



## Product Information Sheet

### Rat GDNF ELISA Kit

<b>Catalog No.</b>	EK0363
<b>Size</b>	96T
<b>Range</b>	31.2pg/ml-2000pg/ml
<b>Sensitivity</b>	< 4pg/ml

#### Specificity

No detectable cross-reactivity with any other cytokine.

#### Storage

Store at 4°C for frequent use, at -20°C for infrequent use.

Avoid multiple freeze-thaw cycles (Shipped with wet ice.)

#### Expiration

Four months at 4°C and eight months at -20°C.

#### Application

For quantitative detection of rat GDNF in sera, plasma, body fluids, tissue lysates or cell culture supernates.

#### Principle

Rat GDNF ELISA Kit is based on standard sandwich enzyme-linked immune-sorbent assay technology. Rat GDNF specific-specific polyclonal antibodies were precoated onto 96-well plates. The rat specific detection polyclonal antibodies were biotinylated. The test samples and biotinylated detection antibodies were added to the wells subsequently and then followed by washing with PBS or TBS buffer. Avidin-Biotin-Peroxidase Complex was added and unbound conjugates were washed away with PBS or TBS buffer. HRP substrate TMB was used to visualize HRP enzymatic reaction. TMB was catalyzed by HRP to produce a blue color product that changed into yellow after adding acidic stop solution. The density of yellow is proportional to the rat GDNF amount of sample captured in plate.

#### Kit Components

1. Lyophilized recombinant rat GDNF standard: 10ng/tubex2.
2. One 96-well plate precoated with anti- rat GDNF antibody.
3. Sample diluent buffer: 30 ml
4. Biotinylated anti- rat GDNF antibody: 130µl, dilution 1:100.
5. Antibody diluent buffer: 12ml.
6. Avidin-Biotin-Peroxidase Complex (ABC): 130µl, dilution 1:100.
7. ABC diluent buffer: 12ml.
8. TMB color developing agent: 10ml.
9. TMB stop solution: 10ml.

#### Material Required But Not Provided

1. Microplate reader in standard size.
2. Automated plate washer.
3. Adjustable pipettes and pipette tips. Multichannel pipettes are recommended in the condition of large amount of samples in the detection.
4. Clean tubes and Eppendorf tubes.
5. Washing buffer (neutral PBS or TBS).

Preparation of 0.01M **TBS**: Add 1.2g Tris, 8.5g NaCl; 450µl of purified acetic acid or 700µl of concentrated hydrochloric acid to 1000ml H<sub>2</sub>O and adjust pH to 7.2-7.6. Finally, adjust the total volume to 1L.

Preparation of 0.01 M **PBS**: Add 8.5g sodium chloride, 1.4g Na<sub>2</sub>HPO<sub>4</sub> and 0.2g NaH<sub>2</sub>PO<sub>4</sub> to 1000ml distilled water and adjust pH to 7.2-7.6. Finally, adjust the total volume to 1L.

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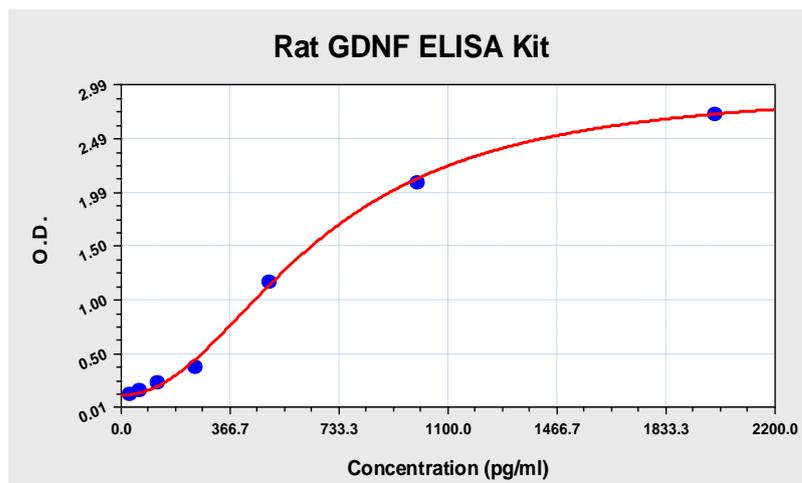
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## Notice for Application of Kit

1. Before using Kit, spin tubes and bring down all components to bottom of tube.
2. Duplicate well assay was recommended for both standard and sample testing.
3. Don't let 96-well plate dry, dry plate will inactivate active components on plate.
4. In order to avoid marginal effect of plate incubation due to temperature difference (reaction may be stronger in the marginal wells), it is suggested that the diluted ABC and TMB solution will be pre-warmed in 37°C for 30 min before using.

## Rat GDNF ELISA Kit-1X96 Well Plate Image



## Background

Glial cell line-derived neurotrophic factor (GDNF) is a glycosylated, disulfide-bonded homodimer that is a distantly related member of the transforming growth factor-beta superfamily.<sup>1</sup> GDNF, is a potent neurotrophic factor that promotes the survival of dopaminergic neurones in cultures including embryonic neuronal cultures.<sup>2</sup> GDNF, in addition to its potential role in the differentiation and survival of central nervous system neurons, has profound effects on kidney organogenesis and the development of the peripheral nervous system.<sup>3</sup> GDNF may have utility in the treatment of Parkinson's disease, which is marked by progressive degeneration of midbrain dopaminergic neurons.<sup>1</sup> GDNF lies on the short arm of human chromosome 5, at 5p13.1-p13.3 ability to promote dopamine uptake in midbrain cultures.<sup>2</sup> The standard product used in this kit is recombinant rat GDNF, which is a dimer composed of two chains with 134 amino acids.

## Reference

1. Lin, L.-F. H.; Doherty, D. H.; Lile, J. D.; Bektesh, S.; Collins, F. GDNF: a glial cell line-derived neurotrophic factor for midbrain dopaminergic neurons. *Science* 260: 1130-1132, 1993.
2. Bermingham, N.; Hillermann, R.; Gilmour, F.; Martin, J. E.; Fisher, E. M. Human glial cell line-derived neurotrophic factor (GDNF) maps to chromosome 5. *Hum. Genet.* 96: 671-673, 1995.
3. Durbec, P.; Marcos-Gutierrez, C. V.; Kilkenny, C.; Grigoriou, M.; Wartiovaara, K.; Suvanto, P.; Smith, D.; Ponder, B.; Costantini, F.; Saarna, M.; Sariola, H.; Pachnis, V. GDNF signalling through the Ret receptor tyrosine kinase. *Nature* 381: 789-793, 1996.