Cholinesterase FS*
Diagnostic reagent for quantitative in vitro determination of cholinesterase (CHE) in serum or plasma on DiaSys respons®920

Order Information
Cat. No. 1 1401 99 10 921
4 twin containers for 120 determinations each

Method
Kinetic photometric test, optimized method according to the recommendation of the German Society of Clinical Chemistry (DGKC)

Principle
Cholinesterase hydrolyses butyrylthiocholine under release of butyric acid and thiocholine. Thiocholine reduces yellow potassium hexacyanoferrate (III) to colorless potassium hexacyano ferrate (II). The decrease of absorbance is measured at 405 nm.

Butyrylthiocholine + H₂O → Cholinesterase → Thiocione + Butyrate
2 Thiocione + 2[Fe(CN)₆]³⁻ + H₂O → Dithiobis(choline) + 2[Fe(CN)₆]²⁻ + H₂O

Reagents
Components and Concentrations
R1: Potassium phosphate pH 7.6 95 mmol/L
Pyrophosphate  pH 7.6 2.5 mmol/L
R2: Butyrylthiocholine 75 mmol/L

Storage Instructions and Reagent Stability
The reagents are stable up to the end of the indicated month of expiry, if stored at 2 – 8°C, protected from light and contamination is avoided. DiaSys respons containers provide protection from light. Do not freeze the reagents!

Warnings and Precautions
2. To avoid carryover interference, please take care of efficient washing especially after use of interfering reagents. Please refer to the DiaSys respons®920 Carryover Pair Table. Carryover pairs and automated washing steps with the recommended cleaning solution can be specified in the system software. Please refer to the user manual.
3. In very rare cases, samples of patients with gammopathy might give falsified results [5].
4. Please refer to the safety data sheets and take the necessary precautions for the use of laboratory reagents. For diagnostic purposes, the results should always be assessed with the patient’s medical history, clinical examinations and other findings.
5. For professional use only!

Waste Management
Please refer to local legal requirements.

Reagent Preparation
The reagents are ready to use. The bottles are placed directly into the reagent rotor.

Specimen
Serum, heparin or EDTA plasma
Stability [1,2]:
1 week at 15 – 25°C
2 weeks at 2 – 8°C
6 months at -20°C
Discard contaminated specimens. Freeze only once.

Calibrators and Controls
For calibration, DiaSys TruCal U calibrator is recommended. This method is traceable to the molar extinction coefficient. For internal quality control DiaSys TruLab N and P controls should be assayed. Each laboratory should establish corrective action in case of deviations in control recovery.

Performance Characteristics
Measuring range up to 20 kU/L CHE (in case of higher activities re-measure samples after manual dilution with NaCl solution (9 g/L) or use rerun function).

Limit of detection** 0.2 kU/L CHE
On-board stability 8 weeks
Calibration stability 8 weeks

Interferences < 10% by
Ascorbate up to 30 mg/dL
Bilirubin up to 60 mg/dL
Hemoglobin up to 1000 mg/dL
Lipemia (triglycerides) up to 2000 mg/dL

For further information on interfering substances refer to Young DS [3].

Conversion Factor
Cholinesterase [kU/L] x 16.67 = Cholinesterase [µkat/L]

Reference Range [1]
Women 3.93 – 10.8 kU/L 65.5 – 180 µkat/L
Men 4.62 – 11.5 kU/L 77.0 – 192 µkat/L

Each laboratory should check if the reference ranges are transferable to its own patient population and determine own reference ranges if necessary.

Literature

Manufacturer
DiaSys Diagnostic Systems GmbH
Alte Strasse 9 65558 Holzheim Germany
* fluid stable
# Cholinesterase FS

**Application for serum and plasma**

<table>
<thead>
<tr>
<th>Test Details</th>
<th>Test Volumes</th>
<th>Reference Ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test</td>
<td>CHE</td>
<td>Auto Rerun</td>
</tr>
<tr>
<td>Report Name</td>
<td>Cholinesterase</td>
<td>Online Calibration</td>
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<tr>
<td>Unit</td>
<td>kU/L</td>
<td>Decimal Places</td>
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<td>Wavelength-Primary</td>
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<td>Secondary</td>
</tr>
<tr>
<td>Assay Type</td>
<td>RATE-A</td>
<td>Curve Type</td>
</tr>
<tr>
<td>M1 Start</td>
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<td>M1 End</td>
</tr>
<tr>
<td>M2 Start</td>
<td>22</td>
<td>M2 End</td>
</tr>
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<td>Sample Replicates</td>
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<td>Standard Replicates</td>
</tr>
<tr>
<td>Control Replicates</td>
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<td>Control Interval</td>
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<tr>
<td>Prozone Limit %</td>
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<td>Prozone Check</td>
</tr>
<tr>
<td>Technical Minimum</td>
<td>0.20</td>
<td>Technical Maximum</td>
</tr>
<tr>
<td>Y = aX + b</td>
<td>a = 1.0000</td>
<td>b = 0.0000</td>
</tr>
</tbody>
</table>

* Enter calibrator value.

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</thead>
<tbody>
<tr>
<td>Test</td>
<td>CHE</td>
<td></td>
</tr>
<tr>
<td>Sample Type</td>
<td>Serum</td>
<td></td>
</tr>
</tbody>
</table>

### Sample Volumes

- **Normal**: 3.00 µL
- **Increase**: 5.00 µL
- **Decrease**: 2.00 µL
- **Standard Volume**: 3.00 µL

<table>
<thead>
<tr>
<th>Reagent Volumes and Stirrer Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>RGT-1 Volume: 160 µL</td>
</tr>
<tr>
<td>R1 Stirrer Speed: High</td>
</tr>
<tr>
<td>RGT-2 Volume: 40 µL</td>
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<tr>
<td>R2 Stirrer Speed: High</td>
</tr>
</tbody>
</table>

### Reference Range

<table>
<thead>
<tr>
<th>Reference Range</th>
<th>Lower Limit (kU/L)</th>
<th>Upper Limit (kU/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>4.62</td>
<td>11.50</td>
</tr>
<tr>
<td>Panic</td>
<td>0.00</td>
<td>0.00</td>
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</tbody>
</table>

**Sample Types**

- Serum
- Urine
- CSF
- Plasma
- Whole Blood
- Other

**Category**: Male

**Reference Range**

- **Lower Limit (kU/L)**
- **Upper Limit (kU/L)**

**Consumables/Calibrators**

- **Blank / Level 0**: 0
- **Calibrator 1**: *

**Y = aX + b**

- **a**: 1.0000
- **b**: 0.0000