

# 5<sup>th</sup> Annual European Pharma Congress

July 18-20, 2016 Berlin, Germany

## Analysis of Valproic acid with dried blood spot method by ultra performance liquid chromatography – mass spectrometer

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Valproic Acid is an anticonvulsant, which can be used to treat all types of epilepsy and has also been developed to be used as an adjuvant therapy for bipolar disorder. Valproic acid has narrow therapy index therefore it needs therapeutic drug monitoring with dried blood spot method which is simple, easy, and accurate. The objective of this research is to obtain optimum and validated method of valproic acid in whole blood as Dried Blood Spot (DBS) using Ultra Performance Liquid Chromatography – tandem mass spectrometry (UPLC-MS/MS). The quality control and calibration samples were obtained by pipetting as much as 20  $\mu$ L blood sample onto CAMAG DBS paper and then left to dry at room temperature for 1 hour. Then the disc was transferred into micro tube and added 200  $\mu$ L extraction solution (acetonitrile – methanol mixed solution (1:3) containing benzoic acid as internal standard with concentration of 1000  $\mu$ g/mL. Chromatographic separation was conducted using Waters Acquity UPLC Class BEH C18 1.7  $\mu$ m (2.1 x 100 mm) with mobile phase of 0.1% acetic acid - acetonitrile (40-60) under isocratic elution and flow rate of 0.4 mL/minute. Mass detection was performed with an Electrospray Ionization (ESI) source at negative ion mode in the Multiple Reaction Monitoring. Detection of valproic acid was performed at m/z 142.95 > 142.95 value; and benzoic acid was at m/z 121.1 > 77.1. This method was linear on range concentration of 0.5 – 100  $\mu$ g/mL with  $r > 0.9991$ . Dried Blood Spot sample was stable for minimum of 16 days in room temperature and the validated analysis method was applied on one healthy subject.

### Biography

Yahdiana Harahap has completed her PhD at the age of 39 from Department of Pharmacy, Institute Technology Bandung, Indonesia. Now she is the Head of Bioavailability and Bioequivalence laboratory Faculty of Pharmacy, Universitas Indonesia. Prior to this position, she was the Dean of Faculty of Pharmacy, Universitas Indonesia. She has published 40 papers published in both International and National Journals. She has been invited to be the speakers in many international conference, especially in the field of BA/BE and Bioanalysis technique. She currently serves as an expert at Indonesia National Agency of Drug and Food Control, specifically in BA/BE evaluation.

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