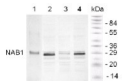
Agrisera
Part of Thermo Fisher Scientific

This product is **for research use only** (not for diagnostic or therapeutic use) **contact: support@agrisera.com**

Agrisera AB | Box 57 | SE-91121 Vännäs | Sweden | +46 (0)935 33 000 | www.agrisera.com

Anti-NAB1 | nucleic acid binding protein 1, Chlamydomonas



Qty: AS08 333

AS08 333 | Clonality: **Polyclonal** | Host: **Rabbit** | Reactivity: ***Chlamydomonas reinhardtii*** / cellular **[compartment marker]** of *Chlamydomonas* cytoplasm

Replaced by AS23 4921

Price:

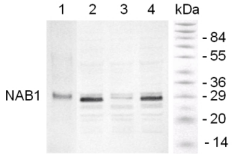
Agrisera Western Blot protocol and video tutorials

Protocols to work with plant and algal protein extracts

Agrisera Educational Posters Collection

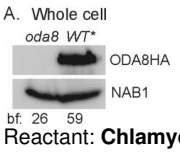
- Product Info
- Immunogen: His-tagged recombinant NAB1 from *Chlamydomonas reinhardtii* UniProt:Q8GV23
  Host: Rabbit
  Clonality: Polyclonal
  Purity: Serum
  Format: Lyophilized
  Quantity: 50 µl
  Reconstitution: For reconstitution add 50 µl of sterile water
  Storage: Store lyophilized/reconstituted at -20°C; once reconstituted make aliquots to avoid repeated freeze-thaw cycles. Please remember to spin the tubes briefly prior to opening them to avoid any losses that might occur from material adhering to the cap or sides of the tube.
  Tested applications: Immunofluorescence (IF), Immunoprecipitation (IP), Western blot (WB)
  Recommended dilution: 1: 500 (IF), 1 : 10 000 (WB)
  Expected | apparent MW: 26.5 kDa | 26 kDa (for *Chlamydomonas reinhardtii*)
- Reactivity
- Confirmed reactivity: *Chlamydomonas reinhardtii*
  Predicted reactivity: *Chlamydomonas reinhardtii*
  Not reactive in: No confirmed exceptions from predicted reactivity are currently known
- Application Examples

Application example



Western blot obtained using **1:10000** anti-NAB1 (AS08 333) and 1:160 000 AP-conjugated secondary antibody on (**1**) recombinant NAB1 protein, (**2**) cytosolic protein of *Chlamydomonas reinhardtii* wild strain Cw10, (**3**) NAB1-deficient strain Stm3, and (**4**) Stm3 complemented with NAB1.

Application examples:



Reactant: **Chlamydomonas reinhardtii (Green Alga)**

Application: **Western Blotting**

Pudmed ID: **25558044**

Journal: **Cytoskeleton (Hoboken)**

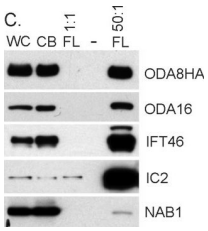
Figure Number: **3A**

Published Date: **2015-01-01**

First Author: **Desai, P. B., Freshour, J. R., et al.**

Impact Factor: **1.929**

Open Publication
ODA8 distribution is similar to that of transport factors.(A) HA-tagged ODA8 expressed from an integrated transgene rescues the beat frequency (bf) of oda8 cells to wild type levels (?60 Hz), and the expressed protein migrates at ?104 kDa on blots of transformant oda8::ODA8HA (WT*) whole cell protein samples. (B) Expression of the HA-tagged transgene rescues the assembly of flagellar ODA subunit IC2 to wild type levels. Anti-IC140 recognizes inner arm I1 dynein, which is not affected by the oda8 mutation and serves as a loading control. C. Samples of whole cells (WC), deflagellated CB and flagella (FL) from equal numbers of cells (1:1) and with flagella at 50-fold excess (50:1) were probed with the indicated antibodies. ODA8HA abundance ratios are similar to those of IFT-B subunit IFT46 and IFT-associated transport factor ODA16, not those of ODA subunits such as IC2. Anti-NAB1, which recognizes a 26 kDa cytoplasmic protein, was used as a loading control in A and C.



