

## Comparison of BM/H and Test-mate ChE Systems

### Comparison of Analyzer Systems

	<u>BM/H</u>	<u>Test-mate ChE</u>
System Name	Boehringer Mannheim / Hitachi 704 Analyzer.	Test-mate ChE Photometric Analyzer.
Intended Use	Analysis of blood samples.	Analysis of blood samples.
Primary Application	General purpose blood analysis, configurable to the quantitative determination of cholinesterase.	Specific purpose blood analysis, limited to the quantitative determination of cholinesterase.
Other Applications	Determination of many other blood chemistries with the aid of different reagent systems.	Device is not being marketed for other applications.
Operator	Laboratory technician.	Laboratory technician.
Usage Environment	Clinical laboratory.	Clinical laboratory.
Size	42" x 28" x 40"	11" x 7" x 10"
Weight	770 lbs.	10 lbs.
Power Requirement	115 VAC, 30 Amp. (Power Line)	9 VDC, 0.025 Amp. (Battery)
Principle	Photometric	Photometric
Source	Halogen-tungsten Lamp	Blue LED
Detector	Photodiode Array	Single Photodiode
Monochromator	Diffraction Grating	Interference Filter
Bandwidth	10.0 nm	12.0 nm
Lightpath	6 mm	13 mm
Mode	Kinetic/Bichromatic	Kinetic/Monochromatic
Linearity	to 2.500 A	to 3.000 A
Resolution	0.0001 A	0.001 A
Stability	< 0.001 A/hour	< 0.005 A/hour
Sampling	Syringe/Dilutor	Glass Capillary

#### Abbreviations

A, absorbance; LED, light emitting diode.

*Fig. 7-A*

## Comparison of Erythrocyte Cholinesterase (AChE) Reagent Systems

	<u>BM/H</u>	<u>Test-mate ChE</u>
System Name	Cholinesterase Catalog No. 450035.	AChE Erythrocyte Cholinesterase Reagent Kit.
Intended Use	Quantative determination of cholinesterase (including erythrocyte cholinesterase) in serum, plasma and blood.	Quantative determination of erythrocyte cholinesterase in whole blood.
Primary Application	Diagnosis of exposure to pesticides.	Diagnosis of exposure to pesticides.
Other Applications	Succinylcholine sensitivity. Diagnosis of liver dysfunction.	Device is not being marketed for other applications.
Operator	Laboratory technician.	Laboratory technician.
Usage Environment	Clinical laboratory.	Clinical laboratory.
Type	Ellman	Ellman
Buffer	Phosphate, pH 7.4	Phosphate, pH 7.6
Reaction Temperature	37 °C	Ambient (15 °C - 35 °C)
Substrate	AcTC	AcTC + As1397
Chromogen	DTNB	DTNB
Sample	1:10 Whole Blood	Whole Blood
Sample Diluent	Water	None
Sample Volume	5 µl	10 µl
Dilution	1:1110	1:220
Test Time	1 minute	3 minutes
Test Volume	0.55 ml	2.2 ml
Calibration	K-factor (Absorptivity)	Absorptivity
Control	Precitrol™	Operator
Calculation	Indirect	Direct
Wavelength	480 nm & 660 nm	450 nm
Units	U/L Erythrocytes at 37 °C	U/g Hgb at 25 °C
Dry Stability	1 year	2 years
Working Stability	7 days (2 °C - 12 °C)	7 days (15 °C - 35 °C)
Hct or Hgb Correction	Offsite, Hct -	Integral, Hgb

### Abbreviations

AcTC, acetylthiocholine; As1397, 10-( $\alpha$ -diethylaminopropionyl)-phenothiazine; DTNB, 5,5'-dithiobis(2-nitrobenzoic acid); Hct, hematocrit; Hgb, hemoglobin; U,  $\mu$ mol/min.

*Fig. 7-B*

## Comparison of Plasma Cholinesterase (PChE) Reagent Systems

	<u>BM/H</u>	<u>Test-mate ChE</u>
System Name	Cholinesterase Catalog No. 450035.	PChE Plasma Cholinesterase Reagent Kit.
Intended Use	Quantative determination of cholinesterase (including plasma cholinesterase) in serum, plasma and blood.	Quantative determination of plasma cholinesterase in whole blood.
Primary Application	Diagnosis of exposure to pesticides.	Diagnosis of exposure to pesticides.
Other Applications	Succinylcholine sensitivity. Diagnosis of liver dysfunction.	Device is not being marketed for other applications.
Operator	Laboratory technician.	Laboratory technician.
Usage Environment	Clinical laboratory.	Clinical laboratory.
Type	Ellman	Ellman
Buffer	Phosphate, pH 7.4	Phosphate, pH 7.6
Reaction Temperature	37 °C	Ambient (15 °C - 35 °C)
Substrate	AcTC	BuTC
Chromogen	DTNB	DTNB
Sample	1:5 Plasma	Whole Blood
Sample Diluent	Saline	None
Sample Volume	5 µl	10 µl
Dilution	1:555	1:220
Test Time	1 minute	3 minutes
Test Volume	0.55 ml	2.2 ml
Calibration	K-factor (Absorptivity)	Absorptivity
Control	Precitrol™	Plasma/Serum/Operator
Calculation	Direct	Direct
Wavelength	480 nm & 660 nm	450 nm
Units	U/L Plasma at 37 °C	U/L Whole Blood at 25 °C
Dry Stability	1 year	2 years
Working Stability	7 days (2 °C - 12 °C)	7 days (15 °C - 35 °C)
Hct or Hgb Correction	None	None

### Abbreviations

AcTC, acetylthiocholine; BuTC, butyrylthiocholine; DTNB, 5,5'-dithiobis(2-nitrobenzoic acid); Hct, hematocrit; Hgb, hemoglobin; U, µmol/min.

*Fig. 7-C*