SANTA CRUZ BIOTECHNOLOGY, INC.

SHR (aT-20): sc-12652

BACKGROUND

The shoot and root meristems of higher plants are multicellular structures that initiate postembryonic organogenesis. Meristems maintain their size and structure by coordinating organ initiation with stem cell renewal. In the shoot meristem, WUSCHEL is responsible for stem cell identity, while CLAVATA1, 2 and 3 promote organ initiation, which leads to the formation of leaves and inflourescences. In the root meristem, asymmetric cell division is required for the formation of ground tissue, which is mediated by the SHORT-ROOT (SHR) protein, and the radial patterning in the root, hypocotyl and inflourescences, which is mediated by SCARECROW (SCR).

REFERENCES

1. Di Laurenzio, L., Wysocka-Diller, J., Malamy, J.E., Pysh, L., Helariutta, Y., Freshour, G., Hahn, M.G., Feldmann, K.A., and Benfey, P.N. 1996. The SCARECROW gene regulates an asymmetric cell division that is essential for generating the radial organization of the *Arabidopsis* root. Cell 86: 423-433.
2. Laux, T., Mayer, K.F., Berger, J., and Jurgens, G. 1996. The WUSCHEL gene is required for shoot and floral meristem integrity in *Arabidopsis*. Development 122: 87-96.
3. Fletcher, J.C., Brand, U., Running, M.P., Simon, R., and Meyerowitz, E.M. 1999. Signaling of cell fate decisions by CLAVATA3 in *Arabidopsis* shoot meristems. Science 283: 1911-1914.
4. Pysh, L.D., Wysocka-Diller, J.W., Camilleri, C., Bouchez, D., and Benfey, P.N. 1999. The GRAS gene family in *Arabidopsis*: sequence characterization and basic expression analysis of the SCARECROW-LIKE genes. Plant J. 18: 111-119.
5. Schoof, H., Lenhard, M., Haecker, A., Mayer, K.F., Jurgens, G., and Laux, T. 2000. The stem cell population of *Arabidopsis* shoot meristems in maintained by a regulatory loop between the CLAVATA and WUSCHEL genes. Cell 100: 635-644.
6. Helariutta, Y., Fukaki, H., Wysocka-Diller, J., Nakajima, K., Jung, J., Sena, G., Hauser, M.T., and Benfey, P.N. 2000. The SHORT-ROOT gene controls radial patterning of the *Arabidopsis* root through radial signaling. Cell 101: 555-567.
7. Yu, L.P., Simon, E.J., Trotochaud, A.E., and Clark, S.E. 2000. POLTERGEIST functions to regulate meristem development downstream of the CLAVATA *loci*. Development 127: 1661-1670.

SOURCE

SHR (aT-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of SHR 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.

Blocking peptide available for competition studies, sc-12652 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

SHR (aT-20) is recommended for detection of SHR of *Arabidopsis thaliana*, *Lycopersicon esculentum*, and *Nicotiana tabacum* 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).

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.

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.

PROTOCOLS

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