipid accumulation induced NFkB level in heart, liver and brain of Wistar rat and diosgenin as an anti-inflammatory agent. Life Sci. 2018 (Mar) 196 :28-37. PMID: 29339101. https://doi.org/10.1016/j.lfs.2018.01.012. **NAAS – 12.78.**

STUDENTS' GUIDANCE - PG and Ph.D.

Sl. No.	Student name and Email id	Degree	Research Title
PG			
1.	Ms. Rabika. R kanirabi@gmail.com	M.F.Sc. (Fish Biotechnology)	Cardio protective effect of the Seaweed *Kappaphycus alvarezii*: Attenuation of inflammatory mediators
2.	Mr. Prakhar Sharma prakharofficial007@gmail.com	M.F.Sc. (Fish Biotechnology)	Isolation and Structural elucidation of bioactive secondary metabolites from *Gracilaria edulis* as COX-2 inhibitor
Ph.D.			
3.	Ms. Shawna Yadav shawna.ydv96@gmail.com	Ph.D. (Fish Biotechnology)	Exploring the mechanism and crosstalk between IL-6 and IL- 1β on M2 macrophages under metabolic stress conditions
4.	Ms. Anusha Prasannan anuoff92@gmail.com	Ph.D. (Life Sciences)	Exploration of the role of IL-6 Signaling in Macrophage Differentiation in Deep Vein Thrombosis: Insights from IL-6 Knockdown Studies
5.	Ms.Sisira Joy sisirasalu@gmail.com	Ph.D. (Life Sciences)	Investigating Notch Knockdown in Deep Vein

			Thrombosis: Insights into the Modulation of Macrophage Differentiation
External Ph.D.			
4.	Ms. V. Remya remya85vijay@gmail.com	Ph.D. (Zoology) Annamalai University	Isolation and Structural elucidation of bioactive secondary metabolites from *Caulerpa racemosa* as anti-inflammatory agents