



Nph1 (aN-20): sc-18978

BACKGROUND

The phototropic response is an important component of seedling establishment in higher plants because it orients the young seedlings for maximal photosynthetic light capture. Nph1 (for nonphototropic hypocotyl 1) is a blue light-dependent autophosphorylating protein kinase with the properties of a photoreceptor for phototropism. The NPH1 gene of *Arabidopsis thaliana* encodes an apoprotein Nph1, also called phototropin, capable of absorbing UV-A, blue, and green light. *Arabidopsis* Nph1 contains a serine-threonine kinase domain and two amino-terminal LOV (light, oxygen, or voltage) domains. When expressed in insect cells, the Nph1 protein is phosphorylated in response to blue light irradiation. Nph1 protein is a plasma membrane-associated phosphoprotein.

REFERENCES

- Liscum, E. and Briggs, W.R. 1995. Mutations in the NPH1 locus of *Arabidopsis* disrupt the perception of phototropic stimuli. *Plant Cell* 7: 473-485.
- Liscum, E. and Briggs, W.R. 1996. Mutations of *Arabidopsis* in potential transduction and response components of the phototropic signaling pathway. *Plant Physiol.* 112: 291-296.
- Huala, E., Oeller, P.W., Liscum, E., Han, I.S., Larsen, E. and Briggs, W.R. 1997. *Arabidopsis* NPH1: a protein kinase with a putative redox-sensing domain. *Science* 278: 2120-2123.
- Christie, J.M., Reymond, P., Powell, G.K., Bernasconi, P., Raibekas, A.A., Liscum, E. and Briggs, W.R. 1998. *Arabidopsis* NPH1: a flavoprotein with the properties of a photoreceptor for phototropism. *Science* 282: 1698-1701.
- Christie, J.M., Salomon, M., Nozue, K., Wada, M. and Briggs, W.R. 1999. LOV (light, oxygen, or voltage) domains of the blue-light photoreceptor phototropin (Nph1): binding sites for the chromophore flavin mononucleotide. *Proc. Natl. Acad. Sci. USA* 96: 8779-8783.
- Briggs, W.R. and Huala, E. 1999. Blue-light photoreceptors in higher plants. *Annu. Rev. Cell. Dev. Biol.* 15: 33-62.

SOURCE

Nph1 (aN-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Nph1 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-18978 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

Nph1 (aN-20) is recommended for detection of Nph1 of *Arabidopsis thaliana* origin by Western Blotting (starting dilution 1:200, dilution range 1:200-1:1000), 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.

SELECT PRODUCT CITATIONS

- Onodera, A., et al. 2005. Phototropin from *Chlamydomonas reinhardtii* is functional in *Arabidopsis thaliana*. *Plant Cell Physiol.* 46: 367-374.

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.