SANTA CRUZ BIOTECHNOLOGY, INC.

ErbB-4 (HFR1): sc-53280

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The EGF receptor family comprises several related receptor tyrosine kinases that are frequently overexpressed in a variety of carcinomas. Members of this receptor family include EGFR (HER1), Neu (ErbB-2, HER2), ErbB-3 (HER3) and ErbB-4 (HER4), which form either homodimers or heterodimers upon ligand binding. The gene encoding ErbB-4 is expressed as a full length protein, which produces a short membrane-anchored cytoplasmic domain fragment and a long ectodomain fragment. The short fragment is heavily tyrosine phosphorylated and possesses tyrosine kinase catalytic activity toward an exogenous substrate. Proteolytic cleavage of ErbB-4 is promoted by the binding of heregulin. ErbB-4 is involved in cell proliferation and differentiation and its expression is highest in breast carcinoma cell lines, normal skeletal muscle, heart, pituitary, brain and cerebellum.

REFERENCES

1. Plowman, G.D., et al. 1993. Ligand-specific activation of HER4/p180ErbB-4, a fourth member of the epidermal growth factor receptor family. Proc. Natl. Acad. Sci. USA 90: 1746-1750.
2. Zimonjic, D.B., et al. 1995. Localization of the human HER4/ErbB-4 gene to chromosome 2. Oncogene 10: 1235-1237.
3. Vecchi, M., et al. 1996. Selective cleavage of the heregulin receptor ErbB-4 by protein kinase C activation. J. Biol. Chem. 271: 18989-18995.
4. Vecchi, M., et al. 1998. Tyrosine phosphorylation and proteolysis. Pervanadate-induced, metalloprotease-dependent cleavage of the ErbB-4 receptor and amphiregulin. J. Biol. Chem. 273: 20589-20595.
5. Srinivasan, R., et al. 1998. Expression of the c-ErbB-4/HER4 protein and mRNA in normal human fetal and adult tissues and in a survey of nine solid tumour types. J. Pathol. 185: 236-245.
6. Zhou, W. and Carpenter, G. 2000. Heregulin-dependent trafficking and cleavage of ErbB-4. J. Biol. Chem. 275: 34737-34743.
7. Rubin, I., et al. 2001. The basic biology of HER2. Ann. Oncol. 12: 3-8.

CHROMOSOMAL LOCATION

Genetic locus: ERBB4 (human) mapping to 2q34; Erbb4 (mouse) mapping to 1 C3.

SOURCE

ErbB-4 (HFR1) is a mouse monoclonal antibody raised against amino acids 1249-1264 of ErbB-4 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

ErbB-4 (HFR1) is recommended for detection of ErbB-4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

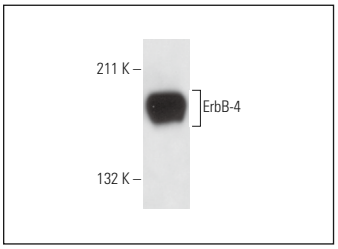
Suitable for use as control antibody for ErbB-4 siRNA (h): sc-35329, ErbB-4 siRNA (m): sc-35330, ErbB-4 shRNA Plasmid (h): sc-35329-SH, ErbB-4 shRNA Plasmid (m): sc-35330-SH, ErbB-4 shRNA (h) Lentiviral Particles: sc-35329-V and ErbB-4 shRNA (m) Lentiviral Particles: sc-35330-V.

Molecular Weight of ErbB-4 precursor: 180 kDa.

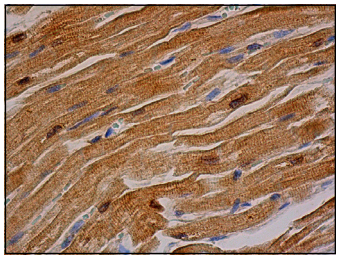
Molecular Weight of ErbB-4 cleaved forms: 80/120 kDa.

Positive Controls: mouse brain extract: sc-2253 or ErbB-4 transfected NIH/3T3 whole cell lysate.

DATA



ErbB-4 (HFR1): sc-53280. Western blot analysis of ErbB-4 expression in ErbB-4 transfected NIH/3T3 whole cell lysate.



ErbB-4 (HFR1): sc-53280. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic and nuclear staining of myocytes.

SELECT PRODUCT CITATIONS

1. Eckert, J.M., et al. 2009. Neuregulin-1 β and neuregulin-1 α differentially affect the migration and invasion of malignant peripheral nerve sheath tumor cells. Glia 57: 1501-1520.
2. Levchenko, V., et al. 2010. EGF and its related growth factors mediate sodium transport in mpkCCDc14 cells via ErbB2 (neu/HER-2) receptor. J. Cell. Physiol. 223: 252-259.
3. Biltekin, B., et al. 2023. *In vitro* effects of heparin-binding epidermal growth factor on adhesion stage of implantation. Rom. J. Morphol. Embryol. 64: 493-500.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

CONJUGATES

See **ErbB-4 (C-7): sc-8050** for ErbB-4 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.