product AS10 709
Tic40 | Inner envelope membrane translocon complex protein (chloroplast)

product information

Background
Tic40 is a component of the inner envelope membrane import complex (TIC) of plant chloroplasts. Tic40 has been proposed to function as a co-chaperone in the stromal chaperone complex that facilitates protein translocation across the inner membrane. Tic40 can be used as a cellular compartment marker for chloroplast inner envelope membrane.

Immunogen
KLH-conjugated synthetic peptide derived from available plant sequences of Tic40 including Arabidopsis thaliana At5g16620

Host
Rabbit

Clonality
Polyclonal

Purity
Serum

Format
Lyophilized

Quantity
50 µl

Reconstitution
For reconstitution please 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 tubes briefly prior to opening them to avoid any losses that might occur from lyophilized material adhering to the cap or sides of the tubes.

Tested applications
Immunofluorescence (IF), Western blot (WB)

Related products
AS08 351 | Anti-Toc75 | Protein TOC75-3, chloroplastic, POTRA domain 3, rabbit antibodies
AS08 293 | Anti-Tic110, rabbit antibodies
Plant protein extraction buffer
Secondary antibodies

Additional information
Cellular compartment marker of chloroplast membrane

Application information

Recommended dilution
1 : 2500 (WB)

Expected | apparent MW
48 | 45 kDa (Arabidopsis thaliana)

Confirmed reactivity
Arabidopsis thaliana, Catharanthus roseus, Nicotiana tabacum, Oryza sativa, Physcomitrella patens, Solanum lycopersicum, Vitis vinifera

Predicted reactivity
Picea sitchensis, Pisum sativum, Populus trichocarpa, Ricinus communis

Not reactive in
Chlamydomonas reinhardtii

Additional information
This product can be sold containing ProClin if requested

Selected references


Brillouet et al. (2013). The lannosome is an organelle forming condensed tannins in the chlorophyllous organs of Tracheophyta. Ann Bot. Sep. 11. (Vitis vinifera, immunofluorescence)

Application example

10-15µg of chlorophyll from isolated total plant material (Arabidopsis thaliana), chloroplasts and thylakoids extracted with a buffer containing (25 mM Tricine-NaOH, pH 7.8, 330 mM sorbitol, 1 mM EDTA, 10 mM KCl, 0.15% [w/v] bovine serum albumin, 4 mM sodium ascorbate, and 7 mM L-Cys) were separated on 12 % SDS-PAGE and blotted 1h to PVDF using semi-dry transfer. Blots were blocked with 10% milk for 1h at room temperature (RT) with agitation. Blot was incubated in the primary antibody at a dilution of 1:2 000 overnight at 4⁰C with agitation. The antibody solution was decanted and the blot was rinsed briefly twice, then washed once for 15 min and 3 times for 5 min in TBS-T at RT with agitation. Blot was incubated in secondary antibody (anti-rabbit IgG horse radish peroxidase conjugated, from Agrisera AS09 602) diluted to 1:15 000 in TBS-T for 1h at RT with agitation. Blot was washed as above and developed for 60 seconds with a ImageQuant system from GE Healthcare, exposure time was 60 seconds.

Courtesy of Dr. Rikard Fristedt VU University Amsterdam Faculty of Sciences Department of Physics and Astronomy Biophysics of Photosynthesis, The Netherlands

Sample Preparation Up to 20µg of total protein/chloroplast material from P. patens was prepared by chopping the protonemata into an ice cold isotonic chloroplast buffer (0.3M D-sorbitol, 50mM Hepes-KOH pH8.0, 2mM EDTA, 1mM MgCl2 with additives: 0.1% BSA and PVP-10 and added protease inhibitor tablet). The extract was filtered through a 70µm filter and chloroplasts were pelleted at 250 xg 4⁰C 5 min then layered onto Lanes 1-6: 20µg 21kxg pellet from whole Physcomitrella patens protonemata extract (1), 20µg 21kxg supernatant from whole protonemata extract (2), 20µg broken chloroplasts/thylakoids from 40% Percoll band (3), 20µg intact chloroplasts from 80% Percoll band (4), 10µg pellet material from Percoll gradient (including whole cells and enriched for nuclei) (5), 20µg whole protonemata extract (6)
discontinuous 10, 40, 80% Percoll gradients (which employed the same buffer) and centrifuged at 9k x g 4°C 1h. Broken chloroplasts/thylakoids and chloroplasts, respectively, were recovered from the 40 and 80% bands after centrifugation at 9k x g 4°C 1h by centrifugation at 1k x g in four volumes of buffer (without additives). Samples were frozen at -20°C. Samples were thawed on ice and were diluted in 50mM Tricine pH7.6, 1mM β-mercaptoethanol, 1mM MgCl2 with protease inhibitor tablet for protein concentration determinations and aliquots of up to 20 µg were prepared in 0.8 x Laemmli sample buffer and denatured at 95°C 5 min and were separated on 10-20% Criterion stain free SDS-PAGE and blotted 7 min to PVDF using BioRAD mini Turbo blot semi-dry transfer. Blots were blocked O/N at 4°C with agitation in 10% milk powder in PBS. Blot was rinsed in PBS-T 3 times for 5 min then incubated in the primary antibody at a dilution of 1:1 000 for anti-Toc75 or 1 in 2000 for antiTic40 for 2h at RT with agitation in 0.5% milk powder in PBS-T. The antibody solution was decanted and the blot was rinsed briefly twice, then washed once for 15 min and 3 times for 5 min in PBS-T at RT with agitation. Blot was incubated in secondary antibody (anti-rabbit IgG horse radish peroxidase conjugated, from an unknown source but labelled NIF824) diluted to 1:2,500 in for 1h at RT with agitation in 0.5% milk powder in PBS-T. The blot was washed as above and developed for 10min with chemiluminescent detection reagent. Exposure time was 30 min.

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