

Anti- TGG1 / Myrosinase 1 antibody, rabbit polyclonal

81-110 200 µg

Shipping and Storage: Shipped at 4°C or -20°C and store at -20°C. Do not freeze.

Immunogen: A synthetic peptide, AQNNQTIVPSDVHT, corresponding to TGG1 protein (353-366) of *A. thaliana*, conjugated with bovine serum albumin.

Form: 2 mg/ml in PBS- with 50% glycerol. Filter-sterilized. No preservative or carrier protein

Purity: IgG fraction purified by protein A affinity-chromatography from rabbit antiserum

Reactivity: TGG1 protein of Arabidopsis thaliana. Not tested for other species.

Validation of specificity: Specific reactivity has been validated by western blot showing that the TGG2 specific band is absent in *tgg2-1* mutant leaf extract (Ref.1)

Applications:

1. Western blotting (1/1,000-1/3,000)
2. Immunohistochemistry (1/500-1/1,000)
3. Immunoelectron microscopic analysis (1/1,000-1/2,500)
4. ELISA (Assay dependent)

Background: In Brassicaceae, the enzyme myrosinase (beta-thioglucoside glucohydrolase, TGG) degrades glucosinolates to produce toxins like thiocyanates, isothiocyanates, nitriles, epithionitriles or oxazolidine-2-thiones that deter herbivory. There are two TGG enzymes, TGG1 and TGG2, which have a redundant function.

Subcellular location: Vacuole

Modification: N-linked glycosylation at 9 asparagine residues. Elimination of 19-amino acid signal peptide from N-terminus.

Data Link: Swiss-Prot : [P37702](#) ((BGL38_ARATH))

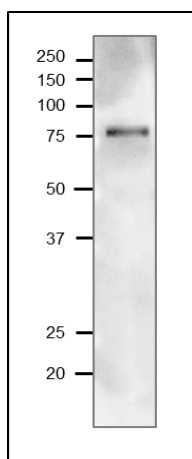


Fig.1 Western Blot of TGG1 in arabidopsis leaf extract.

Anti-TGG1 antibody was used at 1/1,000 dilution. Secondary antibody (goat anti-rabbit IgG antibody HRP-conjugated, ab97051) was used at 1/10,000 dilution.

Sample: Arabidopsis leaf extract, 10 µg

Molecular mass of TGG1 is 61 kDa from the amino acid sequence. The protein undergoes modifications such as elimination of signal peptide and glycosylation at 9 positions, which changes molecular mass in mature form.

