SANTA CRUZ BIOTECHNOLOGY, INC.

Amnionless (F-7): sc-365734

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Megaloblastic anemia 1 (MGA1), also referred to as MGA1 Norwegian type or Imerslund-Gräsbeck syndrome (I-GS), is a hereditary, recessive disorder caused by defects in the AMN gene. Patients suffering from MGA1 have a selective malabsorption of vitamin B_{12}, causing impaired function of thymidine synthase which in turn interrupts DNA synthesis. Amnionless protein, encoded for by the AMN gene, is crucial for vitamin B_{12} absorption. It modulates a BMP (bone morphogenetic protein) signaling pathway and is therefore important for trunk mesoderm production during development. Amnionless is a membrane protein that interacts with cubulin and is primarily expressed in colon, kidney and small intestine. Shorter isoforms can also be detected in thymus, testis and peripheral blood leukocytes.

REFERENCES

1. Tomihara-Newberger, C., et al. 1998. The AMN gene product is required in extraembryonic tissues for the generation of middle primitive streak derivatives. Dev. Biol. 204: 34-54.
2. Kalantry, S., et al. 2001. The Amnionless gene, essential for mouse gastrulation, encodes a visceral-endoderm-specific protein with an extracellular cysteine-rich domain. Nat. Genet. 27: 412-416.
3. Tanner, S.M., et al. 2003. Amnionless, essential for mouse gastrulation, is mutated in recessive hereditary megaloblastic anemia. Nat. Genet. 33: 426-429.
4. Strope, S., et al. 2004. Mouse Amnionless, which is required for primitive streak assembly, mediates cell-surface localization and endocytic function of cubilin on visceral endoderm and kidney proximal tubules. Development 131: 4787-4795.
5. He, Q., et al. 2005. Amnionless function is required for cubilin brush-border expression and intrinsic factor-cobalamin (vitamin B_{12}) absorption *in vivo*. Blood 106: 1447-1453.
6. Gräsbeck, R. 2006. Imerslund-Gräsbeck syndrome (selective vitamin B_{12} malabsorption with proteinuria). Orphanet J. Rare Dis. 1: 17.

CHROMOSOMAL LOCATION

Genetic locus: AMN (human) mapping to 14q32.32; Amn (mouse) mapping to 12 F1.

SOURCE

Amnionless (F-7) is a mouse monoclonal antibody raised against amino acids 20-300 mapping near the N-terminus of Amnionless of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

Amnionless (F-7) is recommended for detection of Amnionless of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 Amnionless siRNA (h): sc-60069, Amnionless siRNA (m): sc-60070, Amnionless shRNA Plasmid (h): sc-60069-SH, Amnionless shRNA Plasmid (m): sc-60070-SH, Amnionless shRNA (h) Lentiviral Particles: sc-60069-V and Amnionless shRNA (m) Lentiviral Particles: sc-60070-V.

Molecular Weight of extracellular Amnionless domain: 35 kDa.

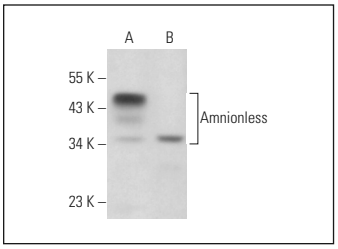
Molecular Weight of membrane-bound Amnionless: 45 kDa.

Positive Controls: Caki-1 cell lysate: sc-2224, KNRK whole cell lysate: sc-2214 or Hep G2 cell lysate: sc-2227.

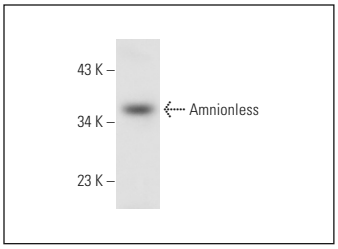
RECOMMENDED SUPPORT REAGENTS

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.

DATA



Amnionless (F-7): sc-365734. Western blot analysis of Amnionless expression in Hep G2 (**A**) and KNRK (**B**) whole cell lysates.



Amnionless (F-7): sc-365734. Western blot analysis of Amnionless expression in Caki-1 whole cell lysate.

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.