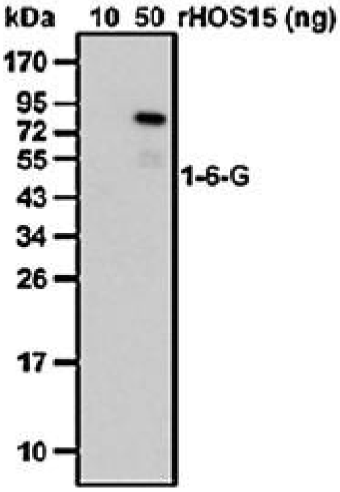
Monoclonal Anti-Arabidopsis HOS15 Antibody

Catalogue Number: MAB502

ORDERING INFORMATION

Clone: 1-6-G
Lot Number: LSY000-0001
Size: 100 ug
Formulation: Lyophilized powder
Storage: -20℃
Reconstitution: sterile PBS
Specificity: Arabidopsis HOS15
Immunogen: recombinant Arabidopsis HOS15
Recommended Applications:
WB

Figure



The detection limit of full length recombinant AtHOS15 with mAb clone 1-6-G against AtHOS15. Various concentration of recombinant AtHOS15 were subjected into SDS-PAGE gel and transferred to membrane. The membrane was probed with mAb clone 1-6-G in the reduced conditions. The mAb clone 1-6-G detected recombinant AtHOS15 at few ng levels.

Specifications and Use

Preparation

- This antibody was produced from a hybridoma resulting from the fusion of a mouse myeloma with B cells obtained from a mouse immunized with purified, E.coli-derived, recombinant Arabidopsis HOS15. The IgG fraction of the tissue culture supernatant was purified by ligand affinity chromatography.

Endotoxin level

- < 1.0 EU per 1 μg of the protein as determined by LAL method.

Formulation

- Supplied as lyophilized powder.
- Reconstitute in sterile PBS
- Centrifuge the vial before opening to prevent loss of the powder.

Storage

- Samples are stable up to 1 year from date of receipt at -20˚C.
- Upon thawing, this protein can be stored under sterile conditions at 2 ~ 8˚C for two weeks or at -70˚C in a manual defrost freezer for three months without detectable loss of activity.
- Avoid repeated freeze-thaw cycles. Samples are recommended to be aliquot in small volumes and frozen for multiple uses.

Specificity

- This antibody was selected for its ability to recognize Arabidopsis HOS15.

Application

- WB

Background

In plants, histone modification and chromatin remodeling have been shown to take part in various developmental processes and to be involved in metastable changes required to maintain altered cellular and tissue properties.(1,2) Although correlations between chromatin remodeling and developmental processes in plants have frequently been demonstrated, the influence of chromatin remodeling on adaptation responses to the environment is still poorly understood. Recently, the osmotically responsive gene 15 (HOS15), a WD40-repeat protein, was identified in a forward genetic screen for mutations that alter abiotic stress signaling. HOS15 was shown to function in the control of gene expression through histone deacetylation in Arabidopsis.(3–5) Mutants of hos15 accumulated higher levels of transcripts of many stressregulated genes and showed a hypersensitive phenotype with respect to freezing stress. HOS15 protein shared high similarity with the human TBL1 protein, a component of the chromatin repressor complex in histone deacetylation. HOS15 also interacts with histone H4, and the level of acetylated histone H4 is higher in hos15 mutants compared to that in the wild types.(3) HOS15 plays a key role in chromatin remodeling, abiotic stress responsive gene expression, and stress tolerance in plants.(6) However, identification of other components that are a part of the repressor protein complex in which HOS15 is involved and its direct target genes remain elusive. Therefore, specific antibodies are required to detect endogenous HOS15 protein in plant tissues. Here, we expressed Arabidopsis HOS15 in E. coli. The recombinant HOS15 protein was used as the antigen to generate anti-HOS15 monoclonal antibodies (MAbs) that specifically detect endogenous HOS15 in plant tissue samples. The anti-HOS15 MAbs will be useful tools for investigating the role of HOS15 in gene regulation and chromatin structure dynamics of tolerance to various environmental stresses in plants.

1. Reyes JC: Chromatin modifiers that control plant development. Curr Opin Plant Biol 2006;9:21–27.
2. Tanaka M, Kikuchi A, and Kamada H: The Arabidopsis histone deacetylases HDA6 and HDA19 contribute to the repression of embryonic properties after germination. Plant Physiol 2008;146:149–161.
3. Zhu J, Jeong JC, Zhu Y, Sokolchik I, Miyazaki S, Zhu JK, Hasegawa PM, Bohnert HJ, Shi H, Yun DJ, and Bressan RA: Involvement of Arabidopsis HOS15 in histone deacetylation and cold tolerance. Proc Natl Acad Sci USA 2008;105:4945–4950.
4. Ishitani M, Xiong L, Stevenson B, and Zhu JK: Genetic analysis of osmotic and cold stress signal transduction in Arabidopsis: interactions and convergence of abscisic aciddependent and abscisic acid-independent pathways. Plant Cell 1997;9:1935–1949.
5. Chinnusamy V, Zhu JK, and Sunkar R: Gene regulation during cold stress acclimation in plants. Methods Mol Biol 639:39–55.
6. Chinnusamy V, Gong Z, and Zhu JK: Abscisic acidmediated epigenetic processes in plant development and stress responses. J Integr Plant Biol 2008;50:1187–1195.

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