

# Agrisera

This product is for research use only (not for diagnostic or therapeutic use)

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Product no **AS13 2640**  
**ACT | Actin (polyclonal)**

## Product information

<b>Background</b>	<b>Actin</b> is a highly conserved protein and an essential component of cell cytoskeleton and plays an important role in cytoplasmic streaming, cell shape determination, cell division, organelle movement and extension growth. Preferentially expressed in young and expanding tissues, floral organ primordia, developing seeds and emerging inflorescence.
<b>Immunogen</b>	ca. 100 amino acids of recombinant actin conserved more than 80 % in <i>Arabidopsis thaliana</i> : actin-1 <a href="#">P0CJ46</a> <a href="#">AT2G37620</a> , actin-2 <a href="#">Q96292</a> <a href="#">AT3G18780</a> , actin-3 <a href="#">P0CJ47</a> <a href="#">AT3G53750</a> , actin-4 <a href="#">P53494</a> <a href="#">AT5G59370</a> , actin-5 <a href="#">Q8RYC2</a> <a href="#">At2g42100</a> , actin-7 <a href="#">P53492</a> <a href="#">At5g09810</a> , actin-8 <a href="#">Q96293</a> <a href="#">AT1G49240</a> , actin-11 <a href="#">P53496</a> , <a href="#">AT3G12110</a> , actin-12 <a href="#">P53497</a> <a href="#">AT3G46520</a>
<b>Host</b>	Rabbit
<b>Clonality</b>	Polyclonal
<b>Purity</b>	Serum
<b>Format</b>	Lyophilized
<b>Quantity</b>	50 µl
<b>Reconstitution</b>	For reconstitution add 50 µl of sterile water.
<b>Storage</b>	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.
<b>Tested applications</b>	immunofluorescence (IF), Western blot (WB)
<b>Related products</b>	<a href="#">AS10 702</a>   Anti-Actin-11, monoclonal mouse antibody <a href="#">AS10 681</a>   Anti-tubulin beta chain, rabbit antibody <a href="#">AS10 680</a>   Anti-tubulin alpha chain, rabbit antibody <a href="#">AS16 3140</a>   Actin-2, mouse monoclonal antibody <a href="#">AS16 3141</a>   Actin-8, mouse monoclonal antibody <a href="#">AS16 3139</a>   Actin-1, monoclonal antibody  <a href="#">Plant protein extraction buffer</a>  <a href="#">Secondary antibodies</a>
<b>Additional information</b>	Antibody available in 3 various pack sizes: 50, 100 and 150 µl - Please <a href="#">inquire</a> .  This product can be sold containing ProClin if requested.

## Application information

<b>Recommended dilution</b>	1:100 - 1 : 250 (IF), 1 : 3000-1 : 5000 (WB)
<b>Expected   apparent MW</b>	41.6   45 kDa
<b>Confirmed reactivity</b>	<i>Agrostis stolonifera</i> cv. 'Penncross', <i>Arabidopsis thaliana</i> , <i>Brassica</i> sp., <i>Cucumis sativus</i> , <i>Cynara cardunculus</i> , <i>Glycine max</i> , <i>Hordeum vulgare</i> , <i>Nicotiana tabacum</i> , <i>Phoenix dactylifera</i> , <i>Setaria italica</i> , <i>Solanum tuberosum</i> , <i>Triticum aestivum</i> , <i>Zea mays</i>
<b>Predicted reactivity</b>	<i>Agropyron cristatum</i> , <i>Beta vulgaris</i> , <i>Betula luminifera</i> , <i>Brassica napus</i> , <i>Brassica rapa</i> subsp. <i>pekinensis</i> , <i>Cannabis sativa</i> L., <i>Capsella rubella</i> , <i>Castanea sativa</i> , <i>Chorisporea bungeana</i> , <i>Cyanidioschyzon merolae</i> strain 10D, <i>Glycine soja</i> , <i>Halogeton glomeratus</i> , <i>Medicago truncatula</i> , <i>Malus domestica</i> , <i>Oryza sativa</i> , <i>Pisum sativum</i> , <i>Populus</i> sp., <i>Solanum lysopersicum</i> , <i>Solanum tuberosum</i> , <i>Phaseolus vulgaris</i> , <i>Picea abies</i> , <i>Picea sitchensis</i> , <i>Prunus avium</i> , <i>Ricinus communis</i> , <i>Rubus plicatus</i> , <i>Theobroma cacao</i> , <i>Vicia faba</i>

