

Recombinant Human Brain-derived Neurotrophic Factor (BDNF)

Certificate of Analysis and Data Sheet

➤ Source: E.Coli	➤ Catalog No. CTK-207
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➤ **Background :**

BDNF is a member of the nerve growth factor family of trophic factors. In the brain BDNF has a trophic action on retinal, cholinergic, and dopaminergic neurons, and in the peripheral nervous system it acts on both motor and sensory neurons. Some protein domains of BDNF are identical with those of NGF and another neurotrophic factor, designated NT-3 (neurotrophin-3). Polyclonal antibodies raised against murine NGF have been shown to cross-react with both NT-3 and BDNF.

➤ **Description :**

Recombinant Human Brain-Derived Neurotrophic Factor produced in E.Coli is a homodimer , non-glycosylated, polypeptide chain containing 2 x 119 amino acids and having a total molecular mass of 26,984 Dalton.

BDNF is purified by proprietary chromatographic techniques.

➤ **Physical Appearance:**

Sterile Filtered White Lyophilized (freeze-dried) powder.

➤ **Formulation:**

BDNF was lyophilized after dialysis against 20mM sodium citrate buffer pH=5.

➤ **Solubility:**

It is recommended to reconstitute the lyophilized BDNF in sterile 18MΩ-cm H₂O not less than 100μg/ml, which can then be further diluted to other aqueous solutions.

➤ **Stability:**

Lyophilized BDNF although stable at room temperature for 3 weeks, should be stored desiccated below -18 C. Upon reconstitution BDNF should be stored at 4 C between 2-7 days and for future use below -18 C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA).

Please avoid freeze-thaw cycles.

➤ **Purity:**

Greater than 96.0% as determined by:

(a) Analysis by RP-HPLC.

(b) Anion-exchange FPLC.

(c) Analysis by reducing and non-reducing SDS-PAGE Silver Stained gel.

➤ **Amino acid sequence:**

The sequence of the first five N-terminal amino acids was determined and was found to be Met-His-Ser-Asp-Pro.

➤ **Dimers and aggregates:**

Less than 1% as determined by silver-stained SDS-PAGE gel analysis.

➤ **Biological Activity:**

This recombinant BDNF is fully biologically active when compared to standard. The ED50, calculated by the dose-dependant induction of ACHE (acetylcholine esterase) in rat basal forebrain primary septal culture is 50 ng/ml.

➤ **Endotoxin:**

Less than 0.1 ng/μg (IEU/μg) of recombinant Brain-Derived Neurotrophic Factor .

➤ **Protein content:**

Protein quantitation was carried out by two independent methods:

1. UV spectroscopy at 280 nm using the absorbency value of 1.6 as the extinction coefficient for a 0.1% (1mg/ml) solution. This value is calculated by the PC GENE computer analysis program of protein sequences (IntelliGenetics).
2. Analysis by RP-HPLC, using a standard solution of BDNF as a Reference Standard.

➤ **Usage:**

This material is offered for research, laboratory or further evaluation purposes