

# PRODUCT INFORMATION



## $\alpha$ -Enolase (human, recombinant)

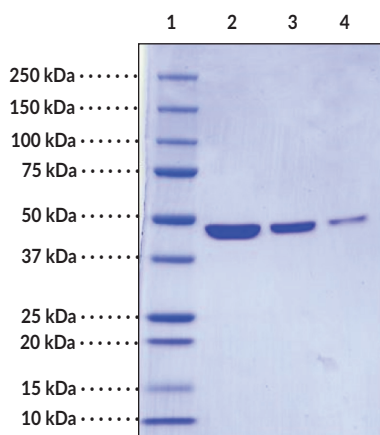
Item No. 25151

### Overview and Properties

**Synonym:** Enolase-1  
**Source:** Recombinant enolase expressed in *E. coli*  
**Amino acids:** 1-434 (full length)  
**Uniprot No.:** P06733  
**Molecular Weight:** 47.74 kDa  
**Storage:** -80°C (as supplied); avoid freeze/thaw cycles by aliquoting protein  
**Stability:**  $\geq 1$  year  
**Purity:**  $\geq 95\%$  estimated by SDS-PAGE  
**Supplied in:** 20 mM HEPES, pH 7.5, 150 mM sodium chloride, and 5% glycerol  
**Protein Concentration:** *batch specific*

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Image



Lane 1: MW Markers  
Lane 2:  $\alpha$ -Enolase (5  $\mu$ g)  
Lane 3:  $\alpha$ -Enolase (2.5  $\mu$ g)  
Lane 4:  $\alpha$ -Enolase (1  $\mu$ g)

Representative gel image shown; actual purity may vary between each batch.

WARNING  
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY  
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## Description

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$\alpha$ -Enolase, also known as enolase-1, is a glycolytic enzyme that catalyzes the conversion of 2-phosphoglycerate to phosphoenolpyruvate.<sup>1</sup> It is ubiquitously expressed in human tissues, including liver, spleen, kidney, and brain. In cells,  $\alpha$ -enolase is primarily localized to the cytoplasm, however, an alternatively translated form localizes to the nucleus and lacks glycolytic enzyme activity.<sup>1,2</sup>  $\alpha$ -Enolase also functions as a cell surface receptor for plasminogen on pathogens and activated immune cells, as an oxidative stress protein in endothelial cells, and as a chromatin binding partner to facilitate transcription.<sup>2-4</sup> The *ENO1* promoter contains a hypoxia-response element, allowing  $\alpha$ -enolase to facilitate aerobic glycolysis and contribute to the Warburg effect in tumor cells.<sup>2</sup>  $\alpha$ -Enolase is overexpressed in multiple tumors, including glioma, neuroblastoma, pancreatic, prostate, and hepatocellular carcinomas. Its role as a plasminogen receptor facilitates extracellular matrix degradation and cancer invasion.<sup>4</sup>  $\alpha$ -Enolase is an autoantigen in asthma, Hashimoto's encephalopathy, and rheumatoid arthritis, and has been found in the serum of pediatric patients with juvenile idiopathic arthritis.<sup>5-8</sup>

## References

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