Human ASGR1/ASGPR1 Antibody

Monoclonal Mouse IgG_1 Clone # 950216

Catalog Number: MAB4394

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human ASGR/1ASGPR1 in direct ELISAs.
Source	Monoclonal Mouse IgG_1 Clone # 950216
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human ASGR1/ASGPR1 Gln62-Leu291 Accession # P07306
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 μm filtered solution in PBS.

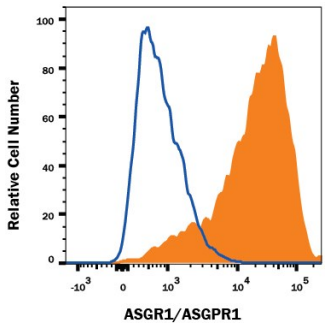
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Flow Cytometry	0.25 µg/10^6 cells	See Below
Immunocytochemistry	5-25 µg/mL	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

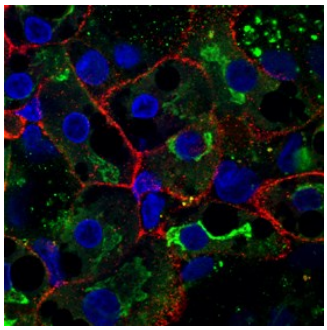
DATA

Flow Cytometry



Detection of ASGR1/ASGPR1 in HepG2 Human Cell Line by Flow Cytometry. HepG2 human hepatocellular carcinoma cell line was stained with Mouse Anti-Human ASGR1/ASGPR1 Monoclonal Antibody (Catalog # MAB4394, filled histogram) or isotype control antibody (Catalog # MAB002, open histogram), followed by Phycoerythrin-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # F0102B). View our protocol for Staining Membrane-associated Proteins.

Immunocytochemistry



ASGR1/ASGPR1 in BG01V Human Embryonic Stem Cells. ASGR1/ASGPR1 was detected in immersion fixed BG01V human embryonic stem cells differentiated to hepatocytes using Mouse Anti-Human ASGR1/ASGPR1 Monoclonal Antibody (Catalog # MAB4394) at 10 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). Albumin was also detected using Goat Anti-Human/Mouse Serum Albumin Antibody (Catalog # AF3329). Cells were co-stained using the NorthernLights™ 493-conjugated Anti-Goat IgG Secondary Antibody (green; Catalog # NL003). Specific staining of ASGR1/ASGPR1 was localized to cell surfaces. View our protocol for Fluorescent ICC Staining of Stem Cells on Coverslips.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

bio-techne®
Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449

Human ASGR1/ASGPR1 Antibody

Monoclonal Mouse IgG_1 Clone # 950216

Catalog Number: MAB4394

BACKGROUND

The human asialoglycoprotein receptor (ASGPR) is an endocytic recycling receptor that belongs to the long-form subfamily of the C-type/Ca^{+2}-dependent lectin family (1, 2, 3). It is a complex of two noncovalently-linked subunits, a major 46 kDa glycoprotein (ASGR1) and a minor 50 kDa glycoprotein (ASGR2). The major human ASGPR subunit, ASGR1 (also H1), is synthesized as a 291 amino acid (aa) type II transmembrane (TM) glycoprotein. It contains a 40 aa cytoplasmic region, a 21 aa TM segment, and a 230 aa extracellular domain (ECD) (4 - 6). The cytoplasmic region contains one palmitoylation site at Cys36 that is essential for ligand endocytosis and dissociation (7). The ECD contains two important structural regions. The first is a stalk region of 62 aa (aa 61 - 123) that contributes to noncovalent oligomerization. The second is a 118 aa, carbohydrate-binding, Ca^{+2}-dependent C-type lectin domain (aa 161 - 278) that is stabilized by three Ca^{+2} ions (3, 8). Human ASGR1 ECD is 79% aa identical to mouse ASGR1 ECD. There are two minor (ASGR2) subunits that interact with ASGR1/H1 in a mutually exclusive manner to generate a functional ASGPR (9). They represent alternate splice forms of a type II TM protein. Termed H2b and H2c, H2b differs from H2c only by the presence of a 19 aa insert in its cytoplasmic region. This insert is significant because it allows serine phosphorylation of the cytoplasmic tail and provides for the majority of ASGPR ligand internalization (9). The stoichiometry of a functional ASGPR is unclear, but is suggested to be either a 2:2, 3:1 or 3:2 ratio of ASGR1/H1:ASGR2/H2 (9, 10, 11). ASGPR is found on hepatocytes and a subset of T cells (6, 12). ASGPR is reported to bind Gal (nonreducing), GalNAc, and sialic acid α2,6Gal and GalNAc (3, 13, 14, 15). This is generally within the context of triantennary or tetraantennary configurations (2). The sialic acid terminations are of particular interest because molecules with these motifs most likely represent the endogenous ligands for ASGPR (14).

References:

1. Stockert, R. J. (1995) Physiol. Rev. **75**:591.
2. Weigel, P.H. and J.H.N. Yik (2002) Biochim. Biophys. Acta **1572**:341.
3. Meier, M. *et al.* (2000) J. Mol. Biol. **300**:857.
4. Spiess, M. *et al.* (1985) J. Biol. Chem. **260**:1979.
5. Spiess, M. and H.F. Lodish (1986) Cell **44**:177.
6. Bischoff, J. *et al.* (1988) J. Cell Biol. **106**:1067.
7. Yik, J.H.N. *et al.* (2002) J. Biol. Chem. **277**:40844.
8. Monroe, R.S. and B.E. Huber (1994) Gene **148**:237.
9. Yik, J.H.N. *et al.* (2002) J. Biol. Chem. **277**:23076.
10. Bider, M.D. *et al.* (1996) J. Biol. Chem. **271**:31996.
11. Lodish, H. (1991) Trends Biochem. Sci. **16**:374.
12. Park, J-H. *et al.* (2006) Biotechnol. Lett. **28**:1061.
13. Westerlind, U. *et al.* (2004) Glyconj. J. **21**:227.
14. Park, E.I. *et al.* (2005) Proc. Natl. Acad. Sci. USA **102**:17125.
15. Park, E.I. *et al.* (2003) J. Biol. Chem. **278**:4597.

bio-techne®
Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 **Canada** TEL 855 668 8722 **China** TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449