Reactant: **Chlamydomonas reinhardtii (Green Alga)**

Application: **Western Blotting**

Pudmed ID: **25558044**

Journal: **Cytoskeleton (Hoboken)**

Figure Number: **3C**

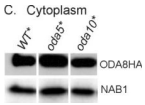
Published Date: **2015-01-01**

First Author: **Desai, P. B., Freshour, J. R., et al.**

Impact Factor: **1.929**

Open Publication
ODA8 distribution is similar to that of transport factors.(A) HA-tagged ODA8 expressed from an integrated transgene rescues the beat frequency (bf) of oda8 cells to wild type levels (?60 Hz), and the expressed protein migrates at ?104 kDa on blots of transformant oda8::ODA8HA (WT*) whole cell protein samples. (B) Expression of the HA-tagged transgene rescues the assembly of flagellar ODA subunit IC2 to wild type levels. Anti-IC140 recognizes inner arm I1 dynein, which is not affected by the oda8 mutation and serves as a loading control. C. Samples of whole cells (WC), deflagellated CB and flagella (FL) from equal numbers of cells (1:1) and with flagella at 50-fold excess (50:1) were probed with the indicated antibodies.

ODA8HA abundance ratios are similar to those of IFT-B subunit IFT46 and IFT-associated transport factor ODA16, not those of ODA subunits such as IC2. Anti-NAB1, which recognizes a 26 kDa cytoplasmic protein, was used as a loading control in A and C.



Reactant: **Chlamydomonas reinhardtii (Green Alga)**

Application: **Western Blotting**

Pudmed ID: **25558044**

Journal: **Cytoskeleton (Hoboken)**

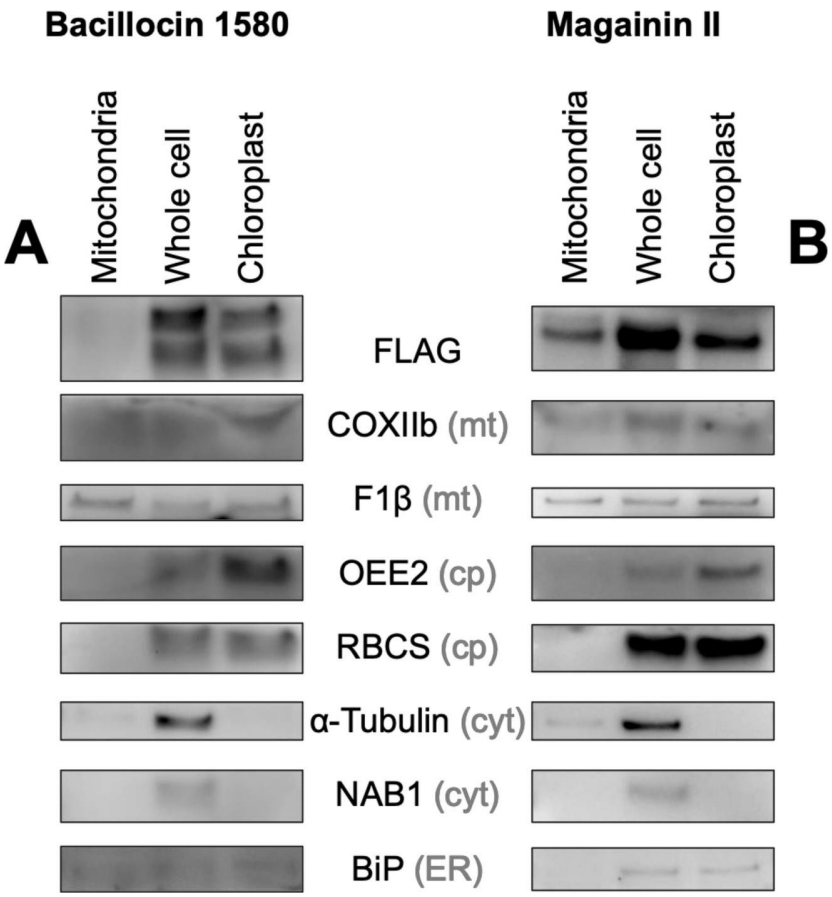
Figure Number: **4C**

Published Date: **2015-01-01**

First Author: **Desai, P. B., Freshour, J. R., et al.**

Impact Factor: **1.929**

Open Publication
Interacting mutants alter ODA8 distribution.(A) Blots of flagella from WT* and from doublet mutant oda5, oda8 and oda10, oda8 strains that express ODA8HA (oda5* and oda10*) were probed with antibodies to HA and IC2. Both oda5 and oda10 block ODA assembly, and both greatly reduce the flagellar abundance of ODA8HA. B. Blots of flagella from WT* and from a double mutant oda6,oda8 strain expressing ODA8HA (oda6*) show that flagellar abundance of ODA8HA is not affected by the failure of ODA assembly in oda6. C. Blots of cell extracts show that cytoplasmic abundance of ODA8HA is unaffected by the oda5 and oda10 mutations. Acetylated tubulin (AcTub) is used as a loading control for flagellar samples, and NAB1 for cell extract samples. All three lanes in both blots in C. were from the same blot images. Vertical spaces indicate removal of intervening lanes.



