JUTIMA BOONLEANG : THE DEVELOPMENT OF THE ANALYTICAL METHOD FOR DETERMINING 2-METHOXY-1,4-NAPHTHOQUINONE IN PLASMA USING HIGH PERFORMANCE LIQUID CHROMATOGRAPHIC TECHNIQUE. THESIS ADVISOR : ASSO. PROF. PHENSRI THONGNOPNUA, Ph.D. 111 PP. ISBN 974-578-901-1

The developed analytical method for determining 2-methoxy-1,4-naphthoquinone in human plasma using high performance liquid chromatographic technique required 0.5 ml of the plasma sample. The plasma protein was precipitated with methanol and 10% zinc sulfate in water. An internal standard used was 2-methyl-1,4-naphthoquinone. The analysis was performed on HPLC column (300x3.9 mm) of μ-Bondapak C_{18} (10 µm) with a mobile phase of 55:45 methanol : 2×10^{-4} M acetate buffer pH 4.0 at the flow rate of 1.0 ml/min. The detector was UV 275 nm. The lowest concentration in plasma that could be quantitated was 0.10 ug/ml of plasma. The calibration curve was linear over the concentration range of 0.10-16.0 ug/ml of plasma. The method was specific without any interference from endogenous substance. The physical recovery of this compound and internal standard had the mean values of 88.42% and 91.07%, respectively (n=18). The mean analytical recovery was 101.1% (n=15). The within-run precision (n=3) and between-run precision (n=6)over the calibration range expressed as coefficient of variation was between 2.0-9.8% and 3.8-12.4%, respectively. The analytical time per sample was within 20 min. This analytical method is appropriate enough to be used in various studies related to the drug development of this compound in the future.

The plasma sample as well as the stock methanolic solution of 2-methoxy-1,4-naphthoquinone can be stored under freezing condition up to 7 days.