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Product no AS09 501

Anti-Cat | Catalase (peroxisomal marker)

Product information

Immunogen	KLH-conjugated peptide chosen from known 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	*Arabidopsis thaliana, Aponogeton madagascariensis, Brachypodium distachyon, Brassica napus, Brassica oleracea, Fragaria x ananassa, Fragaria x ananassa, Hordeum vulgare, Lathyrus sativus, Lupinus albus, Lupinus luteus, Lupinus mutabilis, Moniliophthora perniciosa, Musa acuminate, Musa paradisiaca L., Nicotiana bentamina, Nicotiana tabacum, Olea europea, Oryza sativa, Paulownia tomentosa, Picrorhiza kurroa, Pisum sativum, Plumbago zeylanica, Setaria italica* L. P. Beauv*, Raphanus sativus, Solanum lycopersicum, Spinacia oleracea, Triticum aestivum, Zea mays, Vitis vinifera*
Predicted reactivity	*Avicennia marina, Betula pendula, 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, Malus domestica, Manihot esculenta, Marchantia polymorpha, Morus notabilis, Nicotiana tabacum, Paenibacillus sp., Pinus pinea, Populus albaxtremula, Populus jackii, Prunus persica, Raphanus sativus, Saccharum officinarum, Sesamum indicum, Solanum tuberosum, Ulva prolifera, 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 applied. 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	Chhikara et al. (2026). Silver Form and Aquaporin Deficiency Regulate Transcriptional and Protein Responses in Solanum lycopersicum. Plant Stress Available online 14 August 2026, 101512. Stefaniak et al. (2026). Asparagine-Guided Regulation of Redox Status and Autophagy in Sugar-Starved Lupin (Lupinus spp.) Embryonic Axes—A Transcriptomic and Proteomic Approach. MDPI Volume 27 Issue 15 10.3390/ijms27156851. Xing et al. (2026). Transplanting light-dependent reactions for mammalian eye photosynthesis. Cell . 2026 May 15:S0092-8674(26)00469-1. doi: 10.1016/j.cell.2026.04.034. Cetinbaş Genç et al. (2026). Tolerance mechanisms to UV-B in olive pollen demonstrate cultivar-dependent biochemical responses. Plant Physiol Biochem. 2026 Apr 2:233:111264. doi: 10.1016/j.plaphy.2026.111264. Piechowiak et al. (2025), Ozone Treatment Enhances Antioxidant Status and Energy Metabolism in Radish (Raphanus sativus) Sprouts. Springer Nature, Food Bioprocess Technology. Krupinska et al. (2025). Iron allocation to chloroplast proteins depends on the DNA-binding protein WHIRLY1. Planta. 2025 Jun 17;262(2):32. doi: 10.1007/s00425-025-04736-8. Boussardon et al. (2025). The atypical proteome of mitochondria from mature pollen grains. Curr Biol . 2025 Jan 21:S0960-9822(24)01705-6. doi: 10.1016/j.cub.2024.12.037. Niemiro et al. (2024). LSU family members and NBR1 are novel factors that contribute to homeostasis of catalases and

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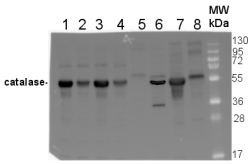
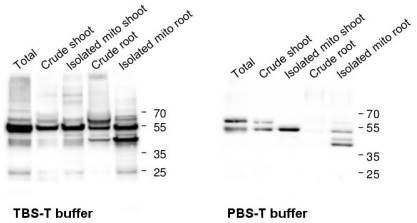
peroxisomes in Arabidopsis thaliana. Sci Rep. 2024 Oct 25;14(1):25412. doi: 10.1038/s41598-024-76862-4.
Hu et al. (2023).Catalase associated with antagonistic changes of abscisic acid and gibberellin response, biosynthesis and catabolism is involved in eugenol-inhibited seed. Plant Cell Rep. 2023 Dec 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.



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