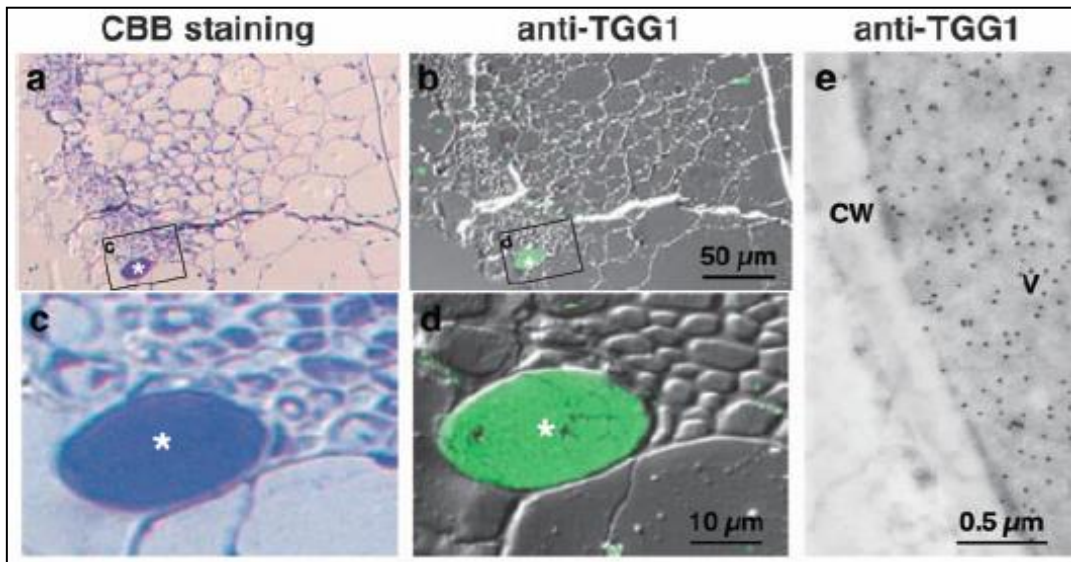


Fig.2 Localization of TGG1 in sections of Arabidopsis rosette leaves

Rosette leaves of 26- and 48-day-old plants were fixed with 4% (w/v) paraformaldehyde and 1% glutaraldehyde in 0.05 M cacodylate buffer (pH 7.4) at 4°C for 3 h. After washing with 0.02 M cacodylate buffer (pH 7.4), these tissues were dehydrated with acetone and embedded in LR white resin at -20°C. Sections were cut on an ultramicrotome (Leica, Reichert Division, Vienna, Austria) for both light microscopic and electron microscopic analyses.

Sections of rosette leaves of 48-day-old plants were stained with CBB (**a**, **c**), and reacted with anti-TGG1 antibody at 1/1,000 dilution followed by reaction with Alexa Fluor 488 goat anti-rabbit IgG at 1/1,000 dilution (**b**, **d**). **c** and **d** are enlarged images of the boxed area of **a** and **b**, respectively. Asterisks show myrosin cells.

For immunoelectron microscopy (**e**), ultrathin sections were mounted on Formvar-coated nickel grid. The sections were reacted with anti-TGG1 antibody at 1/1,000 dilution. After washing with PBS, they were incubated with anti-rabbit IgG conjugated to gold particle (AuroProbe EM). **CW** is cell wall and **V**, vacuole.

Reference: This product has been used in the following publication.

1. Ueda T. et al. AtVAM3 is required for normal specification of idioblasts, myrosin cells. [Plant Cell Physiol.](#) 2006 Jan;47(1):164-75. PMID:[16306062](#) **WB, IHC, Immunoelectron microscopy** (Arabidopsis)
2. Shirakawa M. et al. Arabidopsis Qa-SNARE SYP2 proteins localized to different subcellular regions function redundantly in vacuolar protein sorting and plant development. *The Plant Journal* (2010) 64, 924–935. PMID:[21143674](#) **WB** (Arabidopsis)

3. Agee A E. et al. MODIFIED VACUOLE PHENOTYPE1 Is an Arabidopsis Myrosinase-Associated Protein Involved in Endomembrane Protein Trafficking. [Plant Physiol.](#) 2010 Jan;152(1):120-32. PMID: [19880612](#) **WB** (Arabidopsis)
4. Farid M. et al. *Arabidopsis thaliana* alpha1,2-glucosyltransferase (ALG10) is required for efficient N-glycosylation and leaf growth. [Plant J.](#) 2011 Oct; 68(2): 314–325. PMID: [21707802](#) **WB** (Arabidopsis)
5. Hu'ttnerr S, et al. Unraveling the function of Arabidopsis thaliana OS9 in the endoplasmic reticulum-associated degradation of glycoproteins. *Plant Mol Biol* (2012) 79:21–33. PMID: [22328055](#) **WB** (Arabidopsis)
6. Liebming E. et al. Myrosinases TGG1 and TGG2 from *Arabidopsis thaliana* contain exclusively oligomannosidic N-glycans. [Phytochemistry.](#) 2012 Dec; 84(21): 24–30. PMID: [23009876](#) **WB** (Arabidopsis)
7. Shirakawa M, et al. Myrosin Cell Development Is Regulated by Endocytosis Machinery and PIN1 Polarity in Leaf Primordia of *Arabidopsis thaliana*. *The Plant Cell*, 2014 Vol. 26: 4448–4461. PMID: [25428982](#) **WB** (Arabidopsis)

Related Products: 81-122 anti-TGG2 / Myrosinase 2 antibody, rabbit polyclonal