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Notice for the PhD Viva Voce Examination

Mr Deepak T, Registration Number: 2071805, PhD Scholar at the Department of Life Sciences, School of Sciences, CHRIST (Deemed to be University), will defend his PhD thesis at the public viva-voce examination on Friday, 04 December 2026, at 11.00 am in Room No. 044, Ground Floor, R & D Block, CHRIST (Deemed to be University), Bengaluru - 560029, Karnataka, India.

Title of the Thesis	:	**Studies on Assessing the Zoochemicals of *Meretrix casta* (Gmelin 1791) Extract and Evaluating their Pharmaceutical Potential**
Discipline	:	**Zoology**
External Examiner - I	:	**Dr S Ravichandran** Professor Department of Zoology Government Arts and Science college Nagercoil - 629004 Tamil Nadu
External Examiner - II	:	**Dr P Janakiram** Professor Department of Marine Living Resources Andhra University Visakhapatnam - 530003 Andhra Pradesh
Supervisor	:	**Dr Krishnakumar V** Associate Professor Department of Life Sciences School of Sciences CHRIST (Deemed to be University) Bengaluru - 560029 Karnataka

The members of the Research Advisory Committee of the Scholar, the faculty members of the Department and the School, interested experts, and research scholars of all the branches of research are cordially invited to attend this open viva–voce examination.

Registrar

Place: Bengaluru
Date: 19 November 2026

ABSTRACT

The marine bivalve Meretrix casta (Gmelin 1791), widely distributed along Indian estuarine regions, holds untapped potential as a reservoir of biomolecules with significant therapeutic value. This investigation was undertaken to characterize the zoochemical constituents present in methanolic and ethyl acetate extracts of *M. casta* and to evaluate their pharmacological efficacy through various assay models, particularly in the context of diabetes and its complications. Zoochemical screening and various spectrometry analysis validated the presence of key bioactives including squalene, taurine, eicosanoic acid, and methyl esters of fatty acids. The methanolic extract showed a broader spectrum and higher concentrations of the zoochemicals. The methanol extract showed increased free-radical scavenging property in the DPPH assay (79.56%) compared to ethyl acetate (64.21%) and comparable to ascorbic acid (82.45%). Anti-inflammatory effects were confirmed through membrane stabilization (72.16%) and protein denaturation inhibition (68.33%), surpassing the ethyl acetate extract and closely aligning with acetylsalicylic acid (74.82%). Antidiabetic activity was evident in both extracts through α-glucosidase inhibition, where the methanolic extract achieved 76.18% inhibition (IC50: 18.32 µg/mL), outperforming ethyl acetate (62.04%, IC50: 24.87 µg/mL) and comparable to acarbose (80.22%, IC50: 15.94 µg/mL). In Streptozotocin -induced diabetic rats, the methanol extract (500 mg/kg) caused a marked reduction in fasting blood glucose (FBG) levels from 285.4 ± 13.2 mg/dL to 124 ± 10.6 mg/dL by Day 21, comparable to glipizide (118.6 ± 9.8 mg/dL), while the ethyl acetate group reached 149.8 ± 12.1 mg/dL. Hepatic biomarkers were normalized from elevated diabetic levels to near normal in the methanolic group. Collectively, the study affirms that *M. casta*, particularly its methanolic extract, exhibits potent antidiabetic, antioxidant, anti-inflammatory, and organ-protective effects comparable to standard pharmacological agents. These findings substantiate *M. casta* as a marine zootherapeutic candidate with promise for drug development in metabolic and inflammatory diseases.

Keywords: Diabetes mellitus, Marine natural products, Marine pharmacology, Molluscan extract, Zoochemicals

Publications:

1. **Deepak Thippesh** and Krishnakumar Velayudhannair, "Analysis of zoochemical from Meretrix casta (Mollusca: Bivalvia) extracts, collected from Rameswaram, Tamil Nadu, India and their pharmaceutical activities", Journal of Integrated Sciences and Technology, vol. 12, no. 6, p. 835, Jun. 2024, doi: 10.62110/sciencein.jist.2024.v12.835
2. **Deepak Thippesh** and Krishnakumar Velayudhannair, "Exploring the Pharmaceutical Potential of Meretrix casta (Gmelin, 1791) (Mollusca: Bivalvia)", Asian Journal of Chemistry vol. 37, no. 6, pp. 1469–1476, May 2025. doi: http://dx.doi.org/10.14233/ajchem.2025.33827