

Agrisera

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

contact: support@agrisera.com

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

product **AS04 051**

2 | Photosynthesis Tool Kit - quantitation

product information

Background	<p>This kit allows quantitation of major photosynthetic proteins: Rubisco, PsaC (PSI) and PsbA (PSII) as well as determination of PSI/PSII ratios using the western blot technique.</p> <p>The kit contains following global antibodies, protein standards and secondary antibody: Rabbit anti-Rbcl (Form I and Form II). Product number: AS03 037 Rabbit anti-PsaC. Product number: AS10 939 Rabbit anti-PsbA Product number: AS05 084 Rubisco protein standard. Product number: AS01 017S PsaC protein standard. Product number: AS04 042S PsbA protein standard. Product number: AS01 016S Goat anti-Rabbit IgG (H&L), HRP conjugated (50 µl), Product number: AS09 602-trial AgriseraECL Bright (10 ml trial pack) AS16 ECL-N-10</p>
Immunogen	<p>KLH-conjugated syntenic peptides for respective antibodies, see product info sheets</p>
Host	<p>Rabbit. Secondary antibody: Goat.</p>
Clonality	<p>Polyclonal</p>
Quantity	<p>50 µl of respective antibody. 100 µl / tube of each protein standard. 50 µl of secondary antibody. 10 ml of ECL reagent.</p>
Storage	<p>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.</p>
Tested applications	<p>western blot (WB)</p>
Related products	<p>Plant and algal protein extraction buffer Secondary antibodies</p>
Additional information	<p>Product information - Primary antibodies:</p>

Product number:	Product name:	Reconstitution:	Recommended dilution:
AS03 037	Rabbit Anti-Rbcl Global antibody	For reconstitution see lable on respective tube.	1:5000-10 000 with standard ECL
AS10 939	Rabbit Anti-PsaC Global antibody	For reconstitution see lable on respective tube.	1:1000 with standard ECL
AS05 084	Rabbit Anti-PsbA Global antibody	For reconstitution see lable on respective tube.	1:10 000 with standard ECL

* All primary antibodies in this kit are raised in rabbits.

Product information - Protein standards:

Product number:	Product name:	Concentration:	Size:	Western Blot – Positive Control:
AS01 016S	PsbA *	0.25 pmol/ µl	41.5 kDa#	To generate a standard curve, 3 loads are suggested (0.5, 2 and 4 ul). For most applications a sample load of 0.2 ug of chlorophyll will give a PsbA signal in this range.

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				A 2 ul load is optimal for most chemiluminescent detection systems to use as a positive control.
AS01 017S	RbcL *	0.15 pmol/ µl	52.7 kDa	To generate a standard curve, 3 loads are suggested (0.5, 2 and 4 ul). For most applications a sample load of 0.2 ug of chlorophyll will give a RbcL signal in this range. A 2 ul load is optimal for most chemiluminescent detection systems to use as a positive control.
AS04 042S	PsaC *	0.15 pmol/µl	11.5 kDa [#]	To generate a standard curve, 3 loads are suggested (0.5, 2 and 4 µl). For most applications a sample load of 0.2 µg of chlorophyll will give a PsaC signal in this range. A 2 ul load is optimal for most chemiluminescent detection systems as a positive control.

*These proteins are larger than a respective native protein due to the addition of His-tag

* **For reconstitution of standards see lable on respective tube.**

Product information - Secondary antibody:

AS09 602-trial Goat anti-Rabbit IgG (H&L), HRP conjugated, 50 µl (2x25 µl)

Product information - ECLreagent:

AS16 ECL-N-10 AgriseraECL Bright (10 ml trial pack)

Educational information about Quantitative western blot can be found here: [detailed method description](#), [video tutorial](#)

Application information

Confirmed reactivity | Algae, Cyanobacteria, Higher plants

Additional information | Estimation of PSI to PSII ratio can be done using quantitative western blot technique using anti-PsaC (PSI) and PsaB (PSII) antibodies.
References: [Brown et al. \(2007\)](#). Resource dynamics during infection of *Micromonas pusilla* by virus MpV-SP1. *Environmental Microbiology* 9(11): 2720-2727. [Brown et al. \(2008\)](#). Flux capacities and acclimation costs in *Trichodesmium* from the Gulf of Mexico. *Marine Biology* 154 (3): 413-422.

Selected references | [Abramson \(2018\)](#). CARBON PARTITIONING IN ENGINEERED CYANOBACTERIUM FOR THE STUDY OF FEEDBACK INHIBITION OF PHOTOSYNTHESIS. Michigan State University, ProQuest Dissertations Publishing, 2018. 10826228.
[MacKenzie et al \(2005\)](#). Large reallocations of carbon, nitrogen and photosynthetic reductant among phycobilisomes, photosystems and Rubisco during light acclimation in *Synechococcus elongatus* are constrained in cells under low environmental inorganic carbon. *Arch of Microbiol.* 183: 190 - 202.
[Bouchard et al. \(2006\)](#) UVB effects on the photosystem II-D1 protein of phytoplankton and natural phytoplankton communities. *Photochem and Photobiol* 82: 936-951.
[Morash et al. \(2007\)](#) Macromolecular dynamics of the photosynthetic system over a seasonal developmental progression in *Spartina alterniflora*. *Can J. of Bot.* 85: 476-483(8)