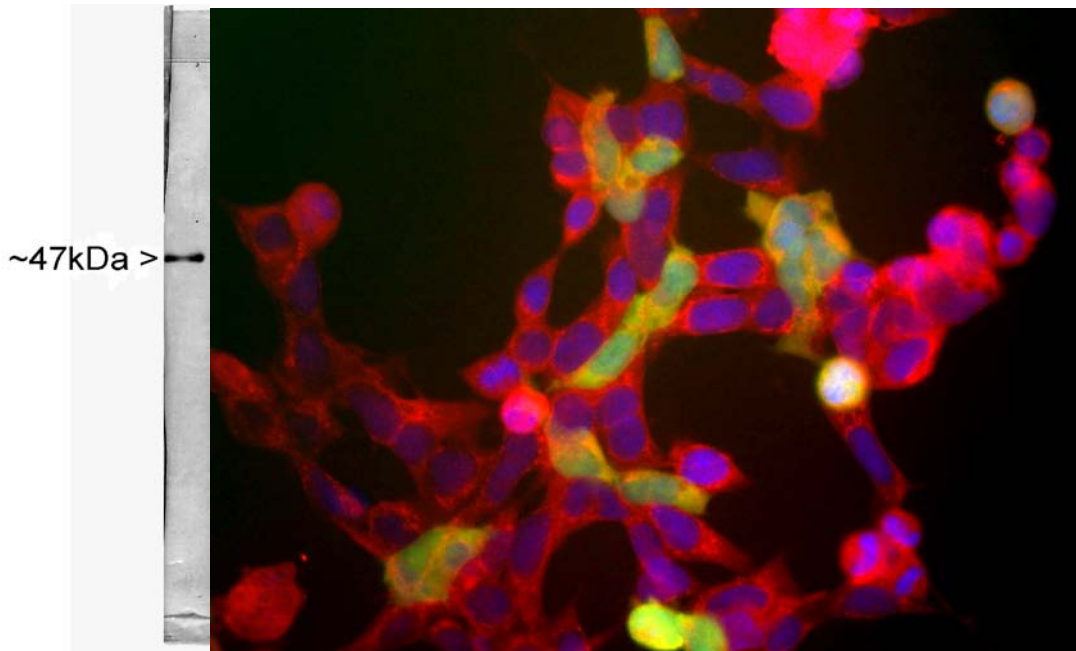


Catalogue# RPCA-NSE: Rabbit Polyclonal Antibody to Neuron Specific Enolase

Immunogen: Neuron specific enolase (NSE) is an enzyme which catalyzes the conversion of 2-phosphoglycerate to phosphoenolpyruvate in the glycolytic pathway, and also the reverse reaction in gluconeogenesis. It is one of three mammalian enolases, which are also known as ENO1, ENO2, and ENO3 or alternately as enolase alpha, beta and gamma. The three enolases have different cell type specific expression patterns, so that antibodies to them are useful cell type specific markers. NSE corresponds to ENO2 or enolase gamma and is heavily expressed in neuronal cells. ENO1 is also known as enolase alpha and as non-neuronal enolase. The third enolase, ENO3 or enolase beta, is expressed in muscle cells. Perhaps not surprisingly, since neurons require a great deal of energy, they are very rich in glycolytic enzymes such as GAPDH and NSE.

Antibodies to this protein are therefore useful to identify neuronal cell bodies, developing neuronal lineage and neuroendocrine cells. Release of NSE from damaged neurons into CSF and blood has also been used as a biomarker of neuronal injury (2). The [HGNC](#) name for this protein is [ENO2](#).



Left: Blot of rat spinal cord probed with rabbit antibody to NSE. The antibody stains a single sharp band corresponding to NSE at about 47 kDa. **Right:** [HEK293](#) (Human Embryonic Kidney 293) cells which express many neuronal proteins (1). The red channel shows staining with RPCA-NSE, which recognizes all of these cells. The green channels shows staining for another neuronal marker with EnCor's monoclonal antibody to ubiquitin C-terminal hydrolase 1 (UCHL1), [MCA-BH7](#). This neuronal gene is apparently activated in a cell density dependent fashion and at this stage only a few cells express this protein. However, all cells that express NSE also express UCHL1.

Antibody Characteristics: Antibody was raised in rabbit against recombinant full length human NSE purified from *E. coli*. This antibody is serum with total protein content about 60 mg/mL. Store at 4°C or -20°C. Avoid repeat freezing and thawing.

Suggestions for use: Try at dilutions of ~1:500 for immunofluorescence. For western blots try at 1:2,000. A suitable control tissue is rat spinal cord or peripheral nerve homogenate. The NSE protein runs at ~47 kDa on SDS-PAGE gels, and is a prominent component of brain, spinal cord and especially cortical extracts.

References:

1. Shaw, G . Morse, S., Ararat, M. and Graham, F. Transformation of human cells by human adenoviruses and the origins of HEK 293 cells. [Faseb Journal 16:869-871 \(2002\)](#).
2. Begaz, T., Kyriacou, D. N., Segal, J. and Bazarian, J. J. Serum biochemical markers for post-concussion syndrome in patients with mild traumatic brain injury. [J. Neurotrauma 23:1201-1210 \(2006\)](#).

Limitations: This product is for research use only and is not approved for use in humans or in clinical diagnosis.

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