

# Enolase (5A4): sc-51880

## BACKGROUND

Enolases have been characterized as highly conserved cytoplasmic glycolytic enzymes that may be involved in differentiation. Three isoenzymes have been identified:  $\alpha$  Enolase,  $\beta$  Enolase and  $\gamma$  Enolase.  $\alpha$  Enolase expression has been detected on most tissues, whereas  $\beta$  Enolase is expressed predominantly in muscle tissue and  $\gamma$  Enolase is detected only in nervous tissue. These isoforms exist as both homodimers and heterodimers, and they play a role in converting phosphoglyceric acid to phosphoenolpyruvic acid in the glycolytic pathway. The 433 amino acid protein shows 67% homology to yeast Enolase and 94% homology to rat nonneural Enolase. Studies also indicate that  $\alpha$  Enolase is encoded by the same gene that encodes  $\tau$ -crystallin, a lens structural protein.

## REFERENCES

- Whitehead, M.C., et al. 1982. Synapse formation is related to the onset of neuron-specific Enolase immunoreactivity in the avian auditory and vestibular systems. *Dev. Neurosci.* 5: 298-307.
- Giallongo, A., et al. 1986. Molecular cloning and nucleotide sequence of a full-length cDNA for human  $\alpha$  Enolase. *Proc. Natl. Acad. Sci. USA* 83: 6741-6745.
- Wistow, G.J., et al. 1989.  $\tau$ -crystallin/ $\alpha$  Enolase: one gene encodes both an enzyme and a lens structural protein. *J. Cell Biol.* 107: 2729-2736.

## CHROMOSOMAL LOCATION

Genetic locus: ENO2 (human) mapping to 12p13.31; Eno2 (mouse) mapping to 6 F2.

## SOURCE

Enolase (5A4) is a mouse monoclonal antibody raised against purified neuron-specific enolase from brain of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>2a</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Enolase (5A4) is recommended for detection of neuron-specific Enolase of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of Enolase: 48 kDa.

Positive Controls:  $\gamma$  Enolase (h): 293T Lysate: sc-170262, Hep G2 cell lysate: sc-2227 or A549 cell lysate: sc-2413.

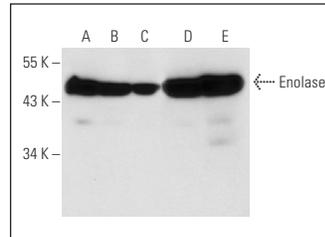
## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

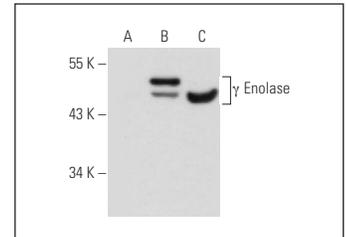
## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## DATA



Enolase (5A4): sc-51880. Western blot analysis of Enolase expression in IMR-32 (A), Hep G2 (B), A549 (C) and SH-SY5Y (D) whole cell lysates and mouse brain tissue extract (E).



Enolase (5A4): sc-51880. Western blot analysis of  $\gamma$  Enolase expression in non-transfected 293T: sc-117752 (A), human  $\gamma$  Enolase transfected 293T: sc-170262 (B) and Y79 (C) whole cell lysates.

## SELECT PRODUCT CITATIONS

- Lachance, P.E., et al. 2007. Gene profiling of pooled single neuronal cell bodies from laser capture microdissected vervet monkey lateral geniculate nucleus hybridized to the rhesus macaque genome array. *Brain Res.* 1185: 33-44.
- Andreev, V.P., et al. 2012. Label-free quantitative LC-MS proteomics of Alzheimer's disease and normally aged human brains. *J. Proteome Res.* 11: 3053-3067.
- Lehman, J.A., et al. 2013. Serdemetan antagonizes the Mdm2-HIF1 $\alpha$  axis leading to decreased levels of glycolytic enzymes. *PLoS ONE* 8: e74741.
- Li, G., et al. 2017. Hypothermia exerts early neuroprotective effects involving protein conjugation of SUMO-2/3 in a rat model of middle cerebral artery occlusion. *Mol. Med. Rep.* 16: 3217-3223.
- Han, D., et al. 2017. The neuroprotective effects of muscle-derived stem cells via brain-derived neurotrophic factor in spinal cord injury model. *Biomed. Res. Int.* 2017: 1972608.
- Wu, T., et al. 2020. Comparison of the differentiation of dental pulp stem cells and periodontal ligament stem cells into neuron-like cells and their effects on focal cerebral ischemia. *Acta Biochim. Biophys. Sin.* 52: 1016-1029.
- Martin, C.A., et al. 2022. Adipose tissue derived stromal cells in a gelatin-based 3D matrix with exclusive ascorbic acid signalling emerged as a novel neural tissue engineering construct: an innovative prototype for soft tissue. *Regen. Biomater.* 9: rbac031.



See **Enolase (A-5): sc-271384** for Enolase antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.