Species of your interest not listed? [Contact us](#)

#### Not reactive in

*Chlamydomonas reinhardtii* (too high background for this species)

#### Selected references

- [Khajuria](#) et al. (2020). Photochemical Efficiency Is Negatively Correlated With the  $\Delta^9$ -Tetrahydrocannabinol Content in Cannabis Sativa L. *Plant Physiol Biochem.* 2020 Apr 8;151:589-600. doi: 10.1016/j.plaphy.2020.04.003.
- [Molnár](#) et al. (2020). Nitro-oxidative Signalling Induced by Chemically Synthesized Zinc Oxide Nanoparticles (ZnO NPs) in Brassica Species. *Chemosphere*, 251, 126419
- [Roustan](#) et al. (2020). Protein sorting into protein bodies during barley endosperm development is putatively regulated by cytoskeleton members, MVBs and the HvSNF7s. *Sci Rep.* 2020 Feb 5;10(1):1864. doi: 10.1038/s41598-020-58740-x.
- [Dalmadi](#) et al. (2019). AGO-unbound cytosolic pool of mature miRNAs in plant cells reveals a novel regulatory step at AGO1 loading. *Nucleic Acids Res.* 2019 Aug 8. pii: gkz690. doi: 10.1093/nar/gkz690.
- [Patankar](#) et al. (2019). Functional Characterization of Date Palm Aquaporin Gene PdPIP1;2 Confers Drought and Salinity Tolerance to Yeast and Arabidopsis. *Genes (Basel)*. 2019 May 22;10(5). pii: E390. doi: 10.3390/genes10050390.
- [Scherer](#) et al. (2019). Pulsed electric field (PEF)-assisted protein recovery from *Chlorella vulgaris* is mediated by an enzymatic process after cell death. *Algal Research*, Volume 41, August 2019, 101536.
- [Czobor](#) et al. (2019). Comparison of the response of alternative oxidase and uncoupling proteins to bacterial elicitor induced oxidative burst. *PLoS One.* 2019 Jan 10;14(1):e0210592. doi: 10.1371/journal.pone.0210592.
- [Deng](#) et al. (2019). Integrated proteome analyses of wheat glume and awn reveal central drought response proteins under water deficit conditions. *J Plant Physiol.* 2019 Jan;232:270-283. doi: 10.1016/j.jplph.2018.11.011.
- [Wang](#) et al. (2018). A role of GUNs-Involved retrograde signaling in regulating Acetyl-CoA carboxylase 2 in Arabidopsis. *Biochem Biophys Res Commun.* 2018 Nov 2;505(3):712-719. doi: 10.1016/j.bbrc.2018.09.144.
- [Borovik](#) and Grabelnych (2018). Mitochondrial alternative cyanide-resistant oxidase is involved in an increase of heat stress tolerance in spring wheat. *J Plant Physiol.* 2018 Dec;231:310-317. doi: 10.1016/j.jplph.2018.10.007.
- [Pan](#) et al. (2018). Comparative proteomic investigation of drought responses in foxtail millet. *BMC Plant Biol.* 2018 Nov 29;18(1):315. doi: 10.1186/s12870-018-1533-9.
- [López Calcagno](#) et al. (2018). Overexpressing the H protein of the glycine cleavage system increases biomass yield in glasshouse and field grown transgenic tobacco plants. *Plant Biotechnology Journal*, May 2018.
- [Li](#) et al. (2018). Comparative proteomic analysis of key proteins during abscisic acid-hydrogen peroxide-induced adventitious rooting in cucumber (*Cucumis sativus* L.) under drought stress. *Journal of Plant Physiology* Volume 229, October 2018, Pages 185-194.
- [Adhikari](#) et al. (2018). Sulfate improves cadmium tolerance by limiting cadmium accumulation, modulation of sulfur metabolism and antioxidant defense system in maize. *Environmental and Experimental Botany* Volume 153, September 2018, Pages 143-162.
- [Brandt](#) et al. (2018). Extended darkness induces internal turnover of glucosinolates in Arabidopsis thaliana leaves. *PLoS One.* 2018 Aug 9;13(8):e0202153. doi: 10.1371/journal.pone.0202153.
- [Jespersen](#) et al. (2017). Metabolic Effects of Acibenzolar-S-Methyl for Improving Heat or Drought Stress in Creeping Bentgrass. *Front Plant Sci.* 2017 Jul 11;8:1224. doi: 10.3389/fpls.2017.01224. eCollection 2017. (western blot, *Agostis stolonifera* cv. 'Penncross')
- [Qiu](#) et al. (2015). Soy 14-3-3 protein SGF14c, a new regulator of tolerance to salt-alkali stress. *Plant Biotechnology Reports* pp 1-9.
- [Shaw](#) et al. (2015). -aminobutyric acid mediated drought stress alleviation in maize (*Zea mays* L.). *Environ Sci Pollut Res Int.* 2015 Sep 29.
- [Buxa](#) et al. (2015). Phytoplasma infection in tomato is associated with re-organization of plasma membrane, ER stacks, and actin filaments in sieve elements. *Front Plant Sci.* 2015; 6: 650. Published online 2015 Aug 19.
- [Zheng](#) et al. (2014). iTRAQ-based quantitative proteomics analysis revealed alterations of carbohydrate metabolism pathways and mitochondrial proteins in a male sterile cybrid pummelo. *J Proteome Res.* 2014 May 13.

