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# Anti- NSE gamma Antibody MSVA-451M / Mouse monoclonal

Human SwissProt	P09104
Human Gene Symbol	ENO2
Synonyms	-phospho-D-glycerate hydrolyase; ENO2; ENOG; Enolase 2 gamma neuronal; Enolase2; Gamma-enolase; Neural enolase; Neuron specific gamma enolase; Neuron-specific enolase; NSE
Specificity	NSEgamma
Immunogen	Synthetic peptide of human NSEgamma
lsotype	Mouse / IgG1, kappa
Species Reactivity	Human
Localization	Cytoplasmic

Storage & Stability	Antibody with azide – store at 2 to 8 C. Antibody without azide – store at -20 to -80 C. Antibody is stable for 24 months. Non- hazardous. No MSD required.
Supplied As	200ug/ml of Ab Purified from Bioreactor Concentrate by Protein A/G. Prepared in 10mM PBS with 0.05% BSA & 0.05% azide. Also available without BSA
Positive Control	In the colon, axons and ganglion cells in lamina propria and muscular wall must show at least a moderate NSE staining, while epithelial and lymphatic cells remain negative.
Negative Control	In the colon, epithelial and lymphatic cells do not show NSE staining.



Positive NSE immunostaining of islets of Langerhans

Strong NSE immunostaining in an adrenal pheochromocvtoma.

## Biology

Neuron specific enolase (NSE), is a 78 kDa phosphopyruvate hydratase encoded by the ENO2 (enolase 2) gene at 12p13.31. NSE is a glycolytic enzyme involved in the energy-generating process of the cell. It catalyzes the conversion of 2phosphoglycerate to phosphoenolpyruvate Gamma-enolase. NSE gamma is largely tissue specific. It appears in the final stages of neuronal differentiation and can thus be utilized as a marker for nerve cell maturation. Immunohistochemical detection of NSE with antibodies can be used to identify neuronal cells and cells with neuroendocrine differentiation. NSE is also a commonly used serum marker for the monitoring of cancer patients. Its blood level is elevated in various NSE expressing cancers. In normal tissues, NSE is most strongly expressed in neuronal cells of the brain where it is also seen in all nerve fibres. An at least weak to moderate immunostaining is seen in axons and ganglion cells of the peripheral nerves which are particularly frequent in the gastrointestinal wall and in the seminal vesicle. NSE shows moderate to strong expression in the medulla but not the cortex of the adrenal gland. NSE is only rarely detectable in a small fraction of cells of the diffuse neuroendocrine system. In tumors, NSE nse expression is seen in a large fraction of neuroendocrine tumors and carcinomas including small cell neuroendocrine tumors irrespective of their origins, Merkel cell carcinoma, medullary thyroid cancer, pheochromocytoma and granular cell tumors. Renal clear cell carcinoma is the most commonly NSE positive non-neuroendocrine cancer. Many other tumor types can show NSE immunostaining in some instances, however.

cell layer and in the fibres of the white matter of the cerebellum.

#### Potential Research Applications

-A comprehensive study analyzing NSE expression in various different tumor entities would be helpful to assess the diagnostic significance of NSE IHC. -The prognostic and clinical role of NSE expression should be further evaluated. -The pattern of NSE immunostaining may be instrumental for postmortem assessment of brain damage.

## Protocol Suggestions

Dilution: 1:150 ; pH9 is optimal. Freshly cut sections should be used (less than 10 days between cutting and staining deteriorates staining intensity for most antibodies in IHC).

#### Limitations

This antibody is available for research use only and is not approved for use in diagnostics.

# Warranty

There are no warranties, expressed or implied, which extend beyond this description. MSVA is not liable for any personal injury or economic loss resulting from this product.



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Adrenal gland - Strong NSE immunostaining of the adrenal medulla



Colon descendens, muscular wall -Some nerve fibres and ganglion cells stain NSE positive in the muscular wall of the gastrointestinal tract



Ileum, mucosa



Appendix, mucosa - NSE immunostaining is seen on nerve fibres of the appendix mucosa



Duodenum, Brunner gland



Pancreas - Positive NSE immunostaining of islets of Langerhans



Appendix, muscular wall - Some nerve fibres and ganglion cells stain NSE positive in the muscular wall of the gastrointestinal tract



Duodenum, mucosa - Isolated neuroendocrine cells of the epithelium and interstitial nerve fibres show NSE immunostaining



Pituitary, anterior lobe - In some samples of the adenohypohysis, a weak to moderate NSE immunostaining is visible



Stomach, antrum - Weak NSE immunostaining is seen in neuroendocrine cells of the stomach antrum



Cerebellum, cortex (Stratum moleculare)



Endometrium, proliferation - In one of 16 samples of the endometrium, a weak nuclear NSE immunostaining was seen (probably non-specific



Placenta, mature, amnion and chorion - Weak NSE immunostaining in chorion cells of the placenta



Thymus



Rectum, mucosa





Seminal vesicle - NSE immunostaining is seen on nerve fibres of the seminal vesicle