

Analysis of Isoniazid and Acetylisoniazid to Determine the Acetylation Rate of Melanesian Ethnicity from Papua

Yahdiana Harahap^{1*}, Novi Yantih², Wahono Sumaryono² and Rianto Setiabudy³

¹Department of Pharmacy, University of Indonesia, Indonesia

²Department of Pharmacy, University of Pancasila, Indonesia

³Department of Medicine, University of Indonesia, Indonesia

The major pathway of isoniazid (INH) metabolism is by acetylation to form acetylisoniazid (AcINH). The acetylation rate may differ depending on N-Acetyltransferase-2 (NAT-2) activity. The aim of this research was to determine INH acetylation rate on Melanesia ethnicity from Papua, Indonesia. The rate of acetylated INH was determined based on the ratio of AcINH and INH levels in human plasma which was analysed using HPLC. The chromatographic separation was conducted using Reliant[®] C₁₈ column (250x4.6mm) with temperature of 30°C, a 20 mM hexane sulphonic acid pH 2.47-methanol (65:35) as mobile phase with a flow rate of 1 mL/min, detected at 265 nm, and vitamin B6 as an internal standard. The participants in this study were healthy subjects from Papua and 102 subjects completed the study. The blood was collected at pre-dose and 3 hours after administration of 300mg INH. The results showed that 70.59% of subjects were slow acetylators, it means that the Melanesia ethnic from Papua need more dosages to achieve the therapeutic concentration of INH.

Biography:

Dr. Yahdiana Harahap is a Professor in the field of Pharmaceutical Chemistry especially Bioanalysis related to bioequivalence study and DNA Adduct. She received her Master Degree in 1994 and Doctoral degree in 2003 from Department of Pharmacy, Faculty of Mathematics and Natural Sciences, Institute Teknologi Bandung. She has been The Head of Bioavailability-Bioequivalence Laboratory Faculty of Pharmacy Universitas Indonesia since 2008. She has generated more than 80 scientific works published in international and national journals, thus presented them in national and international conferences.