ENO1 Antibody / Enolase 1 / Alpha Enolase (FY13380)

Catalog No.	Formulation	Size
FY13380	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	P06733
Applications	Western Blot : 0.25-0.5ug/ml Immunohistochemistry : 2-5ug/ml Flow Cytometry : 1-3ug/million cells
Limitations	This ENO1 antibody is available for research use only.

Description

ENO1 antibody detects Enolase 1, also known as alpha-enolase, a glycolytic enzyme encoded by the ENO1 gene on chromosome 1p36.23. ENO1 catalyzes the reversible dehydration of 2-phosphoglycerate to phosphoenolpyruvate in the glycolytic pathway and serves multiple non-glycolytic roles, including acting as a plasminogen-binding receptor on the cell surface. ENO1 is ubiquitously expressed in most tissues, with high levels in brain, muscle, and epithelial cells, where it contributes to energy metabolism and cellular adaptation under hypoxic conditions.

Structurally, ENO1 is a 48 kDa homodimeric enzyme that belongs to the enolase family of metalloenzymes. It requires magnesium ions for catalytic activity and forms part of the glycolytic enzyme network in the cytosol. ENO1 also functions as a moonlighting protein, existing in different subcellular locations and performing distinct functions. In addition to its cytoplasmic role, a nuclear isoform, MBP-1 (Myc-binding protein 1), acts as a transcriptional repressor of the oncogene MYC. Surface-localized ENO1 binds plasminogen, promoting extracellular matrix degradation and cell migration.

Functionally, ENO1 plays a dual role in metabolism and cellular regulation. In glycolysis, it facilitates ATP generation by catalyzing one of the final steps of the pathway. On the plasma membrane, it promotes cell migration and invasion by enhancing plasmin-mediated proteolysis. The MBP-1 isoform contributes to tumor suppression by downregulating MYC

expression. ENO1 also acts as a stress response protein, supporting cell survival under hypoxic and oxidative stress conditions. Known ligands include plasminogen and structural components of the cytoskeleton, such as actin and tubulin.

Aberrant expression of ENO1 has been linked to cancer, autoimmune disease, and neurodegenerative disorders. Overexpression supports the Warburg effect in tumor metabolism, whereas autoantibodies against ENO1 have been detected in Hashimoto's encephalopathy and systemic autoimmune diseases. Pathway involvement includes glycolysis, gluconeogenesis, and plasminogen activation. During embryonic development, ENO1 expression supports rapid cell proliferation and differentiation.

Immunohistochemical staining using ENO1 antibody reveals cytoplasmic and membranous localization in epithelial cells and neurons. The ENO1 antibody from NSJ Bioreagents is an excellent reagent for research into glycolysis, tumor metabolism, and stress response signaling.

Application Notes

Optimal dilution of the ENO1 antibody should be determined by the researcher.

Immunogen

A synthetic peptide corresponding to a sequence in the middle region of human ENO1 was used as the immunogen for the ENO1 antibody.

Storage

After reconstitution, the ENO1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.