

Anti-Fd-GOGAT (Ferredoxin-dependent glutamate synthase, chloroplastic) antibody, rabbit polyclonal

Cat. # **81-025** Size: **100 µg**

Background:

Glutamine oxoglutarate aminotransferase (abbreviated as GOGAT) is an enzyme involved in synthesis of glutamate from glutamine and alpha-ketoglutarate. GOGAT has two forms in plants: ferredoxin-dependent GOGAT (Fd-GOGAT) and NADH-dependent GOGAT (NADH-GOGAT). 95% of GOGAT found in plants is the Fd-GOGAT type. Fd-GOGAT is encoded by two genes, *glu1* and *glu2* in Arabidopsis. Fd-GOGAT (both forms) is highly conserved among plants, red algae, and cyanobacteria. Ferredoxin-dependent glutamate synthase, chloroplastic (Fd-GOGAT) is involved in glutamate biosynthesis in leaf. This protein required for the reassimilation of ammonium ions generated during photorespiration. Gene name is *GlsF*.

Specifications:

Storage: Shipped at 4°C and store at -20°C

Form: 2 mg/ml in PBS, 50% glycerol. Filter sterilized. No preservative or carrier added.

Purity: IgG, affinity-purified with Protein A/G mix

Immunogen: Purified recombinant maize Fd-GOGAT protein (full size, no tag attached)

Reactivity: Fd-GOGAT including those of maize, Arabidopsis, spinach, and cyanobacterium (*Synechococcus*)

Validation: Specificity has been validated by Western Blot with recombinant full-size maize Fd-GOGAT protein.

Applications

1. Western blot (1/2,000- 1/5,000 dilution)
2. ELISA (assay dependent)

Other applications have not been tested.

Data Link: UniProtKB: [P23225](#) (*Z. mays*), [Q51579](#) (*P. boryanum*), [P55038](#) (*Synechocystis sp.*)

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Fig. 1 Western Blot of Fd-GOGAT in plant leaf extract.

1. Full-size recombinant maize Fd-GOGAT protein
2. Arabidopsis leaf extract, 10 µg
3. Maize leaf extract, 10 µg

Anti-Fd-GOGAT antibody was used at 1/2,500 dilution. Second antibody (goat anti-rabbit IgG antibody HRP-conjugated, ab97051) was used at 1/10,000 dilution.

Molecular masses of maize and arabidopsis Fd-GOGAT are 175 kDa and 168 kDa, respectively..

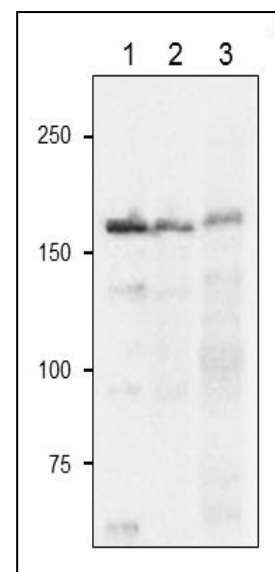
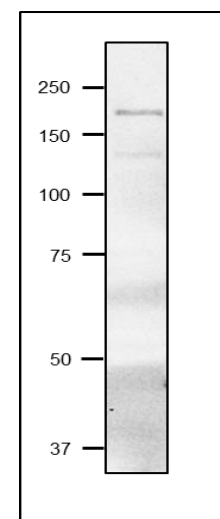


Fig. 2 Western Blot of Fd-GOGAT in cyanobacterium

Sample: Crude extract of *Synechococcus* spp.6803

The Fd-GOGAT antibody was used at 1/2000 dilutions

Molecular mass is 169 kDa



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

1. Sakakibara H. et al. Molecular cloning and characterization of complementary DNA encoding for ferredoxin-dependent glutamate synthase in maize leaf. J Biol Chem. 1991 Feb 5;266(4):2028-35. PMID: [1989968](#). WB; maize
2. Sakakibara H., Kawabata S., Hase T. and Sugiyama T. (1992) Differential effects of nitrate and light on the expression of glutamine synthetase and ferredoxin-dependent glutamate synthase in maize. Plant Cell Physiol., 33, 1193-1198. Google Scholar: abstract [WB; maize](#)
3. Kimata-Arigo Y and Hase T. Multiple complexes of nitrogen assimilatory enzymes in spinach chloroplasts: possible mechanisms for the regulation of enzyme function. PLoS One. 2014 Oct 1;9(10):e108965. PMID: [25271437](#) WB: spinach

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