

ErbB-3 (5A12): sc-81455

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. Full length ErbB-3 is overexpressed in human mammary tumors. The ErbB-3 gene also produces several alternative variants, including a secreted form which negatively regulates heregulin stimulated ErbB activation. ErbB-3 heterodimerizes with Neu and binds heregulin in order to activate phosphoinositide (PI) 3-kinase. The recruitment and activation of PI 3-kinase occurs via its interaction with phosphorylated YXXM motifs in the carboxy-terminus of ErbB-3.

REFERENCES

1. Kraus, M.H., et al. 1989. Isolation and characterization of ErbB-3, a third member of the ErbB/epidermal growth factor receptor family: evidence for overexpression in a subset of human mammary tumors. *Proc. Natl. Acad. Sci. USA* 86: 9193-9197.
2. Plowman, G.D., et al. 1990. Molecular cloning and expression of an additional epidermal growth factor receptor-related gene. *Proc. Natl. Acad. Sci. USA* 87: 4905-4909.

CHROMOSOMAL LOCATION

Genetic locus: ERBB3 (human) mapping to 12q13.2.

SOURCE

ErbB-3 (5A12) is a mouse monoclonal antibody raised against amino acids 1250-1270 of ErbB-3 of human origin.

PRODUCT

Each vial contains 50 µg IgG₁ in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

ErbB-3 (5A12) is recommended for detection of ErbB-3 of 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-3 siRNA (h): sc-35327, ErbB-3 shRNA Plasmid (h): sc-35327-SH and ErbB-3 shRNA (h) Lentiviral Particles: sc-35327-V.

Molecular Weight of ErbB-3: 180 kDa.

Positive Controls: NTERA-2 cl.D1 whole cell lysate: sc-364181, K-562 whole cell lysate: sc-2203 or SK-BR-3 cell lysate: sc-2218.

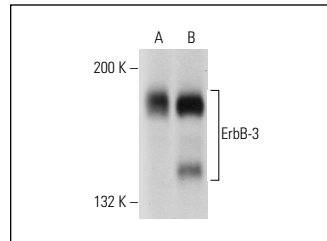
RESEARCH USE

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

STORAGE

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

DATA



ErbB-3 (5A12): sc-81455. Western blot analysis of ErbB-3 expression in K-562 (A) and NTERA-2 cl.D1 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Amin, D.N., et al. 2010. Resiliency and vulnerability in the HER2-HER3 tumorigenic driver. *Sci. Transl. Med.* 2: 16ra7.
2. LoRusso, P., et al. 2013. Phase I study of U3-1287, a fully human anti-HER3 monoclonal antibody, in patients with advanced solid tumors. *Clin. Cancer Res.* 19: 3078-3087.
3. Mukai, H., et al. 2016. Patritumab plus trastuzumab and paclitaxel in human epidermal growth factor receptor 2-overexpressing metastatic breast cancer. *Cancer Sci.* 107: 1465-1470.
4. Campbell, M.R., et al. 2016. Effective treatment of HER2-amplified breast cancer by targeting HER3 and β 1 Integrin. *Breast Cancer Res. Treat.* 155: 431-440.
5. Larimer, B.M., et al. 2018. Phage display delection, *in vitro* characterization, and correlative PET imaging of a novel HER3 peptide. *Mol. Imaging Biol.* 20: 300-308.
6. Ruiz-Saenz, A., et al. 2018. HER2 amplification in tumors activates PI3K/Akt signaling independent of HER3. *Cancer Res.* 78: 3645-3658.
7. Sinevici, N., et al. 2020. HER3 differentiates basal from claudin type triple negative breast cancer and contributes to drug and microenvironmental induced resistance. *Front. Oncol.* 10: 554704.
8. Majumder, A., et al. 2021. The role of HER2 and HER3 in HER2-amplified cancers beyond breast cancers. *Sci. Rep.* 11: 9091.
9. Wehrenberg-Klee, E., et al. 2021. HER3 PET imaging identifies dynamic changes in HER3 in response to HER2 inhibition with lapatinib. *Mol. Imaging Biol.* 23: 930-940.

CONJUGATES

See **ErbB-3 (G-4): sc-7390** for ErbB-3 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.