

# Amnionless (K-14): sc-46726

## BACKGROUND

Megaloblastic anemia 1 (MGA1), also referred to as MGA1 Norwegian type or Imlerslund-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<sub>12</sub>, 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<sub>12</sub> 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 cubilin and is primarily expressed in colon, kidney and small intestine. Shorter isoforms can also be detected in thymus, testis and peripheral blood leukocytes.

## REFERENCES

- Tomihara-Newberger, C., et al. 1999. The AMN gene product is required in extraembryonic tissues for the generation of middle primitive streak derivatives. *Dev. Biol.* 204: 34-54.
- 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.
- Tanner, S.M., et al. 2003. Amnionless, essential for mouse gastrulation, is mutated in recessive hereditary megaloblastic anemia. *Nat. Genet.* 33: 426-429.
- 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.
- He, Q., et al. 2005. Amnionless function is required for cubilin brush-border expression and intrinsic factor-cobalamin (vitamin B<sub>12</sub>) absorption *in vivo*. *Blood* 106:1447-1453.
- Gräsbeck, R. 2006. Imlerslund-Gräsbeck syndrome (selective vitamin B<sub>12</sub> malabsorption with proteinuria). *Orphanet J. Rare Dis.* 1: 17.

## CHROMOSOMAL LOCATION

Genetic locus: AMN (human) mapping to 14q32.32.

## SOURCE

Amnionless (K-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Amnionless of human 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-46726 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

Amnionless (K-14) is recommended for detection of Amnionless of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Amnionless (K-14) is also recommended for detection of Amnionless in additional species, including bovine and porcine.

Suitable for use as control antibody for Amnionless siRNA (h): sc-60069, Amnionless shRNA Plasmid (h): sc-60069-SH and Amnionless shRNA (h) Lentiviral Particles: sc-60069-V.

Molecular Weight of extracellular domain Amnionless: 35 kDa.

Molecular Weight of membrane-bound Amnionless: 45 kDa.

## 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) 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.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.