

## Product Information

### NGF- $\beta$ rat, recombinant expressed in Sf21 cells

Catalog Number **N2513**  
Storage Temperature  $-20\text{ }^{\circ}\text{C}$

Synonym: Nerve Growth Factor- $\beta$

#### Product Description

NGF 7S is characterized as a non-covalent aggregate containing three types of polypeptide chains ( $\alpha$ ,  $\beta$ , and  $\gamma$ ). NGF- $\beta$  is isolated from dissociated, homogeneous NGF 7S. The gene encoding the human NGF- $\beta$  has been localized to chromosome 1 (p22.1) by somatic cell hybridization.<sup>1,2</sup> Comparison of the mouse and human genes indicates that the two genes are organized with similar intron/exon structure.<sup>3</sup>

Human, recombinant NGF- $\beta$  is a homodimer of two, 120 amino acid polypeptides. The human protein shares ~90% homology at the amino acid level with both mouse and rat NGF- $\beta$ .

The production of natural NGF- $\beta$  occurs in epithelial cells<sup>4</sup> and the pituitary gland.<sup>5,6</sup> Also, nerves of the peripheral nervous system are sources of NGF- $\beta$ . NGF- $\beta$  promotes the survival and cholinergic phenotype of basal forebrain cholinergic neurons and stimulates neurite outgrowth of embryonic trigeminal motor neurons *in vitro*.<sup>4</sup>

NGF- $\beta$  mRNA is detected in hippocampal pyramidal and granule cells,<sup>7,8</sup> and these cells stain for NGF- $\beta$ .<sup>9</sup> NGF- $\beta$  stimulates mast cell proliferation<sup>10</sup> and acts as a mitogen for T and B lymphocytes.<sup>11</sup> IL-1 induces NGF- $\beta$  production by fibroblasts,<sup>12</sup> and prostaglandins and  $\beta$ -adrenergic compounds induce NGF production in astrocytoma cells.<sup>13</sup>

The biological activity of rat, recombinant NGF- $\beta$  is measured in a cell proliferation assay using TF-1 cells, a human erythroleukemic cell line.<sup>14</sup> The  $\text{EC}_{50}$  is defined as the effective concentration of growth factor that elicits a 50% increase in cell growth.

The product is lyophilized from a  $0.2\text{ }\mu\text{m}$  filtered solution of PBS containing 1 M NaCl and  $50\text{ }\mu\text{g}$  of bovine serum albumin per  $1\text{ }\mu\text{g}$  of cytokine.

#### 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

Reconstitute the contents of the vial using  $0.2\text{ }\mu\text{m}$  filtered PBS containing 0.1% HSA or BSA to a concentration  $\geq 1\text{ }\mu\text{g/ml}$ .

#### Storage/Stability

Store the product at  $-20\text{ }^{\circ}\text{C}$ . After reconstitution, store at  $2\text{--}8\text{ }^{\circ}\text{C}$  for a maximum of 3 months. For extended storage, freeze in working aliquots at  $-70\text{ }^{\circ}\text{C}$  or  $-20\text{ }^{\circ}\text{C}$ . Repeated freezing and thawing is not recommended.

#### References

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