# PRODUCT INFORMATION

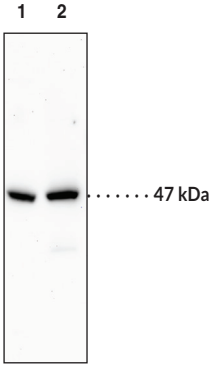
## α-Enolase Polyclonal Antibody

*Item No. 20491*

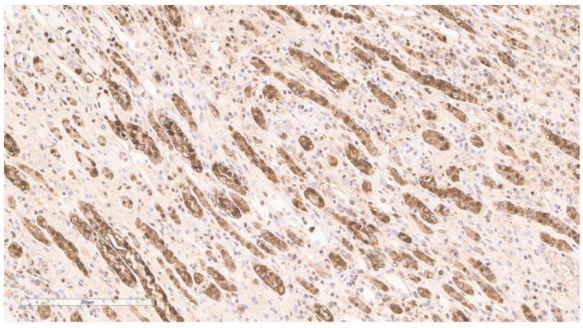
### Overview and Properties

| | |
|---|---|
| **Contents:** | This vial contains 500 µl of protein A-purified polyclonal antibody. |
| **Synonym:** | Enolase-1, MBP-1, MPB-1, NNE, Non-Neural Enolase, Phosphopyruvate Hydratase, Plasminogen-Binding Protein, ENO1 |
| **Immunogen:** | Full length recombinant human α-enolase |
| **Species Reactivity:** | (+) Human; other species not tested |
| **Uniprot No.:** | P06733 |
| **Form:** | Liquid |
| **Storage:** | -20°C (as supplied) |
| **Stability:** | ≥3 years |
| **Storage Buffer:** | TBS, pH 7.4, with 50% glycerol, 0.1% BSA, and 0.02% sodium azide |
| **Host:** | Rabbit |
| **Applications:** | ELISA, Immunohistochemistry (IHC), and Western blot (WB); the recommended starting dilution for WB is 1:200, 1:100 for IHC, and 1:500 for ELISA. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically. |

### Images




**Lane 1:** HeLa cell lysates (25 µg)
**Lane 2:** MCF-7 cell lysates (25 µg)



Immunohistochemistry analysis of formalin-fixed, paraffin-embedded (FFPE) human kidney tissue after heat induced antigen retrieval in pH 6.0 citrate buffer. After incubation with α-Enolase Polyclonal Antibody (Item No. 20491) at a 1:100 dilution, slides were incubated with biotinylated secondary antibody, followed by alkaline phosphatase-streptavidin and chromogen (DAB).



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## Description

α-Enolase, also known as enolase 1, is a glycolytic enzyme that catalyzes the conversion of 2-phosphoglycerate to phosphoenolpyruvate.[1] It is ubiquitously expressed in human tissues, including liver, spleen, kidney, and brain. In cells, α-enolase is primarily localized to the cytoplasm, however, an alternatively translated form localizes to the nucleus and lacks glycolytic enzyme activity.[1,2] α-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.[2-4] The *ENO1* promoter contains a hypoxia-response element, allowing α-enolase to facilitate aerobic glycolysis and contribute to the Warburg effect in tumor cells.[2] α-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.[4] α-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.[5-8] Cayman's α-Enolase Polyclonal Antibody can be used for Western blot and ELISA applications. The antibody recognizes α-enolase at ~47 kDa from human samples.

## References


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3. Subramanian, A. and Miller, D.M. Structural analysis of α-enolase. Mapping the functional domains involved in down-regulation of the *c-myc* protooncogene. *J. Biol. Chem.* **275(8)**, 5958-5965 (2000).
4. Hsiao, K.-C., Shih, N.-Y., Fang, H.-L., *et al.* Surface α-enolase promotes extracellular matrix degradation and tumor metastasis and represents a new therapeutic target. *PLoS One* **8(7)**, e69354 (2013).
5. Nahm, D.-H., Lee, K.-H., Shin, J.-Y., *et al.* Identification of α-enolase as an autoantigen associated with severe asthma. *J. Allergy Clin. Immunol.* **118(2)**, 376-381 (2006).
6. Moore, T.L., Gillian, B.E., Crespo-Pagnussat, S., *et al.* Measurement and evaluation of isotypes of anti-citrullinated fibrinogen and anti-citrullinated α-enolase antibodies in juvenile idiopathic arthritis. *Clin. Exp. Rheumatol.* **32(5)**, 740-746 (2014).
7. Yoneda, M., Fujii, A., Ito, A., *et al.* High prevalence of serum autoantibodies against the amino terminal of α-enolase in Hashimoto's encephalopathy. *J. Neuroimmunol.* **185(1-2)**, 195-200 (2007).
8. Cong, Y., Wang, L., Peng, R., *et al.* Timosaponin AIII induces antiplatelet and antithrombotic activity *via* Gq-mediated signaling by the thromboxane $A_2$ receptor. *Sci. Rep.* **6:38757**, (2016).



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