Glutamate Assay for Cedex Bio and Cedex Bio HT Analyzers
High performance and reproducibility with accurate data

The Glutamate Assay developed for the Cedex Bio and Cedex Bio HT Analyzers provides accurate and consistent quantitative measurement of glutamate in cell culture and fermentation media. The assay technology is based on a colorimetric method where L-glutamate in a sample is oxidized by L-glutamate oxidase. One of the byproducts, H\textsubscript{2}O\textsubscript{2}, generates quinone dye in the presence of peroxidase. The formation of dye is measured photometrically at 340 nm and is directly proportional to the glutamate concentration.

Glutamate $\rightarrow$ GOD $\rightarrow$ α-ketoglutarate $\rightarrow$ H\textsubscript{2}O\textsubscript{2} $\rightarrow$ 4-AAP $\rightarrow$ TOOS $\rightarrow$ POD $\rightarrow$ Quinone dye $\rightarrow$ H\textsubscript{2}O

**Trust results to make high confidence decisions**
- High comparability to HPLC
- Wide range with automated on-board dilution capability
- Proven accuracy, reproducibility and precision

**Benefit from a wide and sensitive measuring range**

<table>
<thead>
<tr>
<th>Glutamate Bio and Glutamate Bio HT</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Glutamate Bio and Glutamate Bio HT</td>
</tr>
<tr>
<td></td>
<td>15 to 1,500 mg/L, up to 150 g/L with automatic predilution and</td>
</tr>
<tr>
<td></td>
<td>0.1 to 10 mmol/L, up to 1.0 mol/L with automatic predilution</td>
</tr>
</tbody>
</table>

**Conserve sample with low volume requirement**
- Sample volume of 2 μl per test

Figure 1: Glutamate concentrations in medium over a production period of 16 days were monitored on the Cedex Bio Analyzer, on a membrane analyzer, and with HPLC. (Verification data of Roche Pharma)
Rely on efficiency to make the right decision

<table>
<thead>
<tr>
<th></th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.57 mmol/L</td>
<td>3.47 mmol/L</td>
<td>6.66 mmol/L</td>
</tr>
<tr>
<td></td>
<td>(83.85 mg/L)</td>
<td>(510.4 mg/L)</td>
<td>(979.7 mg/L)</td>
</tr>
<tr>
<td>CV in-run</td>
<td>0.4 %</td>
<td>0.3 %</td>
<td>0.5 %</td>
</tr>
<tr>
<td>CV inter-run</td>
<td>1.6 %</td>
<td>2.1 %</td>
<td>1.9 %</td>
</tr>
</tbody>
</table>

- Automated dilution extended the measuring range
- ≤3% variability between duplicates (a & b)

Save time with improved workflow efficiency
- Ready-to-use reagents
- Long on-board and calibration curve stability
- Barcoded reagents

<table>
<thead>
<tr>
<th></th>
<th>Cedex Bio</th>
<th>Cedex Bio HT</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-board stability</td>
<td>4 weeks</td>
<td>8 weeks</td>
</tr>
<tr>
<td>Calibration curve</td>
<td>8 weeks</td>
<td>8 weeks</td>
</tr>
<tr>
<td>stability</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Take control of your bioprocess with the Cedex portfolio
- Broad and expandable assay menu
- 2 instrument platforms with identical technology, menu and reagents to fit throughput, automation needs
- Solutions for development and manufacturing environments

Ordering information

<table>
<thead>
<tr>
<th>Product</th>
<th>Pack size</th>
<th>Catalog number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glutamate V2 Bio</td>
<td>4 x 50 tests</td>
<td>07 395 582 001</td>
</tr>
<tr>
<td>Glutamate V2 Bio HT</td>
<td>200 tests</td>
<td>07 395 566 001</td>
</tr>
<tr>
<td>Calibrator A Bio</td>
<td>6 x 1 ml</td>
<td>06 682 189 001</td>
</tr>
<tr>
<td>Control A Level 1 Bio</td>
<td>6 x 1 ml</td>
<td>06 682 197 001</td>
</tr>
<tr>
<td>Control A Level 2 Bio</td>
<td>6 x 1 ml</td>
<td>06 682 227 001</td>
</tr>
<tr>
<td>Control A Level 3 Bio</td>
<td>6 x 1 ml</td>
<td>06 682 545 001</td>
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</table>

Regulatory disclaimer
For use in quality control/manufacturing process only.

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Published by
Roche Diagnostics GmbH
Sandhofer Straße 116
68305 Mannheim
Germany

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