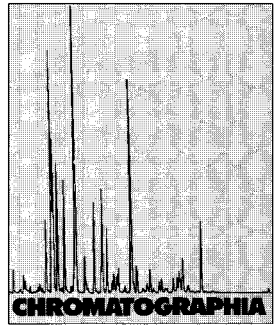
# Application of Micro-Column HPLC to the Determination of Phenobarbital and Carbamazepine in Human Blood Serum

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## Key Words

Column liquid chromatography
Micro-columns
Serum clean-up
Phenobarbital
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## Summary

The paper presents a method for the determination of phenobarbital and carbamazepine in human serum for routine application in therapy. Serum clean-up consists of the extraction of lipids with hexane, and the precipitation of proteins with lithium perchlorate – acetic acid – acetonitrile. The supernatant is subjected to HPLC on a micro-bore column with a C18 adsorbent with multi-wavelength detection at 210, 220, 230 and 240 nm. Gradient elution is performed with aqueous 0.2 M lithium perchlorate as solvent A and acetonitrile as solvent B. Compared to other methods, the solvent consumption is 10 times less. Multi-wavelength detection increases the reliability of peak identification. The respective detection limits for phenobarbital and carbamazepine are 0.1 μg and 0.05 μg per 1 mL of serum, with 50 μL of serum. The method makes it possible to determine other anticonvulsant preparations that are used to treat children and adults.