Ketahanan sampel urin terhadap waktu dan kondisi penyimpanan dalam penentuan kadar senyawa asam trans trans mukonat asam s fenil merkapturat asam hippurat asam 2 metil hippurat asam 3 metil hippurat serta asam 4 metil hippurat menggunakan instrument = Resistance of urine sample against storage time and condition for the determination of compounds tt ma spma ha 2 ha 3 mha and 4 mha by high performance liquid chromatography

Djeanisa Firdaus, author

Abstrak

Pada penelitian ini telah dilakukan uji ketahanan sampel urin terhadap waktu dan kondisi penyimpanan dalam penentuan kadar senyawa asam trans, trans-mukonat, asam S-fenil merkapturat, asam hippurat, asam 2-metil hippurat, asam 3-metil hippurat, serta asam 4-metil hippurat menggunakan instrument HPLC. Setelah sampel urin dan standar melalui proses ekstraksi, dilakukan uji pemisahan dan analisis dengan instrument HPLC menggunakan detektor UV. Metode yang digunakan memenuhi beberapa kriteria validasi dalam hal linearitas, presisi, batas deteksi, batas kuantifikasi, serta persen perolehan kembali. Diperoleh nilai R2 rentang 0.85 ppm 175 ppm. Nilai presisi yang dinyatakan dengan %RSD berada pada 0,331 % - 0.888 %. Batas deteksi dari lima analit berkisar antara 0,255 ppm 􀂱 6.327 ppm dan batas kuantifikasi dari lima analit berkisar antara 0.849 ppm 􀂱 21.091 ppm. Persen perolehan kembali mampu mencapai kisaran 94.37%-100.46%. Kemudian metode ini digunakan dalam menganalisis sampel urin terhadap waktu dan kondisi penyimpanan dalam penentuan kadar senyawa asam trans, trans-mukonat, asam s-fenil merkapturat, asam hippurat, asam 2-metil hippurat, asam 3-metil hippurat, dan asam 4 -metil hippurat. Didapat kondisi penyimpanan yang paling baik adalah dengan penambahan pengawet timol dan disimpan pada suhu 50C. Hasil analisis senyawa metabolit BTX pada urin dengan kondisi penyimpanan tersebut menunjukkan kadar yang stabil selama kurang lebih 30 hari.

.....In this research, the resistance of urine sample against storage time and condition for the determination of compounds tt-MA, SPMA, HA, 2-MHA, 3-MHA, and 4-MHA by High Performance Liquid Chromatography has been investigated. After urine samples and standards have been extracted, they were then analyzed by HPLC instrument using a UV detector. The method used had met several criteria in terms of validation of linearity, precision, detection limit, quantification limit, and percent recovery. The result showed that the value of R2 exceeded 0.996 with range of 0.85 ppm - 175 ppm. The value of precision showed by % RSD is at 0.331% - 0.888%. Limit of detection of five analytes ranged from 0.255 ppm 6.327 ppm and limit of quantification of five analytes ranged from 0.849 ppm-21.091 ppm. Percent recovery has been to reach a range of 94.37% - 100.46%. This method then used to analyze the resistance of urine sample against storage time and condition for the determination of compound trans, transmuconic acid, s-phenyl mercapturic acid, hippuric acid, 2-methylhippuric acid, 3-methylhippuric acid, and 4-methylhippuric acid. We can conclude that the best storage conditions are at 50C with addition of thymol as preservatives. The analysis results of BTX metabolites in urine with this storage conditions showed a stable amount for approximately 30 days.