SANTA CRUZ BIOTECHNOLOGY, INC.

GP78-1 (N-20): sc-21565

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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., et al. 1991. Purification of human tumor cell autocrine motility factor and molecular cloning of its receptor. J. Biol. Chem. 266: 13442-13448.
2. Silletti, S., et al. 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., et al. 1996. Expression of autocrine motility factor receptor correlates with disease progression in human gastric cancer. Br. J. Cancer 74: 2004-2007.
4. Fang, S., et al. 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., et al. 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 (mouse) mapping to 8 C5.

SOURCE

GP78-1 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of GP78-1 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-21565 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

GP78-1 (N-20) is recommended for detection of GP78 isoform 1 of mouse and rat 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for GP78 siRNA (m): sc-44579, GP78 shRNA Plasmid (m): sc-44579-SH and GP78 shRNA (m) Lentiviral Particles: sc-44579-V.

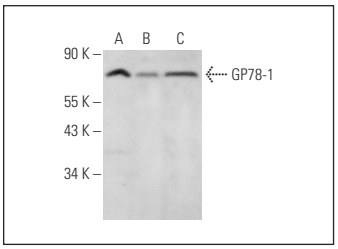
Molecular Weight of GP78-1: 78 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



GP78-1 (N-20): sc-21565. Western blot analysis of GP78-1 expression in NIH/3T3 (**A**), HeLa (**B**) and HEK293 (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Yang, Y., et al. 2012. Autocrine motility factor receptor is involved in the process of learning and memory in the central nervous system. Behav. Brain Res. 229: 412-418.

RESEARCH USE

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

PROTOCOLS

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