Reactant: **Chlamydomonas reinhardtii (Green Alga)**

Application: **Western Blotting**

Pudmed ID: **32731621**

Journal: **Cells**

Figure Number: **6A**

Published Date: **2020-07-28**

First Author: **Garrido, C., Caspari, O. D., et al.**

Impact Factor: **None**

Open Publication

Biochemical confirmation of AMP targeting activity. Mitochondrial, whole cell and chloroplast fractions (1 ?g protein per well) isolated from Chlamydomonas strains in which Venus localization is driven by bacillocin 1580 (A) or magainin II (B), each fused to the RBCA cleavage site, were immunolabelled with antibodies raised against FLAG, an epitope tag carried C-terminally by the Venus reporter, and markers for different cellular compartments: Cytochrome Oxidase subunit IIb (COXIIb) and ATPsynthase subunit F1? for mitochondria (mt), Photosystem II Oxygen Evolving Enhancer 2 (OEE2) and Rubisco small subunit (RBCS) for chloroplasts (cp), ?-Tubulin and nucleic-acid binding protein 1 (NAB1) for the cytosol (cyt) and luminal binding protein (BiP) for the endoplasmic reticulum (ER). Isolated chloroplasts from the Bacillocin 1580 strain (C) and isolated mitochondria from the Magainin II strain (D) were subjected to a proteinase assay, where aliquots were treated with either 150 ?g mL?1 proteinase K and/or 1% Triton X-100, a membrane solubilizing detergent. Aliquots were subsequently immuno-labelled with antibodies against FLAG, chloroplast ATP synthase subunit CF1 ? and other organelle-markers described aside.

- Additional Information
- Additional information: NAB1 can be used as a marker of cytoplasm in *Chlamydomonas reinhardii.*
- Background
- Background:

In *Chlamydomonas reinhardtii* **NAB1** (nucleic acid binding protein 1) interacts in the cytosol with mRNAs coding for light-harvesting proteins of Photosystem II. NAB1 has structural similarities (cold-shock domain, CSD) to the FRGY2-protein from *Xenopus laevis*. According to immunolocalization studies NAB1 protein was exclusively found in cytosol, Mussgnug et al. (2005).

- Product Citations

Selected references:

Lechtreck et al. (2022) Chlamydomonas ARMC2/PF27 is an obligate cargo adapter for intraflagellar transport of radial spokes. Elife. 2022 Jan 4;11:e74993. doi: 10.7554/eLife.74993. PMID: 34982025; PMCID: PMC8789290.

Perlaza(2021). Organelle Size and Quality Control in Chlamydomonas Reinhardtii. UCSF. ProQuest ID: Perlaza_ucsf_0034D_12217. Merritt ID: ark:/13030/m5257z1d. Retrieved from https://escholarship.org/uc/item/1jg3874h

Liu et al. (2020). Chlamydomonas PKD2 Organizes Mastigonemes, Hair-Like Glycoprotein Polymers on Cilia. J Cell Biol . 2020 Jun 1;219(6):e202001122. doi: 10.1083/jcb.202001122

Perlaza et al. (2019). The Mars1 kinase confers photoprotection through signaling in the chloroplast unfolded protein response. Elife. 2019 Oct 15;8. pii: e49577. doi: 10.7554/eLife.49577. (immunofluorescence)

Findinier et al. (2019). The dynamin-like protein Fzl promotes thylakoid fusion and resistance to light stress in Chlamydomonas reinhardtii. PLoS Genet. 2019 Mar 15;15(3):e1008047. doi: 10.1371/journal.pgen.1008047.

Craft et al. (2015). Tubulin transport by IFT is upregulated during ciliary growth by a cilium-autonomous mechanism. J Cell Biol. 2015 Jan 19;208(2):223-37. doi: 10.1083/jcb.201409036. Epub 2015 Jan 12.

Desai et al. (2014). Chlamydomonas axonemal dynein assembly locus ODA8 encodes a conserved flagellar protein needed for cytoplasmic maturation of outer dynein arm complexes. Cytoskeleton (Hoboken). 2014 Dec 31. doi: 10.1002/cm.21206.

Mussgnug et al. (2005) NAB1 is an RNA binding protein involved in the light-regulated differential expression of the light-harvesting antenna of Chlamydomonas reinhardtii. Plant Cell 17:3409-3421.