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KEY WORD: DOPING / ANALYSIS / URINE / LIQUID CHROMATOGRAPHY / MASS SPECTROMETRY
SURIYAPHONGSE KULKERATTYUT : ANALYSIS OF SOME DOPING SUBSTANCES IN URINE
USING LIQUID CHROMATOGRAPHY/MASS SPECTROMETRY TECHNIQUE.
THESIS ADVISER : ASSO. PROF. AMORN PETSOM, Ph.D. 199 pp. ISBN 974-632-449-7

The object of this study is to develop new method for the analysis of beta-blockers, anabolic steroids and diuretics in urine sample using Liquid Chromatography/ Mass Spectrometry. The effect of cone voltage fragmentation, fragmentation pattern, corona voltage, detection limit and percent recovery were studied. It was found that beta-blockers, anabolic steroids and diuretics could be analyzed by using 70% methanol in water as mobile phase at 0.8 mL/min. and 30-50 volts cone voltage. The detection limit of beta-blockers were 0.2-1.0 nanogram/mL, anabolic steroids were 0.5-1.0 nanogram/mL and diuretics were 0.5-10.0 microgram/mL. All investigated doping substances had linearity range of 0-50 microgram/mL. Corona voltage had no effect on fragmentation pattern. The method developed in this study provided very convenience and fast method of doping analysis without derivatization. The new method gave better sensitivity for beta-blockers and anabolic steroids than the previous known method. For diuretics the detection limit was higher than the methods currently in used.

ภาควิชา.....

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