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Evaluation of Ames' Seralyzer

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Ames' Seralyzer for dry reagent technology has been tested in clinical-chemical laboratories of different sizes: a central laboratory, a small hospital laboratory, and physician office laboratory. We also wanted to test the training need for the staff to perform the analyses.

Following serum constituents were determined:

glucose
potassium
bilirubin
creatinine
creatine kinase
aspartate aminotransferase
theophylline

Comparisons were made with the routine methods in the hospital laboratory. For the Seralyzer the recommended procedures were used in detail.

Patient sera were used for quality control studies and method comparisons. The results are shown in table and figures.

According to our opinion the tests must be performed by a laboratory technician because the procedures include dilution of the sample material, pipetting 30 µl serum, and result consideration.

Overall, the Seralyzer results show remarkable correspondence with those for the routine instruments. The testing can easy by performed by a laboratory technician and the work decentralized to small laboratories and physicians' officies.

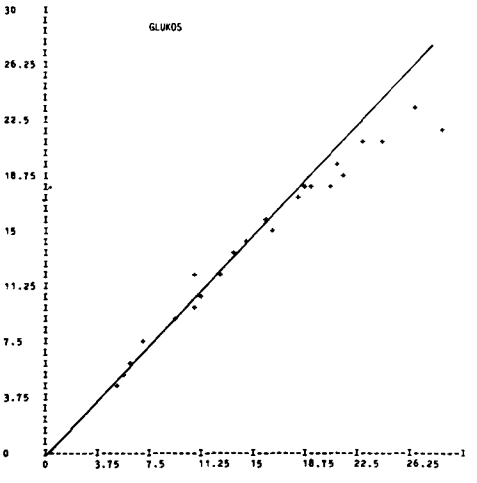
Table

Within day run

S-glucose mmol/l	Mean	SD	CV%
n= 15	2.8	0.1	4.4
n= 19	10.5	0.3	3.2
n= 15	17.3	0.6	3.5
S-potassium mmol/l			
n= 20	2.3	0.1	4.3
n= 18	4.6	0.1	2.2
n= 20	6.3	0.2	3.0
S-bilirubin µmol/l			
n= 15	17.3	0.5	2.7
n= 15	37.9	1.3	3.5
n= 15	95.3	3.8	4.0
S-creatinine µmol/l			
n= 15	114.9	3.6	3.1
n= 15	292	7.5	2.6
n= 15	632	13.6	2.2
S-CK µkat/l			
n= 10	1.35	0.07	5.2
n= 10	13.3	0.2	1.4
S-ASAT µkat/l			
n= 18	0.20	0.06	30
n= 18	1.0	0.06	5.9

