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Product Information

Anti-Neuron-Specific Enolase (NSE)
Mouse monoclonal, clone NSE-P1
purified from hybridoma cell culture

Catalog Number **SAB4200571**

Product Description

Monoclonal Anti-Neuron-Specific Enolase (NSE) (mouse IgG1 isotype) is derived from the hybridoma NSE-P1 produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to a sequence at the C-terminal region of human NSE (GeneID: 2026).[1] The isotype is determined by ELISA using Mouse Monoclonal Antibody Isotyping Reagents (Catalog Number ISO2). The antibody is purified from culture supernatant of hybridoma cells grown in a bioreactor.

Monoclonal Anti- Neuron-Specific Enolase (NSE) recognizes human, rat, and mouse NSE. The product may be used in several immunochemical techniques including immunoblotting (~47 kDa), ELISA, and immunohistochemistry.[1,2]

Neuron specific enolase (NSE) belongs to the family of enolase enzymes present in all tissues and organisms capable of glycolysis. Enolases have three subunits (α, β, and γ) each one encoded by a separate gene. The subunits can combine to form five different isoenzymes: αα, αβ, αγ, ββ, and γγ. Enolase 1 (αα) is found in liver, kidney, spleen, and adipose tissue. Enolase 3 (ββ) is muscle specific.

NSE, also named Enolase 2 is a dimeric enzyme (γγ) that catalyses the conversion of 2-phospho-D-glycerate to phospho(enol)pyruvate in the glycolytic pathway and is found in neurons and in neuroendocrine cells.[3] Its biological half-life is ~24 hours.

It is assumed that NSE, being a cytoplasmic enzyme, is released during cell destruction. Thus, it is considered as a specific neurobiochemical marker of brain damage after traumatic brain injury, stroke, and anoxic encephalopathy after cardiac arrest.[4] Moreover, NSE has been suggested to be a general circulating marker for neuroendocrine tumors.[5] Interestingly, high levels of NSE were also reported in breast cancer upon exposure to the environmental pollutants arsenite and cadmium.[6]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody Concentration: ~1.0 mg/mL

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For extended storage, freeze at –20 °C in working aliquots. Repeated freezing and thawing or storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: A working concentration of 0.5-1.0 μg/mL is recommended using NTERA-2 (NT2/D1) total cell extracts.

Immunohistochemistry: A working concentration of 10-20 μg/mL is recommended using formalin-fixed paraffin embedded human cerebellum.

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration.

References

1. Duncan, M.E., et al., *J. Immunol. Meth.,* **151**, 227-236 (1992).
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3. Douglas-Escobar, M., and Weiss, M.D., *Front. Neurol.,* **3**, 144 (2012).
4. Cata, J.P., et al., *Br. J. Anaesth.,* **107**, 844-858 (2011).
5. Oberg, K., *Endocr. Relat. Cancer,* **18**, S17-S25 (2011).
6. Soh, M.A., et al., *Cancer Cell Int.,* **11**, 41-52 (2011).

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