

## ErbB4 Protein, Rat, Recombinant (hFc)

### General Information

Synonyms:	erb-b2 receptor tyrosine kinase 4
Protein Construction:	A DNA sequence encoding the rat ERBB4 (AAQ77349.1)(Met1-Pro651) was expressed with the Fc region of human IgG1 at the C-terminus. Predicted N terminal: Gln 26
Species:	Rat
Expression Host:	HEK293 Cells
Accession:	AAQ77349.1
Molecular Weight:	96.9 kDa (predicted); 119 kDa (reducing conditions)

### QC Testing

Biological Activity:	Measured by its binding ability in a functional ELISA. Immobilized rat ERBB4-Fc at 10 µg/ml (100 µl/well) can bind biotinylated human NRG1 , The EC50 of biotinylated human NRG1 is 0.69-1.61 µg/ml.
Purity:	> 95 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/µg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 µm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

### Preparation and Storage

**Reconstitution:**  
A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

**Stability & Storage:**

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

**Shipping:**

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

ERBB4 is a single-pass type I membrane protein with multiple cysteine rich domains, a transmembrane domain, a tyrosine kinase domain, a phosphatidylinositol-3 kinase binding site and a PDZ domain binding motif. ERBB4 is expressed at highest levels in brain, heart, kidney, in addition to skeletal muscle, parathyroid, cerebellum, pituitary, spleen, testis and breast. And lower levels in thymus, lung, salivary gland, and pancreas. It specifically

binds to and is activated by neuregulins, NRG-2, NRG-3, heparin-binding EGF-like growth factor, betacellulin and NTAK. ERBB4 also can be activated by other factors and induces a variety of cellular responses including mitogenesis and differentiation. ERBB4 regulates development of the heart, the central nervous system and the mammary gland, gene transcription, cell proliferation, differentiation, migration and apoptosis. It is required for normal cardiac muscle differentiation during embryonic development, and for postnatal cardiomyocyte proliferation. ERBB4 also play a role on the normal development of the embryonic central nervous system, especially for normal neural crest cell migration and normal axon guidance. It is required for mammary gland differentiation, induction of milk proteins and lactation. Cancer Immunotherapy Immune Checkpoint Immunotherapy Targeted Therapy

### Reference

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- Silberberg G, et al. (2006) The involvement of ErbB4 with schizophrenia: association and expression studies. *Am J Med Genet*. 141(B2):142-8.
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