SANTA CRUZ BIOTECHNOLOGY, INC.

Tie-2 (3A5): sc-293414

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Receptor tyrosine kinases play key roles in signal transduction across cell surfaces in biological systems, including the vascular system. These receptors comprise a large and diverse family of catalytically related proteins that, on the basis of sequence and structural similarities, can be divided into several different evolutionary subfamilies. The cloning and characterization of Tie-1 (also designated Tie), a novel human endothelial cell surface receptor tyrosine kinase, has been reported. The extracellular domain of the predicted Tie-1 protein product has an unusual multidomain structure consisting of a cluster of three epidermal growth factor homology motifs localized between two immunoglobulin-like loops, which are followed by three Fibronectin type III repeats next to the transmembrane region. An additional member of this family has been identified as Tie-2 (also designated Tek). Tie-1 and Tie-2 have been shown to be encoded by distinct genes and to represent members of a new class of receptor tyrosine kinases.

REFERENCES

1. Pawson, T., et al. 1991. Receptor tyrosine kinases: genetic evidence for their role in *Drosophila* and mouse development. Trends Genet. 6: 350-356.
2. de Vries, C., et al. 1992. The fms-like tyrosine kinase, a receptor for vascular endothelial growth factor. Science 255: 989-991.

CHROMOSOMAL LOCATION

Genetic locus: TEK (human) mapping to 9p21.2; Tek (mouse) mapping to 4 C5.

SOURCE

Tie-2 (3A5) is a mouse monoclonal antibody raised against amino acids 66-185 representing partial length Tie-2 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

Tie-2 (3A5) is recommended for detection of Tie-2 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Tie-2 siRNA (h): sc-36677, Tie-2 siRNA (m): sc-36678, Tie-2 shRNA Plasmid (h): sc-36677-SH, Tie-2 shRNA Plasmid (m): sc-36678-SH, Tie-2 shRNA (h) Lentiviral Particles: sc-36677-V and Tie-2 shRNA (m) Lentiviral Particles: sc-36678-V.

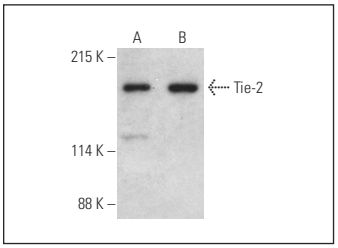
Molecular Weight of Tie-2: 140 kDa.

Positive Controls: HUV-EC-C whole cell lysate: sc-364180, ECV304 cell lysate: sc-2269 or NIH/3T3 whole cell lysate: sc-2210.

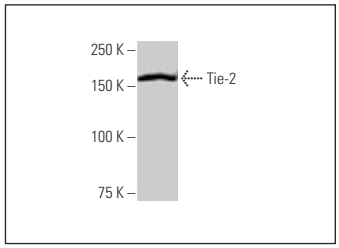
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



Tie-2 (3A5): sc-293414. Western blot analysis of Tie-2 expression in HUV-EC-C (**A**) and ECV304 (**B**) whole cell lysates.



Tie-2 (3A5): sc-293414. Western blot analysis of Tie-2 expression in NIH/3T3 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Sakai, D., et al. 2018. Successful fishing for nucleus pulposus progenitor cells of the intervertebral disc across species. JOR Spine 1: e1018.
2. Lee, S.H. and Lee, S. 2020. Change of Ras and its guanosine triphosphatases (GTPases) during development and regression in bovine corpus luteum. Theriogenology 144: 16-26.
3. Chen, L., et al. 2021. Electroacupuncture reduces oocyte number and maintains vascular barrier against ovarian hyperstimulation syndrome by regulating CD200. Front. Cell Dev. Biol. 9: 648578.
4. Cho, J., et al. 2021. Regeneration of infarcted mouse hearts by cardiovascular tissue formed via the direct reprogramming of mouse fibroblasts. Nat. Biomed. Eng. 5: 880-896.
5. Divband, B., et al. 2022. Towards induction of angiogenesis in dental pulp stem cells using chitosan-based hydrogels releasing basic fibroblast growth factor. Biomed Res. Int. 2022: 5401461.
6. Alipour, M., et al. 2022. MTA-enriched polymeric scaffolds enhanced the expression of angiogenic markers in human dental pulp stem cells. Stem Cells Int. 2022: 7583489.
7. Deluque, A.L., et al. 2022. Paricalcitol improves the angiopoietin/Tie-2 and VEGF/VEGFR2 signaling pathways in adriamycin-induced nephropathy. Nutrients 14: 5316.
8. Hong, S., et al. 2023. Targeting RAF isoforms and tumor microenvironments in RAS or BRAF mutant colorectal cancers with SJ-C1044 for antitumor activity. Curr. Issues Mol. Biol. 45: 5865-5878.

STORAGE

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