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

Product no AS09 501

Cat | Catalase (peroxisomal marker)

Product information

Immunogen	KLH-conjugated peptide chosen from know plant catalase sequences including *Arabidopsis thaliana* isoforms*:* catalase-1 (Q96528, At1g20630), catalase-2 (P25819, At4g35090), catalase-3 (Q42547, At1g20620);
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.
Additional information	This antibody is recognizing all three isoforms of *Arabidopsis thaliana* catalase. Catalase-2 is a main isoform expressed in leaf tissue and localized to peroxisomes. **This antibody contains 0.1 % ProClin.**

Application information

Recommended dilution	1: 500 (IG), 1: 25 - 1: 500 (IL), 2 µg (IP), 1 : 1000 (WB)
Expected | apparent MW	57 | 55 kDa
Confirmed reactivity	Fragaria x ananassa*, Arabidopsis thaliana, Aponogeton madagascariensis, Brassica napus, Brassica oleracea, Fragaria x ananassa, Hordeum vulgare, Lathyrus sativus, Lupinus albus, Lupinus luteus, Moniliophthora perniciosa, Musa acuminate, Musa paradisiaca L., Nicotiana bentamina, Nicotiana tabacum, Oryza sativa, Paulownia tomentosa, Picrorhiza kurroa, Pisum sativum, Plumbago zeylanica, Setaria italica* L. P. Beauv*, Solanum lycopersicum, Spinacia oleracea, Triticum aestivum, Zea mays, Vitis vinifera*
Predicted reactivity	*Avicennia marina, Betula pendula, Brachypodium distachyon, Brassica campestris, Brassica napus, Brassica rapa subsp. pekinensis, Citrus sp., Citrus clementina, Citrus maxima, Camellia sinensis, Cucumis sativus, Cucurbita maxima, Cucurbita moschata, Elaeis guineensis var. tenera, Eucalyptus grandis, Glycine max, Gossypium mexicanum, Helianthus annus, Hibiscus cannabinus, Litchi chinensis, Lupinus albus, Manihot esculenta, Marchantia polymorpha, Morus notabilis, Nicotiana tabacum, Paenibacillus sp., Pinus pinea, Populus albaxtremula, Populus jackii, Prunus persica, Raphanus sativus, Saccharum officinarum, Sesamum indicum, Vicia faba* Species of your interest not listed? Contact us
Not reactive in	*Chlamydomonas reinhardtii*
Additional information	To obtain reactivity with *Solanum lycopersicum* urea gel needs to be apply. Please, contact us for more details. To decrease background signal this antibody needs to be incubated in PBS-T NOT TBS-T. For reference, check image in application example below.
Selected references	Hu et al. (2023).Catalase associated with antagonistic changes of abscisic acid and gibberellin response, biosynthesis and catabolism is involved in eugenol-inhibited seed. Plant Cell Rep. 2023 Dec 23;43(1):10.doi: 10.1007/s00299-023-03096-5. Melicher et al. (2023). Methyl viologen-induced changes in the Arabidopsis proteome implicate PATELLIN 4 in oxidative stress responses.J Exp Bot. 2024 Jan 1;75(1):405-421.doi: 10.1093/jxb/erad363. Tokarz et al. (2021). Stem Photosynthesis-A Key Element of Grass Pea (Lathyrus sativus L.) Acclimatisation to Salinity. Int J Mol Sci. 2021 Jan 12;22(2):685. doi: 10.3390/ijms22020685. PMID: 33445673; PMCID: PMC7828162. Li et al. (2021) Isolation and comparative proteomic analysis of mitochondria from the pulp of ripening citrus fruit. Hortic Res. 2021 Feb 1;8(1):31. doi: 10.1038/s41438-021-00470-w. PMID: 33518707; PMCID: PMC7848011. Wilmowicz et al (2021) EPIP-Evoked Modifications of Redox, Lipid, and Pectin Homeostasis in the Abscission Zone of Lupine Flowers. International Journal of Molecular Sciences. 2021; 22(6):3001. https://doi.org/10.3390/ijms22063001 Bapatla et al. (2021). Modulation of Photorespiratory Enzymes by Oxidative and Photo-Oxidative Stress Induced by Menadione in Leaves of Pea (Pisum sativum). Plants 10, no. 5: 987. https://doi.org/10.3390/plants10050987 Adamiec et al. (2021). Fatty acid composition and cpDNA content in Arabidopsis thaliana mutants deprived of EGY1 protease. PHOTOSYNTHETICA 59 (4): 633-639, 2021, DOI 10.32615/ps.2021.053

