

Dla amobarbitalu i allobarbitalu reaktywność stanowi ok. 1/3 wartości wzorcowego sekobarbitalu i maleje ze wzrostem stężenia związków.

Barbital reaguje z przeciwciałami testu barbituranowego w stopniu niewystarczającym do uzyskania wyniku dodatniego, a butobarbital daje dodatni wynik testu przy stężeniu dużo niższym od wartości cut-off dla barbituranów.

Do identyfikacji barbituranów w moczu 9 narkomanów zastosowano metodę wysokosprawnej chromatografii cienkowarstwowej (HPTLC). W moczu 6 pacjentów wykryto tylko fenobarbital, w moczu jednego – fenobarbital i pentobarbital a w moczu dwóch – allobarbital. Metoda ta może służyć do identyfikacji ważniejszych barbituranów, ale wymaga zastosowania przynajmniej dwóch układów rozwijających.

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**Usefulness of FPIA, HPTLC, and HPLC methods in urinalysis for  
internationally controlled barbiturates**

### Summary

The aim of the study was to assess usefulness of three analytic methods based on different physicochemical principles (FPIA, HPTLC, and HPLC) for detection and identification of eight barbiturates that due to their psychotropic action have been submitted to international control. FPIA utility was assessed by determining particular barbiturates reactivity to test antibodies, as well as the relationship between reactivity and concentration. FPIA turned out to give good results in detection of Secobarbital, Bitalbital, as well as Pentobarbital and Phenobarbital, since reactivity of these compounds with antibodies is high for a quite wide range of concentrations.

As regards Amobarbital and Allobarbital, reactivity constitutes about 1/3 of the standard Secobarbital value, and decreases with the compounds concentration increase.

Barbital reacts with the barbiturate test antibodies in a degree insufficient to obtain a positive result, while Barbital yields a positive test result for concentrations much lower than the cut-off value for barbiturates.

The High-Performance Thin-Layer Chromatography (HPTLC) method was used to detect barbiturates in urine of 9 drug users. In 6 cases Phenobarbital only was detected, in one case – Phenobarbital and Pentobarbital, while in the remaining two cases – allobarbital. The method may serve to identify major barbiturates, but it requires at least two developing systems.

**Key words:** urinalysis / barbiturates / laboratory methods

### PIŚMIENNICTWO

1. Breiter J., Hegler R., Lang H., *Evaluation of column extraction: A new procedure for the analysis of drugs in body fluids*, Forensic Sci., 1976, 7, 131-135.