N-Acetylglucosaminidase (beta-NAG) Activity Assay Kit (Colorimetric) ab204705

Overview

**Product name**  N-Acetylglucosaminidase (beta-NAG) Activity Assay Kit (Colorimetric)

**Detection method**  Colorimetric

**Sample type**  Urine, Serum, Tissue, Adherent cells, Suspension cells

**Assay type**  Enzyme activity

**Sensitivity**  50 µU

**Assay time**  0h 25m

**Species reactivity**  Reacts with: Other species, Mammals

**Product overview**  N-Acetylglucosaminidase (beta-NAG) Activity Assay Kit (Colorimetric) (ab204705) provides a simple and sensitive method for monitoring NAG enzymatic activity. In this assay, NAG uses a synthetic p-nitrophenol derivative (R-pNP) as a NAG substrate and releases pNP which can be measured at absorbance (OD 400 nm). The assay can detect as low as 50 µU of NAG activity in a variety of samples.

beta-NAG assay protocol summary:
- add samples and standards to wells
- add NAG substrate and incubate for 5-30 min
- add stop solution and incubate for 10 min
- analyze with microplate reader

**Notes**  β-N-Acetylglucosaminidase (NAG, EC 3.2.1.52) is a lysosomal enzyme that is expressed in various tissues, including kidney, liver and lungs. NAG can cleave N-acetyl-glucosamine, a monosaccharide derivative of glucose. Its concentration in urine is minimal due to its inability to cross the glomerular basal membrane. Increased concentration of NAG in urine indicates renal tubular cell breakdown. Acute Kidney Injury (AKI) is the sudden loss of kidney functions, causing electrolyte imbalance, and retention of urea and other nitrogenous products. NAG has become one of the most studied and used biomarkers for the detection and diagnosis of AKI.

**Platform**  Microplate reader

**Storage instructions**  Store at -20°C. Please refer to protocols.
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Typical pNP Standard calibration curve.

Measurement of NAG activity in human urine from different donors. Undiluted samples (70 µL) were incubated for 30 min. with NAG substrate.

<table>
<thead>
<tr>
<th>Components</th>
<th>100 tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAG Assay Buffer</td>
<td>1 x 35ml</td>
</tr>
<tr>
<td>NAG Positive Control</td>
<td>1 vial</td>
</tr>
<tr>
<td>NAG Stop Solution</td>
<td>1 x 3ml</td>
</tr>
<tr>
<td>NAG Substrate</td>
<td>1 x 6ml</td>
</tr>
<tr>
<td>p-Nitrophenol (pNP) (20 mM)</td>
<td>1 x 100µl</td>
</tr>
</tbody>
</table>
Measurement of NAG activity in mouse kidney (10 µg) and human serum (20 µL). Samples were incubated for 30 min. with NAG substrate.

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