

## Product Information

### Anti-Brain-derived Neurotrophic Factor

produced in chicken, affinity isolated antibody

Catalog Number **B9186**

Synonym: Anti-BDNF

#### Product Description

Anti-Brain-derived Neurotrophic Factor is produced in chicken using as immunogen purified, Sf 21-derived, recombinant human brain-derived neurotrophic factor (rhDBNF) (Gene ID: 627). BDNF specific IgY was purified by human BDNF affinity chromatography.

Anti-Brain-derived Neurotrophic Factor recognizes human BDNF in immunohistochemistry and flow cytometry.

Brain-derived neurotrophic factor is a member of the neurotrophin family of growth factors that includes NGF, NT-3, and NT-4. All neurotrophins have six conserved cysteine residues and share a 55% sequence identity at the amino acid level. BDNF has been shown to enhance the survival and differentiation of several classes of neurons *in vitro*, including neural crest and placode-derived sensory neurons, dopaminergic neurons in the substantia nigra, basal forebrain cholinergic neurons, hippocampal neurons, and retinal ganglial cells.<sup>1</sup> BDNF is expressed within peripheral ganglia and is not restricted to neuronal target fields, raising the possibility that BDNF has paracrine, or even autocrine, actions on neurons as well as non-neuronal cells.<sup>2</sup>

#### Reagent

Supplied lyophilized from a 0.2  $\mu$ m filtered solution in phosphate buffered saline with 5% trehalose.

#### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

#### Preparation Instructions

To one vial of lyophilized powder, add 1 mL of 0.2  $\mu$ m filtered phosphate buffered saline to produce a 0.1 mg/mL stock solution of antibody. If aseptic technique is used, no further filtration should be needed for use in cell culture environments.

#### Storage/Stability

Prior to reconstitution, store at  $-20^{\circ}\text{C}$  or below. Lyophilized product is stable for 12 months from date of receipt when stored at  $-20^{\circ}\text{C}$  or  $-70^{\circ}\text{C}$ . Reconstituted product may be stored at  $2-8^{\circ}\text{C}$  for up to one month. For prolonged storage, the product may be frozen in working aliquots at  $-20^{\circ}\text{C}$  to  $-70^{\circ}\text{C}$  for 6 months without detectable loss of activity. Avoid repeated freezing and thawing.

#### Results

**Flow cytometry:** a working concentration of 3-10  $\mu\text{g/mL}/10^6$  cells with an appropriate secondary antibody for indirect immunofluorescence staining of cells by flow cytometry.

**Immunohistochemistry:** The antibody can be used with the appropriate secondary reagents to detect human BDNF. An experimental protocol may be as follows. Tissues may be dissected from experimental animals that were fixed by vascular perfusion solution with 4% paraformaldehyde/PBS (pH 7.4)<sup>\*</sup> and followed by perfusion with a 10% sucrose solution in 0.1 M phosphate buffer (pH 7.2). Adequate labeling may be achieved on 5-15  $\mu\text{m}$  thick cryostat sections by incubating them with primary antibodies diluted to 0.5-5  $\mu\text{g/mL}$ . On free-floating sections, primary antibodies should be diluted to 0.1-1  $\mu\text{g/mL}$ . After washing slides in phosphate buffered saline (15 minutes x 3), detection of labeling on cells and tissues may be done by using either fluorescent<sup>\*\*</sup> or non-fluorescent enzymatic protocols. These antibodies can label BDNF in naïve animals.

<sup>\*</sup>BDNF was found to be a fixation sensitive antigen: post-fixation of tissues with 4% paraformaldehyde may greatly reduce or even abolish BDNF labeling.

<sup>\*\*</sup> Due to accumulation of autofluorescent pigment lipofuscin in neuronal tissues dissected from non-human primates or humans, the use of fluorescent probes such a FITC or Cy3<sup>TM</sup> are not recommended unless autofluorescence can be quenched (by treating tissues after finishing IHC staining with 1% Sudan Black in 70% alcohol). Non-fluorescent enzymatic protocols (DAB, AEC, or immunogold-silver staining) may be used.

**Note:** In order to obtain the best results in various techniques and preparations, we recommend determining optimal working concentrations by titration.

Endotoxin: < 0.1 EU/ $\mu$ g antibody determined by the LAL method.

**References**

1. Jones, K., et al., *Cell*, **76**, 989 (1994).
2. Snider, W., *Cell*, **77**, 627 (1994).
3. Davies, A.M., "Neurotrophic Factor Bioassay Using Dissociated Neurons" in Nerve Growth factors, Rush, R.A., (Ed), John Wiley and Sons, Ltd, pp 95-109 (1989)

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