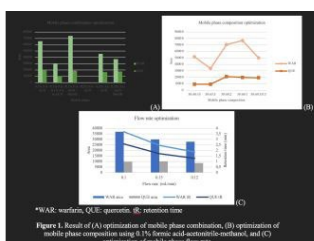


Determination of warfarin in volumetric absorptive microsampling by liquid chromatography-tandem mass spectrometry

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This study aims to develop and validate bioanalytical method for quantifying warfarin in VAMS samples using liquid chromatography tandem mass spectrometry (LC-MS/MS), directly implementing the method to patients receiving warfarin therapy. The UPLC-MS/MS method was developed and optimized, with quercetin as the internal standard. Sample preparation was carried out using protein precipitation with methanol-acetonitrile (1:3 v/v). Chromatographic separation was achieved using Acquity® UPLC BEH C18 column with 0.1% formic acid- acetonitrile-methanol (30:69:1 v/v) as mobile phase, in isocratic elution. Multiple Reaction Monitoring (MRM) detection was done using m/z values of 307.10 161.06 for warfarin and 301.03 150.98 for quercetin as internal standard, using Electrospray Ionization (ESI) negative ion source. The clinical application of the bioanalytical method was carried out on 25 patients receiving warfarin therapy at Universitas Indonesia Hospital and warfarin levels were well within the calibration range from 6.05 to 431.39 ng/mL. A novel method has been developed to analyze warfarin in VAMS samples. This method has been fully validated according to guideline from FDA 2022 and is linear in the range of 5 – 500 ng/mL and the value of $r \geq 0.9977$, and successfully applied for the analysis of warfarin in VAMS samples of clinical patients.



Biography

Yahdiana Harahap has completed her Ph.D. from Department of Pharmacy, Institute Technology Bandung, Indonesia. Since August 2020 She was the Dean of Faculty of Military Pharmacy, Republic of Indonesia Defense University, Indonesia. She was the Head of Pharmacy Division of Indonesia Accreditation Agency for Higher Education in Health (IAAHEH/LAM-PTKs). Previously (2011-2013) she was the Dean of the Faculty of Pharmacy, Universitas Indonesia. Currently she is the Chair of Multi-Country Training Hub for Health Emergencies Operational Readiness (MULTHEOR), Collaboration of WHO with Ministry of Defense and Ministry of Health Republic of Indonesia and since January 2024 she is the Chair of the Center of Excellence for Biosafety and Biosecurity, Collaboration Republic of Indonesia Defense University with US-DTRA. She is also involved in pharmaceutical associations such as the President of Asian Federation for Pharmaceutical Sciences (2020- 2023) and Observer of Board of Director of Asian Association of School of Pharmacy (2020-present).

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