SANTA CRUZ BIOTECHNOLOGY, INC.

GP78 (3D9): sc-293371

BACKGROUND

GP78 is the autocrine motility factor (AMF) receptor. AMF (also known as neuroleukin or NLK) is a tumor-secreted cytokine that induces *in vivo* invasion and metastasis. AMF induces tumor cell motility *in vitro* through interaction with GP78. GP78 is distributed evenly across the membranes of normal cells but localizes to the leading and trailing edges of carcinoma cells. In gastric cancer, GP78 surface expression correlates to the pathologic stage and grade of tumor penetration. AMF and GP78 interactions may be involved in a synaptic mechanism for learning and memory formation. GP78 and AMF expression increases in the hippocampi of rats after maze learning. Specifically, GP78 is a RING finger-dependent ubiquitin protein ligase (E3) of the endoplasmic reticulum (ER). GP78 recruits UBC7, an ubiquitin-conjugating enzyme (E2). The E3 activity of GP78 suggests a possible link between metastasis and ubiquitin-mediated protein degradation. In humans, alternative splicing of the GP78 mRNA gives rise to two distinct isoforms, 1 and 2, a type I membrane protein and an integral membrane protein, respectively.

REFERENCES

1. Watanabe, H., Carmi, P., Hogan, V., Raz, T., Silletti, S., Nabi, I.R. and Raz, A. 1991. Purification of human tumor cell autocrine motility factor and molecular cloning of its receptor. J. Biol. Chem. 266: 13442-13448.
2. Silletti, S., Yao, J., Sanford, J., Mohammed, A.N., Otto, T., Wolman, S.R. and Raz, A. 1993. Autocrine motility factor receptor in human bladder carcinoma: gene expression, loss of cell-contact regulation and chromosomal mapping. Int. J. Oncol. 3: 801-807.
3. Hirono, Y., Fushida, S., Yonemura, Y., Yamamoto, H., Watanabe, H. and Raz, A. 1996. Expression of autocrine motility factor receptor correlates with disease progression in human gastric cancer. Br. J. Cancer 74: 2004-2007.
4. Fang, S., Ferrone, M., Yang, C., Jensen, J.P., Tiwari, S. and Weissman, A.M. 2001. The tumor autocrine motility factor receptor, GP78, is a ubiquitin protein ligase implicated in degradation from the endoplasmic reticulum. Proc. Natl. Acad. Sci. USA 98: 14422-14427.
5. Luo, Y., Long, J.M., Lu, C., Chan, S.L., Spangler, E.L., Mascarucci, P., Raz, A., Longo, D.L., Mattson, M.P., Ingram, D.K. and Weng, N.P. 2002. A link between maze learning and hippocampal expression of neuroleukin and its receptor GP78. J. Neurochem. 80: 354-361.

CHROMOSOMAL LOCATION

Genetic locus: AMFR (human) mapping to 16q12.2.

SOURCE

GP78 (3D9) is a mouse monoclonal antibody raised against amino acids 451-550 of GP78 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.

APPLICATIONS

GP78 (3D9) is recommended for detection of GP78 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

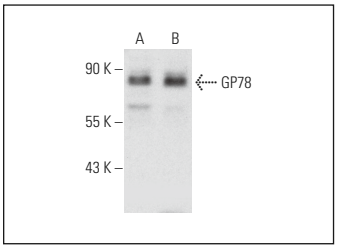
Suitable for use as control antibody for GP78 siRNA (h): sc-43809, GP78 shRNA Plasmid (h): sc-43809-SH and GP78 shRNA (h) Lentiviral Particles: sc-43809-V.

Positive Controls: Ramos cell lysate: sc-2216 or SK-OV-3 whole cell lysate: sc-364229.

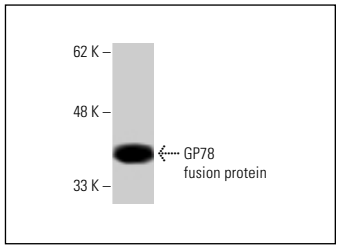
RECOMMENDED SUPPORT REAGENTS

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



GP78 (3D9): sc-293371. Western blot analysis of GP78 expression in Ramos (**A**) and SK-OV-3 (**B**) whole cell lysates.



GP78 (3D9): sc-293371. Western blot analysis of human recombinant GP78 fusion protein.

SELECT PRODUCT CITATIONS

1. Kho, D.H., Uddin, M.H., Chatterjee, M., Vogt, A., Raz, A. and Wu, G.S. 2019. GP78 cooperates with dual-specificity phosphatase 1 to stimulate epidermal growth factor receptor-mediated extracellular signal-regulated kinase signaling. Mol. Cell. Biol. 39: e00485-18.

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.