

GPT Protein, Rat, Recombinant (His)

General Information

Synonyms:	Gpt1;ALAT;glutamic-pyruvate transaminase (alanine aminotransferase)
Protein Construction:	A DNA sequence encoding the rat Gpt1 (NP_112301.1) (Met 1-Ser 496) with a C-terminal polyhistidine tag was expressed. Predicted N terminal: Met 1
Species:	Rat
Expression Host:	Baculovirus Insect Cells
Accession:	A6HSC5
Molecular Weight:	55 kDa (predicted); 48 kDa (reducing conditions)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 95 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 50 mM Tris, 100 mM NaCl, pH 8.0, 10% glycerol, 0.5 mM TCEP. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Alanine aminotransferase (ALT), also known as glutamate pyruvate transaminase (GPT), is a pyridoxal enzyme that belongs to the class-I pyridoxal-phosphate-dependent aminotransferase family, Alanine aminotransferase subfamily. Gpt / Gpt1 / ALT catalyzes the reversible interconversion of L-alanine and 2-oxoglutarate to pyruvate and L-glutamate and plays a key role in the intermediary metabolism of glucose and amino acids. Gpt / Gpt1 / ALT is expressed in the liver, kidney, heart, and skeletal muscles and it expresses at moderate levels in the adipose

tissue. As a key enzyme for gluconeogenesis, Gpt is a widely-used serum marker for liver injury. Two ALT isoenzymes have been identified, ALT1 and ALT2 (GPT1 and GPT2), which are encoded by separate genes and share significant sequence homology, but differ in their expression patterns. GPT1/GPT is widely distributed and mainly expressed in the intestine, liver, fat tissues, colon, muscle, and heart, in the order of high to low expression level. Serum activity levels of this enzyme are routinely used as a biomarker of liver injury caused by drug toxicity, infection, alcohol, and steatosis.

Reference

Bergmeyer HU, et al. (1978) Optimization of methods for aspartate aminotransferase and alanine aminotransferase. Clin Chem. 24(1): 58-73.

King MC, et al. (1980) Allele increasing susceptibility to human breast cancer may be linked to the glutamate-pyruvate transaminase locus. Science. 208(4442): 406-8.

Prati D, et al. (2002) Updated definitions of healthy ranges for serum alanine aminotransferase levels. Ann Intern Med. 137(1): 1-10.

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