

Full text open access online (Since 2007)

©  Kamla-Raj S-EM 2026

PRINT: ISSN 0973-5070 ONLINE: ISSN 2456-6772

Ethno Med, 20(2): 87-98 (2026)

DOI: 10.31901/24566772.2026/20.02.722

Cardioprotective Effect of *C. cassia* Bark in the Doxorubicin-Induced Cardiotoxicity Rats

**Nithyatharani Ramalingam¹, Manikandan Ramasamy^{2*}, Srinath Arjunan³,
Prasun Kumar⁴, Ushasri Raghavendran⁵ and Thenmozhi Sambandam⁶**

¹*Department of Microbiology, Shrimati Indira Gandhi College, Tiruchirappalli,
Tamilnadu, India*

^{2*}*Department of Biochemistry, Shrimati Indira Gandhi College, Tiruchirappalli,
Tamilnadu, India*

³*Department of Biomedical Engineering, Sri Manakula Vinayagar Engineering College,
Puducherry, India*

⁴*Department of Biotechnology, School of Bioscience and Technology,
Sharda University, Greater Noida, India*

⁵*Department of Microbiology, Justice Basheer Ahmed Sayeed College for Women,
Chennai, Tamilnadu, India.*

⁶*Department of Microbiology, Valliammal College for Women, Chennai, Tamilnadu, India.*

KEYWORDS Cardiac Markers. *Cinnamon cassia* Bark. Hexadecanoic Acid. *In Silico* Analysis. Lysosomal Enzymes

ABSTRACT This study investigates the therapeutic benefits of *Cinnamon cassia* bark on rats with doxorubicin-induced cardiotoxicity. The ethanolic extract underwent Gas Chromatography-Mass Spectrometry analysis to identify phytochemicals. Five groups of rats were formed, and their cardiac were damaged by doxorubicin, and treated with a daily oral dosage of *C. cassia* extract. Post-treatment, tissue and serum samples were analysed. Comparing the extract to the negative control group propranolol serving as the standard showed that the extract significantly altered biochemical parameters. *In silico* analysis indicated hexadecanoic acid's protective role against cardiac damage. The extracts exhibited protective effects on cardiac markers and lysosomal enzymes, suggesting the potential use of *C. cassia* bark in combination therapy for cardiac issues.