For high resolution images, please visit the specific product page at [www.agrisera.com](http://www.agrisera.com)

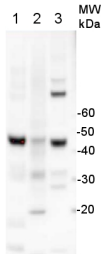
#### Application example

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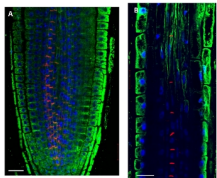
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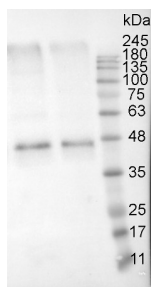
Agrisera 2013

15 µg of total protein extracted with PEB (**AS08 300**) from leaf tissue of (1) *Arabidopsis thaliana*, (2) *Hordeum vulgare*, (3) *Zea mays* were separated on 4-12% NuPage (Invitrogen) **LDS-PAGE** and blotted 1h to **PVDF**. Filters were blocked 1h with 2% low-fat **milk powder** in TBS-T (0.1% TWEEN 20) and probed with **anti-actin** (AS13 2640, 1:2500, 1h) and secondary anti-rabbit (1:10 000, 1 h) antibody (HRP conjugated, recommended secondary antibody **AS09 602**) in TBS-T containing 2% low fat milk powder. Antibody incubations were followed by washings in TBS-T (15, +5, +5, +5 min). All steps were performed at RT with agitation. Signal was detected with chemiluminescent detection reagent using a Fuji LAS-3000 CCD (300s, standard sensitivity). Exposure time was 2 min.



Actin cytoskeleton in 5 days old *Arabidopsis thaliana* seedlings. Actin signal shown in green, PIN1 in red and DAPI in blue. The material has been fixed in 2% formaldehyde for 45 minutes. Tissue cleaning has been performed before immunolocalization. Rabbit anti-actin primary antibody was diluted in 1:250 and anti-rabbit Alexa 488 and Alexa 555 were both diluted in 1:500 (Invitrogen). Scale bar - 20 µm.

Courtesy: Dr. Taras Pasternak, Freiburg University, Germany



Proteins were extracted from tuber flesh of Russet Burbank potato (*Solanum tuberosum*) with 0.1 M Tris HCl (pH=8.0), 5% sucrose (m/v), 2% (m/v) SDS, protease inhibitors (PMSF 1mM). Samples were heated 95°C 5 min, and 10 µg of total protein was resolved in 12% SDS PAGE and blotted to PVDF membrane for 1h-1.5h using tank transfer. Blots were blocked with a skimmed milk 4% (m/v) in T-TBS (1.5h) at RT with agitation. Primary antibodies (AS13 2640) were applied overnight +4°C in dilution 1:5000 with agitation. After washing with T-TBS 2-3 times, membrane was incubated with secondary antibodies (Goat Anti-Rabbit HRP conjugate, Transgen biotech HS101) 1:10000 for 1 hour at RT. Blot was washed as above and developed with ECL (Clarity Western ECL Substrate, BioRad, 170-5060) for 5 – 10 minutes. Exposure time – 20.395 seconds.

Courtesy of Iauhenia Isayenka, University of Sherbrooke, Canada