

Product no **AS08 285****HSP21 | Chloroplastic heat shock protein****Product information**

Immunogen | Recombinant Hsp21 protein derived from the sequence of *Arabidopsis thaliana* hsp21 UniProt: [P31170](#), TAIR: [At4g27670](#)

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 | Recommended load per well 20 µg of total protein

This product can be sold containing proClin if requested.

Application information

Recommended dilution | 1 : 3000 (WB)

Expected | apparent MW | 25 | 21 kDa

Confirmed reactivity | *Agostis stolonifera* cv. 'Penncross', *Arabidopsis thaliana*, *Nicotiana tabacum*

Not reactive in | *Chlamydomonas reinhardtii*

Additional information | Please, note that there might be no HSPs accumulation below temperature of 32-34°C, HSPs are induced when the plant experience temperatures higher than the growing temperature with around 10°C, So, the HSPs induction temperatures for plants grown at 18C differ from these for plants grown at 24C, Another very effective parameter is the humidity, When using low humidity the plant has a chance to cool down through transpiration, In this case the HSPs induction requires higher temperatures

Selected references | [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')

[Lämke](#) et al. (2016). A hit-and-run heat shock factor governs sustained histone methylation and transcriptional stress memory. *EMBO J.* 2016 Jan 18;35(2):162-75. doi: 10.15252/embj.201592593. Epub 2015 Dec 9.

[McLoughlin](#) et al. (2016) Class I and II Small Heat Shock Proteins Together with HSP101 Protect Protein Translation Factors during Heat Stress. *Plant Physiol.* 2016 Oct;172(2):1221-1236.

[Shen](#) et al. (2016). The Arabidopsis polyamine transporter LHR1/PUT3 modulates heat responsive gene expression by enhancing mRNA stability. *Plant J.* 2016 Aug 19. doi: 10.1111/tbj.13310. [Epub ahead of print]

[Almoguera](#) et al. (2015). Heat shock transcription factors involved in seed desiccation tolerance and longevity retard vegetative senescence in transgenic tobacco. *Planta.* 2015 May 29.

[Hai-Dong Yu](#) et al. (2012). Downregulation of Chloroplast RPS1 Negatively Modulates Nuclear Heat-Responsive Expression of HsfA2 and Its Target Genes in Arabidopsis. *Plos Genetics.*