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ISOTACHOPHORESIS

APPLICATION NOTE No. 15

DETERMINATION of SIALIC ACID in SERUM

MAIN FEATURES:

Sialic acid is a summarizing term for acetylated derivatives of neuraminic acid. According to literary data oncologic patients with metastases have significantly higher concentrations of sialic acid than patients without metastases. For its determination the ITP method is the most specific and has a detection limit of 10^{-5} mol/l. On observing exactly defined conditions, sialic acid is sharply separated and its concentration is not influenced by other substances. Only minimum pre-treatment of the sample has to be carried out.

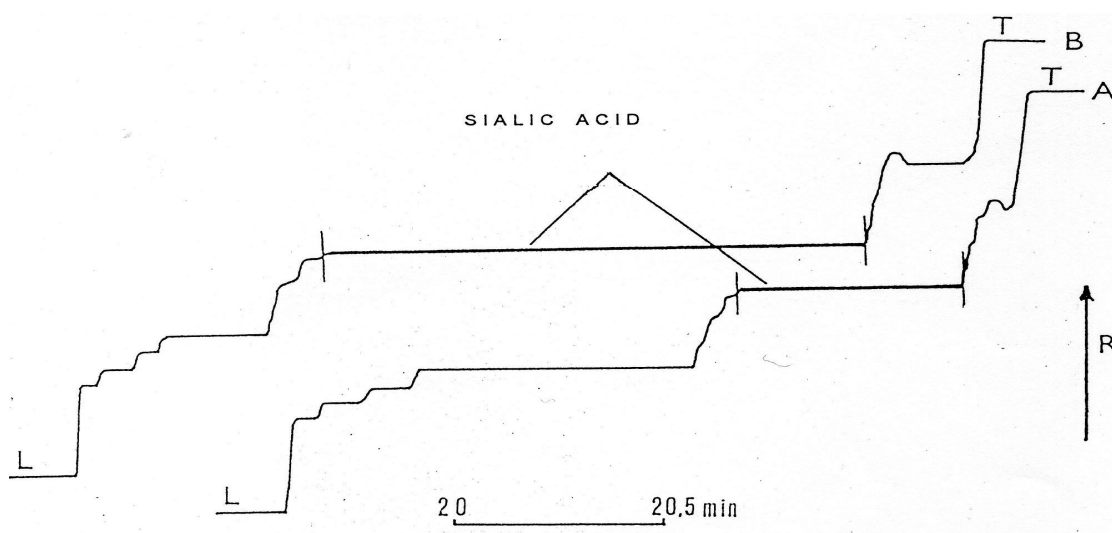


Fig. 1 : Isotachophoreograms of human serum : A – healthy person B – cancer patient
Determined concentrations of sialic acid : A = 2,2 mmol/l B = 4,5 mmol/l

Conditions : leading electrolyte (LE):
 10^{-2} M Cl + β -alanine + 0,1MHEC , pH=3,8
terminating electrolyte (TE): $5 \cdot 10^{-3}$ caproic acid
V=30 μ l

As a standard, the N-acetyl neuraminic acid (NANA fy Boehringer) was used.

Taking into account the long-term ITP measurements there were found out the average value for healthy persons of 1,84 mmol/l while for cancer patients the value of 2,92 mmol/l

Literature:

C.Belovičová, V.Madžajová, D.Kaniánsky, I.Blanárik : Stanovenie kyseliny sialovej v sére metódou kapilárnej izotachofórézy, Biochem. Clin. Bohemoslov. 19, 1990, 459-466.

CZE and ITP analysers are produced by :

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