

product **AS08 371**

### HSP70 | heat shock protein 70 cytoplasmic

#### product information

<b>background</b>	<b>Heat-shock protein 70 (Hsp70)</b> is the major stress-inducible protein in vertebrates and is highly conserved throughout evolution. It plays a role as a molecular chaperone and is important for allowing cells to cope with acute stressor insult, especially those affecting the protein machinery. Heat shock cognate protein 70 (HSC70), is a highly conserved protein and a member of the family of molecular chaperones.
<b>immunogen</b>	<u>KLH</u> -conjugated synthetic peptide conserved in known higher plant HSC70 proteins including three isoforms of <i>Arabidopsis thaliana</i> HSC70-1 ( <u>NP_001119156.1</u> ), HSC70-2 ( <u>NP_195869.1</u> ) and HSC70-3 ( <u>NP_187555.1</u> ) as well as heat shock inducible Hsp70 of <i>Arabidopsis thaliana</i> <u>AT3g12580/T2E22_110</u> and <u>At1g16030</u> and <u>AT3g12580/T2E22_110</u>
<b>antibody format</b>	rabbit polyclonal serum lyophilized
<b>quantity</b>	150 µl for reconstitution add 150 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>	western blot (WB), immunoprecipitation (IP)
<b>additional information</b>	Immunoprecipitation protocol using Agrisera anti-Hsp70 cytosolic antibodies can be found <a href="#">here</a> .

#### application information

<b>recommended dilution</b>	1: 3000 with standard ECL on 5 µg of protein per well (WB), 2-3 µl/protein extract of concentration 3-5 mg/ml
<b>expected   apparent MW</b>	70 kDa
<b>confirmed reactivity</b>	<i>Arabidopsis thaliana</i> , <i>Cucumis sativus</i> , <i>Hordeum vulgare</i> , <i>Silene vulgaris</i> , <i>Solanum lycopersicum</i> , <i>Zea mays</i> , algae: <i>Desmodesmus subspicatus</i>
<b>predicted reactivity</b>	dicots including <i>Glycine max</i> , <i>Pisum sativum</i> , <i>Solanum lycopersicum</i> and monocots including <i>Oryza sativa</i> , <i>Triticum aestivum</i> ;; trees: <i>Populus balsamifera</i> , moss: <i>Physcomitrella patens</i> , algae including <i>Chlamydomonas reinhardtii</i> and <i>Volvox</i> sp.
<b>not reactive in</b>	no confirmed exceptions from predicted reactivity known in the moment
<b>additional information</b>	not available at the moment

### selected references

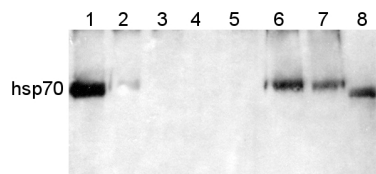
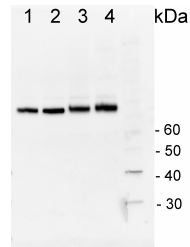
Janicka-Russak et al. (2012). Different effect of cadmium and copper on H<sup>+</sup>-ATPase activity in plasma membrane vesicles from *Cucumis sativus* roots. *J. Exp. Botany*, March 2012, ahead of print.

Holdig (2011). Pyrophosphate dependent fructose-6-phosphate 1-phosphotransferase induction and attenuation of Hsp gene expression during endosperm modification in Quality Protein Maize. *Plant Physiol* Dec. 8 (ahead of print).

Tukaj and Tukaj (2010). Distinct chemical contaminants induce the synthesis of Hsp70 proteins in green microalgae *Desmodesmus subspicatus*: Heat pretreatment increases cadmium resistance. *Journal of Thermal Biology* 35 (5):239-244.

### application example

**1 µg of total protein** from (1) *Hordeum vulgare* pre heat shock leaf extracted with PEB (**AS08 300**), (2) *Hordeum vulgare* post heat shock (2h 40°C) leaf extracted with PEB (**AS08 300**), (3) *Zea mays* pre heat shock total protein leaf extracted with PEB (**AS08 300**), (4) *Zea mays* post heat shock (2h 40°C) total protein leaf extracted with PEB (**AS08 300**) were separated on **4-12% NuPage** (Invitrogen) **LDS-PAGE** and blotted 1h to PVDF (**Milipore**). Filters were blocked 1h with 2% low-fat **milk powder** in TBS-T (0.1% TWEEN 20) and probed with anti-HSP70 antibody (**AS08 371**, **1:20 000**, 1h) and secondary anti-rabbit (**1:20 000**, 1 h) antibody (HRP conjugated, Abcam) in TBS-T containing 2% low fat milk powder. All steps were performed at RT with agitation. Signal was detected with **ECL Advance** (GE Healthcare)



**Protein** from *Solanum lycopersicum* (1) total cell extract ca. 30-50 µg, (2) and (3) nuclei pellet, (4) and (5) ca. 7 µg of nuclei fraction, (6) and (7) cytoplasmic pellet, (8) ca. 7 µg of cytoplasm fraction, were separated on **10% SDS-PAGE** and blotted 1h to nitrocellulose (**Schleicher & Schuell**). Filters were blocked 1h with 2% low-fat **milk powder** in TBS-T (0.1% TWEEN 20) and probed with anti-HSP70 antibody (**AS08 371**, **1:5000**, 3h RT). The antibody solution was decanted and the blot was rinsed briefly. Washed 3 times for 15 min in TBS-T at room temperature with agitation. Blot was incubated with a secondary antibody (anti-rabbit IgG horse radish

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peroxidase conjugated, from Sigma ) diluted to 1: 5:000. The blot was washed as above and developed for 1 min with ECL detection reagent according to the manufacturers instructions. Courtesy Dr Rena Gorovits