

product **AS07 212**

## VDAC1 | voltage-dependent anion-selective channel protein 1

### product information

<b>background</b>	<b>VDAC1</b> protein (called also Synonymes: At3g01280, outer mitochondrial membrane protein porin 1, T22N4_9, T22N4.9, VDAC 1, Voltage-dependent anion-selective channel protein 1, voltage-gated ion-selective channel) forms a channel through the cell membrane for diffusion of small hydrophilic molecules. Evolutionary origin of VDAC protein is not clear and their structure and properties are quite different making those proteins only conceptually like porins (Clausen et al. 2004).
<b>immunogen</b>	<u>KLH</u> -conjugated peptide conserved in all known higher plant VDAC1 proteins including <i>Arabidopsis thaliana</i> with the locus name: <u>At3g01280</u>
<b>antibody format</b>	rabbit polyclonal affinity purified serum, in PBS pH 7.4 lyophilized
<b>quantity</b>	200 µg for reconstitution add 200 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), Blue-native (2D BN/SDS-PAGE), immunolocalization (IL)
<b>additional information</b>	cellular [compartment marker] of mitochondrial outer membrane

### application information

<b>recommended dilution</b>	1:5000 on 2-30 µg of protein/lane with standard ECL (WB), 1: 500 (IL)
<b>expected   apparent MW</b>	29 kDa (for <i>Arabidopsis thaliana</i> )
<b>confirmed reactivity</b>	<i>Arabidopsis thaliana</i> , <i>Papaver</i> sp. pollen tubes (IL), <i>Spinacia oleracea</i> , <i>Physcomitrella patens</i> ,
<b>predicted reactivity</b>	dicots including <i>Nicotiana tabacum</i> , <i>Plantago major</i> , <i>Ricinus communis</i> , monocots including <i>Triticum aestivum</i> ,
<b>not reactive in</b>	<i>Chlamydomonas reinhardtii</i> , <i>Glycine max</i> , <i>Zea mays</i> , diatoms
<b>additional information</b>	Amount of mitochondrial fraction detected by anti-VDAC1 antibody was from 2-10 µg. Immunolocalization method description and images are available <a href="#">here</a> Blue-native (2D BN/SDS-PAGE) methodology is described in Piechota et al. 2010

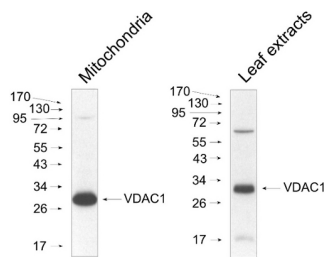
### selected references

[Juszczuk](#) and Ostaszewska (2011). Respiratory activity, energy and redox status in sulphur-deficient bean plants. *Environm and Exper Botany* in print.

[Lang](#), E.G.E., S.J. Mueller, S.N.W. Hoernstein, J. Porankiewicz-Asplund, M. Vervliet-Scheebaum, R. Reski (2010). Simultaneous isolation of pure and intact chloroplasts and mitochondria from moss as basis for sub-cellular proteomics. *Plant Cell Reports*, DOI: 10.1007/s00299-010-0935-4. (open source)

[Gibala](#) et al. (2009). The lack of mitochondrial AtFtsH4 protease alters *Arabidopsis* leaf morphology at the late stage of rosette development under short day photoperiod. *Plant J.* In press.

### application example



**10 µg** of mitochondrial fraction from *Arabidopsis thaliana* and **25 µg** of *Arabidopsis thaliana* leaf extract were separated on 10% gel and blotted on nitrocellulose membrane using wet transfer (0.22% CAPS, pH 11). Filters were blocked (1.5h) in 5% milk in TBST (1X TBS, 0,1% Tween 20), incubated with 1: 5000 anti-VDAC1 antibodies (2h in TBST) followed by incubation with 1: 10 000 secondary anti-rabbit (1h) HRP-coupled antibodies and visualized with standard ECL on Kodak autoradiography film for 15-60 s. Mitochondria were isolated as described by Urantowka et al. (*Plant Mol Biol*, 2005, 59:239-52). Mitochondrial pellets were suspended in 1X Laemmli buffer (5% beta-mercaptoetanol, 3.7% glycerol, 1.1% SDS, 23 mM Tris- HCl pH 6.8, 0.01% bromophenol blue), heated (95°C, 5 min.) and centrifuged (13 000rpm, 1 min.). Leaf extracts were prepared as described by Martinez-Garcia et al. (*Plant J.*, 1999, 20:251-7).  
Courtesy Dr. Janusz Piechota, Wrocław University, Poland