

# Glutaminase (EC 3.5.1.2), *Escherichia coli*

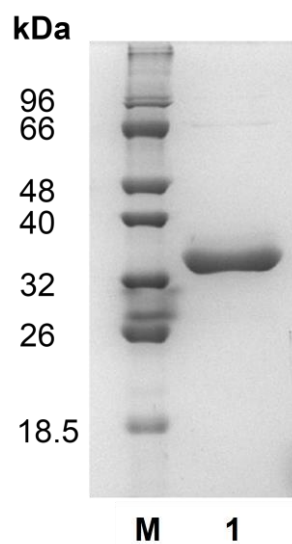
Catalogue number	Presentation
AE00071	2500 U (1 mL)

## Description

Glutaminase (EC 3.5.1.2) is purified from a recombinant *E. coli* strain. Glutaminase is an amidohydrolase enzyme which generates glutamate from glutamine. Glutaminase has tissue-specific isoenzymes. Importantly, glutaminase is found in glial cells. Glutaminase is expressed in periportal hepatocytes, where it generates  $\text{NH}_3$  (ammonia) for urea synthesis, as does glutamate dehydrogenase. Glutaminase is also expressed in the epithelial cells of the renal tubules, where the produced ammonia is excreted as ammonium ions. This excretion of ammonium ions is an important mechanism of renal acid-base regulation. During an acidosis, glutaminase is induced in the kidney, which leads to an increase in the amount of ammonium ions excreted. The enzyme is provided in 2.5 M lithium sulphate. Swirl the enzyme mix immediately prior to use.

## Purity

Glutaminase has been determined to be >95% pure, according to SDS polyacrylamide gel electrophoresis (PAGE) followed by Coomassie Blue staining (Figure 1).



**Figure 1.** SDS-PAGE analysis of *E. coli* glutaminase. Electrophoresis was performed using a 12% polyacrylamide gel. Lane M, molecular weight marker; Lane 1, purified glutaminase (33.6 kDa).

## Storage temperature

Glutaminase should be stored at 2°C to 8°C.

## Temperature and pH optimum

The optimum pH and temperature are 4.9 and 37 °C, respectively.

## Activity

2500 U/mL

## Unit Definition

One Unit of glutaminase is defined as the amount of enzyme required to deaminate one  $\mu$ mole of L glutamine to L-glutamate +  $\text{NH}_4^+$  in a reaction mixture containing 40 mM Sodium acetate buffer, pH 4.9, 40 mM L-Glutamine at 25 °C. Liberated  $\text{NH}_4^+$  was measured using the Ammonia Kit (AK00091). Refer to the Ammonia Kit brochure at [www.nzytech.com](http://www.nzytech.com).

## Substrate specificity

Under the reaction conditions specified the enzyme does not present any other detectable enzymatic activities.

For life science research only. Not for use in diagnostic procedures.