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TECHNICAL DATA SHEET 266

Page 1 of 2

Antisera to Neuron Specific Enolase (NSE)

Neuron specific enolase (NSE) is a unique form of the glycolytic enzyme enolase (E.C.4.2.1.11), found exclusively in neurons and neuroendocrine tissues. It is structurally, functionally, and immunologically distinct from all other known enolases. Anti-NSE is the reagent of choice for the visualization of both neurons and peptide secreting neuroendocrine cells by immunocytochemistry. NSE has been found in high concentrations in neuroendocrine tumors like oat cell carcinoma, neuroblastoma and pheochromocytoma. Certain neurological disorders such as Alzheimer's disease, Huntingdon's disease and Amyotrophic Laterosclerosis are accompanied by increases in serum and spinal fluid NSE levels. Levels of NSE in biological fluids can be a useful parameter for the assessment of neural tissue damage in the brain.

Anti-NSE reacts with the gamma-gamma enolase isoenzyme found primarily in neurons and endocrine cells and also to some extent in platelets, megakaryocytes, T-cells, and striated and smooth muscle cells. The antibody stains neurons, APUD cells, ganglion cells in the GI tract and myelinated and unmyelinated nerve fibers. Tumors showing positive reactivity with anti-NSE include gangliomas, paragangliomas, oat-cell carcinomas, astrocytomas, oligoastrocytomas, glioblastomas, meningiomas, melanomas and Schwannomas.

Polysciences' Anti-Human NSE is very specific and can be used for immunocytochemical staining at dilutions of 1:3000 to 1:6000. Our Anti-Rat NSE can be used at dilutions of 1:2000 to 1:4000. Immunocytochemical staining procedures for the detection of NSE are described in the following articles: Brain Research, **181**, 391 (1980); **190**, 195 (1981).

To complement the antisera to NSE, we supply the purified antigens prepared from human and rat brains. Our human and rat NSE are greater than 99% pure and have a specific activity greater than 60 units per mg. of protein.

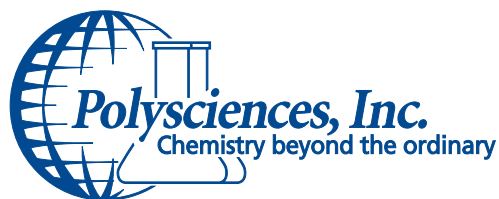
Anti-NSE is the reagent of choice for the quantification of neurons and peptide secreting neuroendocrine cells by RIA. Our anti-human NSE can be used in conjunction with pure human NSE to formulate a RIA and measure NSE levels in tissue, serum or CSF. Similarly, anti-rat NSE and pure rat NSE can be used to formulate a RIA. One vial of antiserum will be sufficient to perform a number of assays and one vial of antigen (50 µg) will be sufficient for several iodinations. An additional vial of antigen will be necessary for standard curves. Procedures involving RIA and its formulation can be found in the following article: J. Neurochem., **36**, 1093 (1981).

The anti-human NSE is supplied lyophilized in 100 µl and 200 µl sizes. These should be reconstituted in 100 µl and 200 µl of distilled water. Several small aliquots should be made and these aliquots should be stored frozen. Repeated freezing and thawing should be avoided. The antiserum will be stable for long periods in the freezer. The anti-rat NSE is supplied lyophilized in 150 µl and 350 µl sizes. These should be reconstituted in 150 µl and 350 µl of distilled water and these aliquots should be stored frozen.

For additional information on purified human and rat NSE, ask for Data Sheet #314.

CAUTION:

Although these products are not known to be hazardous, exercise care in handling. For research only. Not for use in diagnostic procedures.



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TECHNICAL DATA SHEET 266

Page 2 of 2

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2. J. Histochem. Cytochem., **32**, 1295 (1984)
3. Brain Research, **327**, 379 (1985)
4. Am. J. Anat., **176**, 461 (1986)
5. Am. J. Clin. Pathol., **87**, 245 (1987)
6. Ann. Rev. Neurosci., **10**, 269 (1987)
7. Int. J. Dev. Neurosci., **6**, 77 (1988)

ORDERING INFORMATION

| Cat. # | Description | Size |
|--------|--|------------------|
| 16625 | Anti-Rat NSE in Rabbit | 150 µl 350 µl |
| 17437 | Anti-Human NSE in Rabbit, Serum, Lyophilized | 100 µl 200 µl |
| 17436 | NSE, Human (NSE-H), Pure, Lyophilized | 50 µg |
| 17435A | NSE, Rat (NSE-R), Pure, Lyophilized | 50 µg |

TO ORDER

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