번호 15-5

제 목	국문	HPLC를 이용한 요중 2-naphthol 측정법
	영문	Assay of 2-naphthol in human urine by high performance liquid chromatography
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1. 연구 목적

This study is to develope a novel liquid chromatographic method for the quantitation of 2-naphthol in human urine.

2. 연구 방법

The level of urinary 2-naphthol in 100 Korean shipyard workers was analyzed using this new method. Urine samples were extracted after enzymatic hydrolysis of glucuronides and sulfates; 2-naphthol was then separated using reversed phase high-performance liquid chromatography.

3. 연구 결과

The corresponding detection limits were 0.04 ng/ml for the standard sample in acetonitrile and 0.13 ng/ml for urine samples. The level urinary 2-naphthol of the workers of ranged from 0.21 ng/ml (0.26 mol/mol creatinine) to 34.19 ng/ml (59.11 mol/mol creatinine), and the mean± standard deviation was 5.08 ng/ml (6.60 mol/mol creatinine)±5.75 ng/ml (9.22 mol/mol creatinine). The mean±standard deviation of urinary 2-naphthol level of smokers, 7.03 ng/ml (8.49 mol/mol creatinine)±6.16 ng/ml (10.23 mol/mol creatinine), was significantly higher than that of non-smokers, 2.49 ng/ml (4.10 mol/mol creatinine)±3.92 ng/ml (7.03 mol/mol creatinine).

4. 고찰

In conclusion, it can be stated that our proposed method for determining 2-naphthol levels in urine, using HPLC and fluorescence detection, is sensitive, simple, and useful for monitoring the inhalation exposure to naphthalene.