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# New Seralyzer Compared to Routine Techniques in Clinical Chemistry

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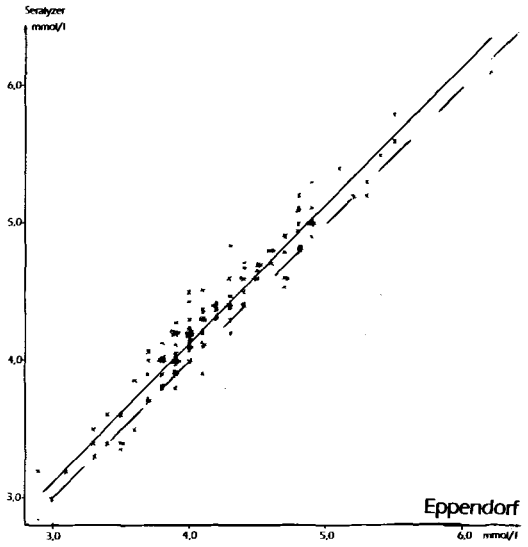
New Seralyzer (AMES) is a reflectometer designed mainly for serum and blood analyses with solid-phase chemistry (reagent strips).
We have compared Seralyzer with the routine methods of our hospital laboratory for 10 components, especially the two recently introduced tests for potassium and theophylline.
Serum and blood samples were taken at random from the routine series for blind analysis with the New Seralyzer using well-trained personnel.

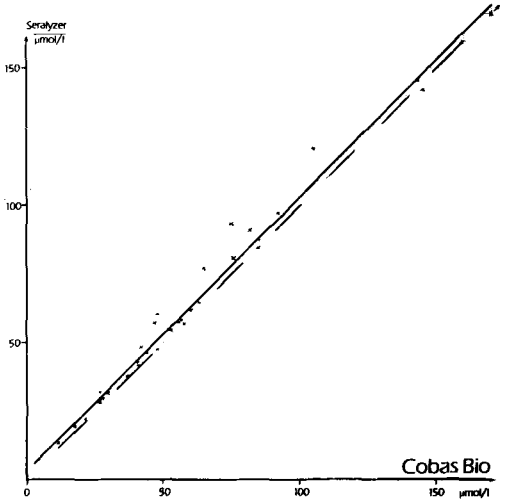
Conclusion: Under optimal conditions the New Seralyzer instrument gave good accuracy and precision for S-Potassium and S-Theophylline. (See Figures)
For the other components results were often good, but sometimes accuracy and precision problems occurred (especially for serum enzymes). (See Table)

1. S-K Seralyzer Eppendorf




n = 140
y = 1.01 x + 0.09
r = 0.957

2. S-THEOPHYLLINE Seralyzer Cobas Bio




n = 34
y = 1.00 x + 3.0
r = 0.994

New Seralyzer (SL) compared to routine techniques (RT) in clinical chemistry

| Component | N | Routine technique (RT) Hospital laboratory | Concentration | Y=a+bX X=RT Y=Seralyzer | | | CV Between-method RT/Seralyzer | CV Within-method RT | CV Quality control program for western Sweden |
|---|---|---|---|---|---|---|---|---|---|
| | | | median | a | b | r | | median | Median |
| S-$K^+$ | 140 | Flame photometry | 41 mmol/l | 0.09 | 1.01 | 0.957 | 3.7 | 1.2 | 2.1 |
| S-Theophylline | 34 | EMIT | 55 µmol/l | 3.0 | 1.00 | 0.994 | 6.3 | 3.1 | --- |
| S-Creatinine | 138 | Jaffé kinetic | 95 µmol/l | -6.3 | 1.12 | 0.985 | 8.5 | 2.7 | 5.4 |
| S-ASAT | 28 | SCE | (>0.6)1.1µkat/l | 0.09 | 0.95 | 0.986 | 8.2 | 2.7 | 5.4 |
| S-Bilirubin | 39 | Diazo method | 12 µmol/l | -2.0 | 1.07 | 0.970 | 11.7 | 2.8 | 6.7 |
| S-CK | 26 | SCE | 1.5 µkat/l | -0.03 | 1.16 | 0.991 | 14.9 | 2.8 | 13.2 |
| B-Hemoglobin | 89 | Coulter S+ | 135 g/l | 0.54 | 0.97 | 0.975 | 2.7 | 0.83 | 2.1 |
| S-Cholesterol | 41 | Cholesterol oxidase | 6.2 mmol/l | 1.21 | 0.89 | 0.921 | 1.1 | 2.6 | 3.7 |
| S-Triglycerides | 41 | Glycerol kinase | 1.9 mmol/l | 0.07 | 1.05 | 0.993 | 6.0 | 2.8 | 7.3 |
| S-Urate | 39 | Uricase | 370 µmol/l | 30 | 0.89 | 0.982 | 4.9 | 2.0 | 5.2 |