SANTA CRUZ BIOTECHNOLOGY, INC.

IGF-IIR (2G11): sc-53146

BACKGROUND

The mannose 6-phosphate/Insulin-like growth factor II receptor, IGF-IIR (also designated M6P/IGF2R), is a ubiquitously expressed integral glycoprotein. By binding glycoproteins through two of its extracytoplasmic domains, IGF-IIR mediates the activation of TGFβ1 (a growth inhibitor), the degradation of IGF-II and the transport of lysosomal enzymes. Subsequently, IGF-IIR can form oligomeric complexes, which increase the affinity of IGF-IIR for lysosomal enzymes. Unlike IGF-IR, IGF-IIR does not potentiate the signaling of IGF-I or IGF-II, which have mitogenic, cell survival and Insulin-like effects. Therefore, IGF-IIR is characterized as a tumor suppressor. Furthermore, the IGF-IIR gene is located on chromosome 6q25.3, which is commonly mutated or deleted in several human cancers.

REFERENCES

1. Deng, T., et al. 1995. A study of the relationship between expression of IGF-II, IGF-IIR, HBxAg and the DNA ploidy, cell cycle of hepatocytes in hepatocarcinoma. Zhonghua Nei Ke Za Zhi 33: 743-746.
2. Melnick, M., et al. 1997. Developmental expression in congenic mouse embryonic lungs: correlation between IGF-IIR mRNA and protein lung development. Mol. Reprod. Dev. 44: 159-170.
3. Ellis, M.J., et al. 1998. Insulin-like growth factors in human breast cancer. Breast Cancer Res. Treat. 52: 175-184.
4. Braulke, T. 1999. Type-2 IGF receptor: a multi-ligand binding protein. Horm. Metab. Res. 31: 242-246.
5. Byrd, J.C., et al. 2000. Mechanisms for high affinity mannose 6-phosphate ligand binding to the Insulin-like growth factor II/mannose 6-phosphate receptor. J. Biol. Chem. 275: 18638-18646.
6. Byrd, J.C., et al. 2000. Dimerization of the Insulin-like growth factor II/mannose 6-phosphate receptor. J. Biol. Chem. 275: 18647-18656.
7. Gemma, A., et al. 2000. Mutation analysis of the gene encoding the human mannose 6-phosphate/Insulin-like growth factor 2 receptor (M6P/IGF2R) in human cell lines resistant to growth inhibition by transforming growth factor β1 (TGF-β1). Lung Cancer 30: 91-98.
8. Kong, F.M., et al. 2000. M6P/IGF2R is mutated in squamous cell carcinoma of the lung. Oncogene 19: 1572-1578.
9. Lorenzo, K., et al. 2000. Invasive properties of murine squamous carcinoma cells: secretion of matrix-degrading cathepsins is attributable to a deficiency in the mannose 6-phosphate/Insulin-like growth factor II receptor. Cancer Res. 60: 4070-4076.

CHROMOSOMAL LOCATION

Genetic locus: IGF2R (human) mapping to 6q25.3.

SOURCE

IGF-IIR (2G11) is a mouse monoclonal antibody raised against purified IGF-IIR of bovine origin.

PRODUCT

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

APPLICATIONS

IGF-IIR (2G11) is recommended for detection of IGF-IIR of human and bovine 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 immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for IGF-IIR siRNA (h): sc-37118, IGF-IIR shRNA Plasmid (h): sc-37118-SH and IGF-IIR shRNA (h) Lentiviral Particles: sc-37118-V.

Molecular Weight of IGF-IIR: 300 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

SELECT PRODUCT CITATIONS

1. Ivan, V., et al. 2012. AP-3 and Rabip4' coordinately regulate spatial distribution of lysosomes. PLoS ONE 7: e48142.
2. Ivan, V. and van der Sluijs, P. 2015. Methods for analysis of AP-3/Rabin4' in regulation of lysosome distribution. Methods Mol. Biol. 1298: 245-258.
3. Dong, R., et al. 2016. Endosome-ER contacts control Actin nucleation and retromer function through VAP-dependent regulation of PI4P. Cell 166: 408-423.
4. O'Loughlin, T., et al. 2020. OPTN recruitment to a Golgi-proximal compartment regulates immune signalling and cytokine secretion. J. Cell Sci. 133: jcs239822.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.