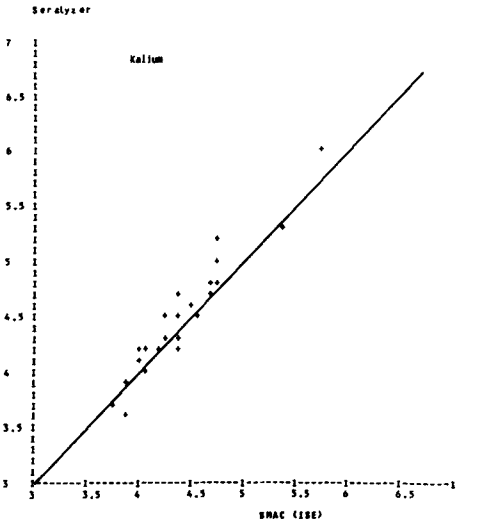
Method/Method Comparison

Reference method on X-axis
Seralyzer method on Y-axis



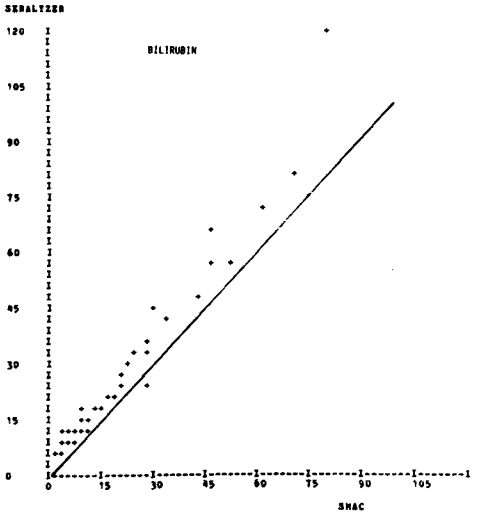
S-glucose

y= 0.80X + 1.9 r= 0.983



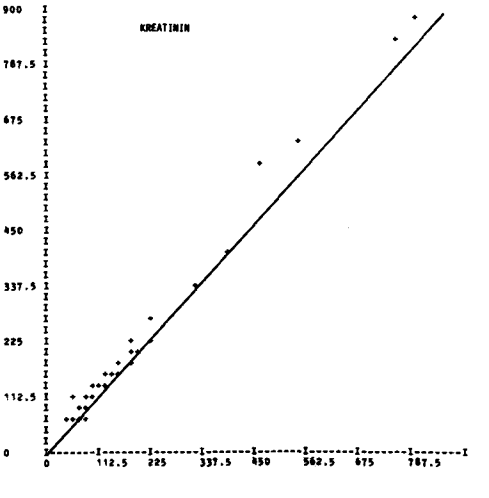
S-potassium

y= 1.1X - 0.35 r= 0.957



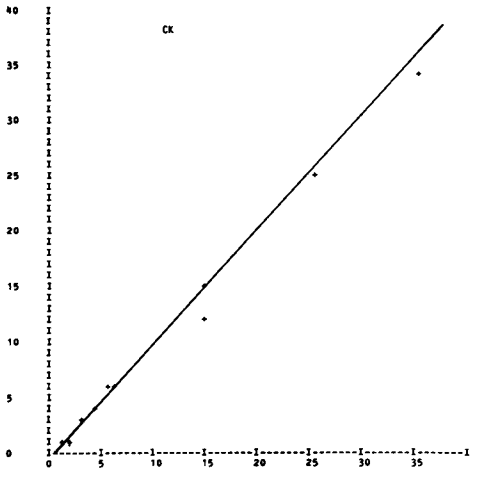
S-bilirubin

y= 1.20X + 2.6 r= 0.980



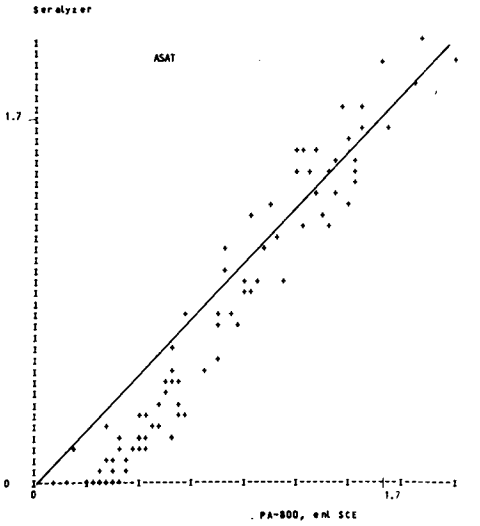
S-creatinine

y= 1.10X + 4.6 r= 0.995



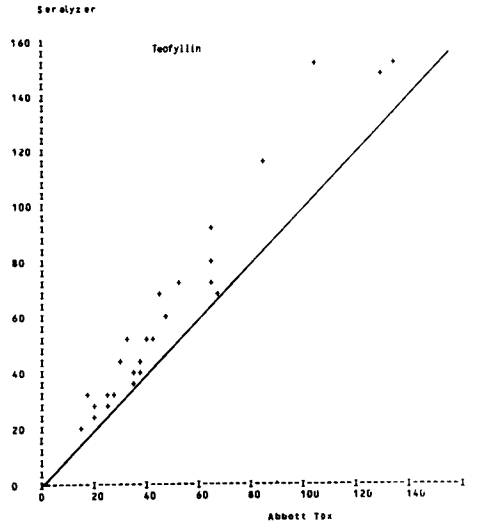
S-CK

y= 0.95X + 0.2 r= 0.997



S-ASAT

y= 1.07X - 0.25 r= 0.989



S-theophylline

y= 1.19X + 3.7 r= 0.975