Recombinant Mouse ErbB4/Her4 Fc Chimera

Catalog Number: 4387-ER

DESCRIPTION

Source

Mouse myeloma cell line, NS0-derived

Mouse ErbB4 (Gln26 - Val657) Accession #Q61527	IEGRMDP	Mouse IgG_{2A} (Glu98 - Lys330)
N-terminus		C-terminus

N-terminal Sequence Analysis

No results obtained: Gln26 predicted

Predicted Molecular Mass

97.5 kDa (monomer)

SPECIFICATIONS

SDS-PAGE

120-140 kDa, reducing conditions

Activity

Measured by its ability to inhibit the biological activity of Neuregulin-1-β1 on MCF-7 human breast cancer cells. Karey, K.P. *et al*. (1988) Cancer Research **48**:4083.
The ED_{50} for this effect is 3-12 µg/mL in the presence of 10 ng/mL of Recombinant Human NRG1-β1/HRG1-β1 Extracellular Domain (Catalog # 377-HB).

Endotoxin Level

<0.01 EU per 1 µg of the protein by the LAL method.

Purity

>85%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation

Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution

Reconstitute at 500 µg/mL in sterile PBS.

Shipping

The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage

Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

ErbB4, also called Her4 (human epidermal growth factor receptor 4) in humans, is a type I transmembrane glycoprotein that is a member of the ErbB family of tyrosine kinase receptors named for a viral oncogene (1, 2). ErbB family members serve as receptors for the EGF family of growth factors (1, 2). Mouse ErbB4 contains a 25 amino acid (aa) signal sequence, a 626 aa extracellular domain (ECD), a 24 aa transmembrane region, and a 617 aa cytoplasmic domain (3). Several ErbB4 isoforms exist (4 - 6). Isoforms JM-a, b, and d contain extracellular juxtamembrane aa insertions ranging from 13 - 36 aa in length. Isoform CYT-1 contains a cytoplasmic PI3K binding site absent in CYT-2. The mouse ECD (JM-a isoform) shares 99%, 99%, 98%, 96%, 95%, 91% and 80% aa identity with human, rat, equine, opossum, platypus, chicken and *Xenopus* ErbB4, respectively. Isoforms JM-a and JM-d can be proteolytically cleaved by TACE/ADAM-17 (TNF-α converting enzyme) upon ligand binding (7). Following release of the ECD, the cytoplasmic portion is further cleaved by a γ-secretase and translocated to the nucleus (8). Recombinant ECD is able to compete with cellular ErbB4 for ligands (9). After ligand binding, the soluble ECD forms homodimers, and then may form hetero-multimers with ErbB2 (10, 11). ErbB4 ligands include the neuregulins, some of which (NRG-1 and -2) also bind ErbB3. Other ligands such as epiregulin, betacellulin and heparin-binding EGF-like growth factor (HB-EGF) are shared by ErbB1 (1, 12). ErbB4 is expressed in the heart (JM-b isoform only), kidney (JM-a isoform only), pituitary, brain and breast (1, 2, 13). It plays important roles in heart, breast and neuronal development (13). In human ErbB4 participates in the NRG-1-mediated downregulation of NMDA receptor activity that occurs in schizophrenia (14).

References:

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