

Arginase (EC 3.5.3.1), *Homo sapiens* liver

Catalogue number:

AE00211, 1950 U (1 ml)

Description

Arginase (L-arginine amidinohydrolase, EC 3.5.3.1) is a manganese-containing enzyme that catalyses the hydrolysis of L-arginine to L-ornithine and urea. It is abundantly present in the liver of ureotelic animals, where catalyses the final step in the urea cycle. The deficiency, known as hyperargininemia or arginemia, is hereditary and autosomal recessive. It is characterized by lowered activity of arginase in hepatic cells. Symptoms of the disorder include neurological impairment, dementia, retardation of growth and hyperammonemia. NZYTech's arginase comprises the recombinant human liver enzyme expressed and purified from a modified *Escherichia coli* strain. The enzyme is provided in 2.5 M lithium sulphate. The specific activity, at 30 °C, is 390 U/mg protein (measured at pH 8.3, using 50 mM L-arginine as substrate).

Purity

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

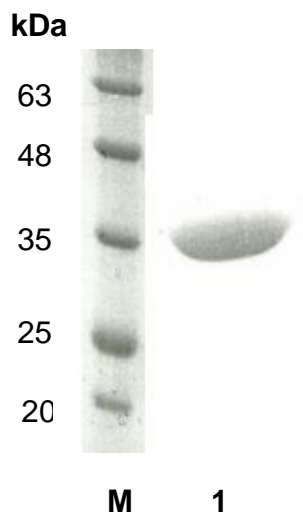


Figure 1. SDS-PAGE analysis of human liver arginase. Electrophoresis was performed using a 12% polyacrylamide gel. Lane M, molecular weight marker; Lane 1, purified arginase (35 kDa).

Storage temperature

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

Temperature and pH optimum

The optimum ranges of pH and temperature are 10-11 and 25-40 °C, respectively.

Specific activity

1950 U/ml.

Unit definition

One Unit of arginase was defined as the amount of enzyme required to produce one micromole of urea for 1 min at 30 °C and pH 8.3.

References

Ikemoto *et al.* (1990) Biochemical Journal 270, 697-703.

Silva *et al.* (2008) Molecular & Biochemical Parasitology 159, 104-111.

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Certificate of Analysis

Test	Criteria	Result
Protein purity	Purity in line with the stated value	Meets specification
Protein concentration	Concentration in line with the stated value	Meets specification
Catalytic activity	Activity in line with the stated value	Meets specification
Blank assay variability	Absorbance values with less than 10% of variability	Meets specification

Approved by:



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