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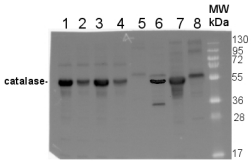
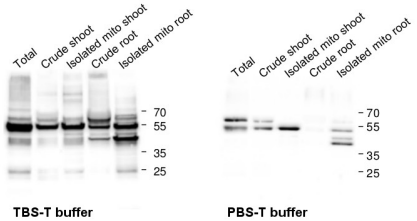
Application example



10 µg of total protein from *Arabidopsis thaliana* Col0 **(1)**, Cat2-(Col0) **(2)**, Ler0 **(3)**, Cat2-(Ler0) **(4)**, *Zea mays* **(5)**, *Oryza sativa* **(6)**, *Brassica oleracea* **(7)**, *Nicotiana bentamina* **(8)** were extracted with 60mM Tris pH 6.9, 10mM DTT, 20% glycerol, 1mm PMSF were separated on 12.5% SDS-PAGE and blotted 1h to PVDF. Blot was blocked with 3% skim milk in PBS+0.05% Tween20 for 1h at room temperature (RT) with agitation. Blot was incubated in the primary antibody at a dilution of 1: 1 000 for 1h at RT with agitation in the same buffer. The antibody solution was decanted and the blot was rinsed briefly three times, then washed 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, Agrisera, AS09 602) diluted to 1:50 000 in 3% skim milk in PBS+0.05% Tween20 for 1h at RT with agitation. The blot was washed as above and developed for 1 min with Western Lightning Plus-ECL (PerkinElmer)according to the manufacturers instructions. Exposure time was 5min. in ChemiDoc XRS+ (Biorad).

Courtesy of Brigitte van de Cotte, Gent University, Belgium



Blots were performed from 10 µg of protein from total extracts, crude extracts as well as from isolated tagged-mitochondria (leaves or roots). *Arabidopsis thaliana* protein extracts were prepared using a protein extraction buffer (100 mM Tris-HCl pH 7.5, 50 mM EDTA, 250 mM NaCl, 0.05% SDS). Samples were denatured with Laemmli buffer (Bio-Rad) supplemented with 10% -mercaptoethanol at 95°C for 10 min before separating the protein mixtures on reducing 12% polyacrylamide gel. Protein extracts were blotted 1h onto a 0.45 µm nitrocellulose membrane using wet transfer. Blots were blocked with 5% milk for 1h/RT with agitation. Blots were incubated with the primary antibodies anti-catalase (Agrisera, AS09 501) at a dilution of 1: 1 000 for ON/4°C with agitation in TBS-T or PBS-T + 2% milk, respectively. Blots were washed 3 times for 5 min in TBS-T or PBS-T at RT with agitation. Blot was incubated for 1h/RT with agitation in Agrisera matching secondary antibodies (anti-rabbit IgG horse radish peroxidase conjugated, AS09 602) diluted to 1:10 000 in TBS-T or PBS-T + 2% milk. Blots were washed 3 times for 5 min in TBS-T or PBS-T following by 3 additional washing steps for 5 min in TBS or PBS. Visualization was carried out using the chemiluminescence kit Agrisera ECLBright; AS16 ECL-N-100 and signals were detected using Azure c600 Western Blot Imaging system (Azure biosystems). Exposure time was 2-5 min.

Courtesy of Dr Jonathan Przybyla-Toscano, Umeå Plant Science Centre, Sweden