



KNAT1 (at-70): sc-33758

BACKGROUND

The KNOTTED class of plant genes encodes homeodomain proteins that show expression patterns suggestive of an important role in shoot meristem function. Members of the KNOTTED gene family include KNAT1 and KNAT2 (for knotted-like from *Arabidopsis thaliana*) and are expressed early in embryogenesis, providing molecular markers for meristem initiation. KNAT1 is expressed in the shoot apical meristem and not in determinate organs. Ectopic expression of KNAT1 causes dramatic alterations in *Arabidopsis thaliana* including lobed leaves and ectopic stipules and meristems in the sinus, the region between lobes. The KNAT2 homeobox gene is expressed in the vegetative apical meristem. KNAT2 is also active during flower development, specifically carpel development, suggesting that KNAT2 functions in the structuring of flowers.

REFERENCES

1. Lincoln, C., Long, J., Yamaguchi, J., Serikawa, K. and Hake, S. 1994. A knotted1-like homeobox gene in *Arabidopsis* is expressed in the vegetative meristem and dramatically alters leaf morphology when overexpressed in transgenic plants. *Plant Cell* 6: 1859-1876.
2. Hake, S., Char, B.R., Chuck, G., Foster, T., Long, J. and Jackson, D. 1995. Homeobox genes in the functioning of plant meristems. *Philos. Trans. R. Soc. Lond., B, Biol. Sci.* 350: 45-51.
3. Chuck, G., Lincoln, C. and Hake, S. 1996. KNAT1 induces lobed leaves with ectopic meristems when overexpressed in *Arabidopsis*. *Plant Cell* 8: 1277-1289.
4. Long, J.A., Moan, E.I., Medford, J.I. and Barton, M.K. 1996. A member of the KNOTTED class of homeodomain proteins encoded by the STM gene of *Arabidopsis*. *Nature* 379: 66-69.
5. Ori, N., Eshed, Y., Chuck, G., Bowman, J.L. and Hake, S. 2000. Mechanisms that control knox gene expression in the *Arabidopsis* shoot. *Development* 127: 5523-5532.
6. Pautot, V., Dockx, J., Hamant, O., Kronenberger, J., Grandjean, O., Jublot, D. and Traas, J. 2001. KNAT2: evidence for a link between knotted-like genes and carpel development. *Plant Cell* 13: 1719-1734.

SOURCE

KNAT1 (at-70) is a rabbit polyclonal antibody raised against amino acids 206-275 mapping within an internal region of KNAT1 of *Arabidopsis thaliana* origin.

PRODUCT

Each vial contains 200 µg IgG 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.

RESEARCH USE

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

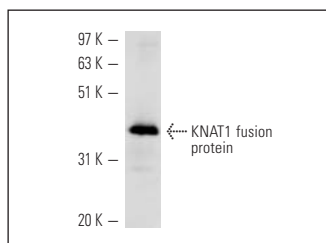
APPLICATIONS

KNAT1 (at-70) is recommended for detection of KNAT1 of *Arabidopsis thaliana* 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).

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



KNAT1 (at-70): sc-33758. Western blot analysis of *Arabidopsis* recombinant KNAT1 fusion protein.

PROTOCOLS

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