K8003 PARACETAMOL 2 Reagent System
Paracetamol (Acetaminophen) Enzyme

- 2 Reagent System consisting of Paracetamol Enzyme and Colour Reagent
- No interference from N-acetyl cysteine or Paracetamol metabolites
- No pipetting steps for Paracetamol Enzyme reconstitution
- Larger pack size reduces storage volume
- Protocols for automated analysers
- Claims and performance unchanged compared to K8002 3 reagent system

**Indication**
The paracetamol assay is an enzymatic assay for the detection and quantification of free paracetamol in human sera or plasma.

**Summary and explanation of test**
Paracetamol is a commonly used analgesic which, if taken in excessive amounts, can lead to toxic liver damage and, less commonly, to renal impairment.

The method is based on the use of an enzyme specific for the amide bond of acylated aromatic amines. It cleaves the paracetamol molecule, yielding p-aminophenol, which reacts specifically with o-cresol in ammoniacal copper solution to produce a blue colour. The assay is specific for the parent compound and does not detect paracetamol metabolites.

\[
\text{Acetaminophen} \xrightarrow{\text{Arylacylamidase}} \text{p-aminophenol} + \text{acetic acid}
\]
\[
\text{p-aminophenol} + \text{o-cresol} + \text{ammoniacal copper sulphate} \rightarrow \text{indophenol}
\]

**Linearity**

![K8003 Linearity Study](image)

- Dynamic Range:
  - 0.01 - 4.00 mmol/L
  - 1.51 - 604.8 mg/L
- Regression Analysis:
  - \( y = 0.5979x + 0.0113 \)
  - \( r = 0.9998 \)

**Safety Datasheet & Protocols available on request.**
Paracetamol Enzyme Assay Kit
Catalogue No. K8003

- **Precision**

<table>
<thead>
<tr>
<th></th>
<th>Intra-assay precision (n = 20)</th>
<th>Inter-assay precision (n = 20)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (mmol/L)</td>
<td>Mean (mg/L)</td>
</tr>
<tr>
<td>0.20</td>
<td>0.23</td>
<td>34.8</td>
</tr>
<tr>
<td>0.37</td>
<td>0.41</td>
<td>62.0</td>
</tr>
<tr>
<td>1.17</td>
<td>1.18</td>
<td>178.4</td>
</tr>
</tbody>
</table>

- **Correlation**

Recovery of paracetamol added to human sera showed the following results:

<table>
<thead>
<tr>
<th>Paracetamol (mmol/L)</th>
<th>% Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.48</td>
<td>103.1</td>
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<tr>
<td>0.84</td>
<td>99.4</td>
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<td>1.20</td>
<td>100.3</td>
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<tr>
<td>1.56</td>
<td>99.0</td>
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<tr>
<td>1.92</td>
<td>98.6</td>
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</tbody>
</table>

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