DETERMINATION OF ALBUMIN CONCENTRATION IN URINE
(DIAGNOSTICS OF MICROALBUMINURIA)

INTRODUCTION
The capillary electrophoresis method provides determination of albumin concentration in urine.

MEASUREMENT METHOD
Determination of albumin is based on electrophoretic migration of its anionic form in the electric field and its direct detection by measuring the UV absorption in the 215–220-nm range. Prior to analysis sample aliquot was desalted either by ultra-diafiltration or on the “Sephadex® G-25” column.

REFERENCE CONCENTRATION OF ALBUMIN IN URINE
The albumin content in urine of a healthy person is less than 20 mg/dm³.

EQUIPMENT AND REAGENTS
The “CAPEL®-105/105M” capillary electrophoresis system is used in measurements. Data acquisition, collection, processing and output are performed using a personal computer running under “WINDOWS® 2000/XP” operating system with installed dedicated software package for acquisition and processing of chromatography data. All reagents must be of analytical grade or higher.

EXAMPLES OF REAL ANALYSES
Buffer: borate, with SDS, pH 9.2
Capillary: L_eff/ L_tot 50/60 cm, ID 75 µm
Injection: 450 mbar x sec
Voltage: + 15 kV
Detection: 215 nm

Sample: urine of a healthy person
Measurement results: detected
albumin concentration 13 mg/dm³

Sample: urine of a patient with diabetes
Measurement results: detected
albumin concentration 117 mg/dm³

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