

Comenius University in Bratislava, Faculty of Medicine
Institute of Medical Chemistry, Biochemistry and Clinical Biochemistry

LABORATORY PROTOCOL SS10

Determination of total plasma proteins and albumin

Name, group:	Date:
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Principle:

Peptide bonds present in the proteins of blood serum react in the basic solution with copper cations forming violet-colored complex and the intensity of the color is proportional to amount of proteins present. Determination of albumin can be done using bromocresol green (BCG), since albumin binds to this anionic compound and other serum proteins do not. Intensity of the blue-green color in the sample is proportional to amount of albumin.

Procedure:

Total proteins	serum 1	serum 2	reference sample
biuret reagent	1 000 µl	1 000 µl	1 000 µl
serum CB 1	100 µl	---	---
serum CB 2	---	100 µl	---
distilled water	---	---	100 µl
We mix the samples, let them stand for 10 minutes and measure absorbance at 546 nm.			

Albumin	serum 1	serum 2	reference sample
bromocresol green	1 000 µl	1 000 µl	1 000 µl
serum AL 1	100 µl	---	---
serum AL 2	---	100 µl	---
distilled water	---	---	100 µl
We mix the samples, let them stand for just 1 minute and measure absorbance at 630 nm.			

Calculation:

	Patient 1		Patient 2	
	total proteins	albumin	total proteins	albumin
absorbance				
amount (g/l)				

Reference values:

Total plasma proteins: **60 – 80 g/l**; albumin: **35 – 50 g/l**

Conclusion: