

## NSE Ready-To-Use IHC Kit

Cat.No: IHC0269  
Applications: **IHC-P**  
Reactivity: Human, Mouse, Rat  
Size: 50T  
Assay type: Immunohistochemistry  
Sample type: FFPE tissue  
General Information:

Number	Component	Size	Concentration	Storage
1	PBS Buffer (powder)	2 L×2	20x	RT
2	Antigen Retrieval Buffer	20 ml	100x	2-8°C
3	Endogenous Peroxidase Blocking Buffer	3 ml	RTU	2-8°C, protect from light
4	Blocking Buffer	3 ml	RTU	2-8°C
5	Primary Antibody (NSE Recombinant Rabbit mAb)	6 ml	RTU	2-8°C
6	Secondary Antibody (Goat Anti-Rabbit IgG H&L, HRP conjugated)	6 ml	RTU	2-8°C
7	Chromogen Component A	0.3 ml	RTU	-20°C, protect from light
8	Chromogen Component B	0.3 ml	RTU	-20°C
9	Counter Staining Reagent	5 ml	RTU	RT
10	Mounting Media	5 ml	RTU	RT
11	Control slide (Human colon cancer, rat brain, mouse brain)	3 slides	RTU	RT
12	Datasheet	1 copy		

**Storage and Stability:** Please store components at the temperatures indicated on the individual tube labels. The kit is stable for 6 months from the date of receipt.

**Immunohistochemistry Protocol:**

### 1. Deparaffinization And Rehydration

Immerse slides in fresh xylene for 15 minutes and then repeat two more times using separate containers. Immerse slides sequentially in 100%, 95%, 90%, 80%, and 70% ethanol solutions for 5 minutes each. Rinse slides 3 times with distilled water for 5 minutes each.

### 2. Antigen Retrieval

Add 100× **Antigen Retrieval Buffer** into distilled water to prepare a 1× solution. Boil slides in 1× solution at 95°C-100°C for 15 minutes. Move the slides to 1× solution at room temperature (RT) and allow them to stand for 20 minutes. Rinse 3 times with **PBS Buffer** (dissolve the powder in 2L distilled water) for 5 minutes each.

### 3. **Block Endogenous Peroxidase**

Drain the liquid off the slides and then use a hydrophobic IHC pen to draw circles on the slides around tissue sections. Add 2-4 drops of **Endogenous Peroxidase Blocking Buffer** directly on slides, covering the whole tissue and block slides for 15 minutes at RT. Rinse 3 times with **PBS Buffer** for 5 minutes each.

### 4. **Serum Blocking**

Block with 2-4 drops of **Blocking Buffer** for 20 minutes at RT.

### 5. **Primary Antibody Incubation**

Drain blocking buffer from slides. Incubate slides with 2-4 drops of **NSE Recombinant Rabbit mAb** overnight at 4°C or 1-2 hours at RT. Rinse 3 times with **PBS Buffer** for 5 minutes each.

### 6. **Secondary Antibody Incubation**

Incubate slides with 2-4 drops of **Goat Anti-Rabbit IgG H&L, HRP conjugated** for 1-2 hours at RT. Rinse slides 3 times with **PBS Buffer** for 5 minutes each.

### 7. **Signal Development**

Remove residual liquid around the tissue section. Add 50ul fresh **DAB Buffer (Chromogen Component A : Chromogen Component B : PBS Buffer=1:1:18)** to cover the tissue. Monitor the reaction under the microscope until a brown color is visible (approximate 3-5 minutes at RT). Stop reaction immediately by rinsing with distilled water. Rinse slides 3 times with distilled water for 5 minutes each.

### 8. **Counterstain**

Counterstain with an appropriate amount of **Counter Staining Reagent** for 3-5 minutes at RT. Rinse slides with distilled water for 5 minutes. Use 2-4 drops of **Differentiation reagent** to cover the tissue for 30 seconds. Rinse slides twice with distilled water for 5 minutes each.

### 9. **Dehydration Sheet**

Immerse slides sequentially in 70%, 80%, 90%, 95%, and 100% ethanol for 5 minutes each at RT. Immerse slides in 2 changes of fresh xylene, 15 minutes each. Drop some **Mounting Media** on the tissue. Mount coverslips.

#### Notes:

1. The positive control slide provided in the kit allows you to be sure that the experimental set-up is working properly.
2. Do not allow slides to dry at any time during this procedure.

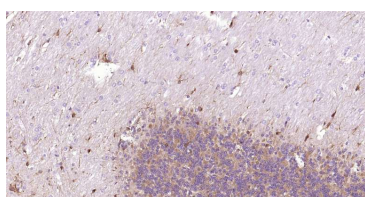
3. Please don't replace the matching reagents in this product with other manufacturers' products.
4. As DAB is a carcinogen, please take necessary precautions.
5. PBS (reagent 1) can be stored for one week at 4°C after preparation; The antigen retrieval buffer (1× reagent 2) and the chromogenic agent (the mixture of reagents 7 and 8) should be prepared right before each assay.

***Please cite this product as "IHC0269, Bioss Antibodies". Citation example: "Tissue sections using ENO2 IHC Kit (IHC0269, Bioss Antibodies) were stained for ENO2 according to the manufacturer's instructions."***

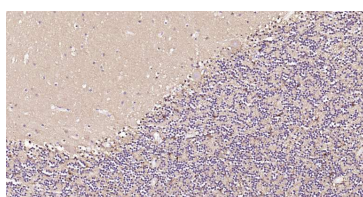
## Introduction:

Neuron specific enolase (NSE, ENO1, ENO2, ENO3) is an enzyme that catalyzes the conversion of 2-phosphoglycerate to phosphoenolpyruvate in the glycolytic pathway, and the reverse reaction in gluconeogenesis. NSE has a high stability in biological fluids and can easily diffuse to the extracellular medium and cerebrospinal fluid (CSF) when neuronal membranes are injured. NSE is one of three mammalian enolases, which are also known as ENO1, ENO2, and ENO3 or alternately as enolase alpha, beta and gamma. The alpha-subunit is expressed in most tissues, the beta-subunit only in muscle, and the gamma-subunit is expressed primarily in neurons, in normal and in neoplastic neuroendocrine cells. Co-expression of NSE and chromogranin A is common in neuroendocrine neoplasms. Since neurons require a great deal of energy, they are very rich in glycolytic enzymes such as GAPDH and NSE. Antibodies to NSE protein are 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. NSE is used clinically as a sensitive and useful marker of neuronal damage in several neurological disorders including stroke, hypoxic brain damage, status epilepticus, Creutzfeldt-Jakob disease, and herpetic encephalitis. Further, NSE is found in elevated concentrations in plasma and certain neoplasias that include pediatric neuroblastoma and small cell lung cancer.

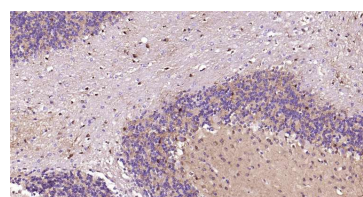
## Validation Data



Immunohistochemical analysis of paraffin embedded rat cerebellum tissue slide using IHC0269 (NSE IHC Kit).



Immunohistochemical analysis of paraffin embedded human cerebellum tissue slide using IHC0269 (NSE IHC Kit).



Immunohistochemical analysis of paraffin embedded mouse cerebellum tissue slide using IHC0269 (NSE IHC Kit).