

product **AS06 203A**  
**Idh | isocitrate dehydrogenase**

### product information

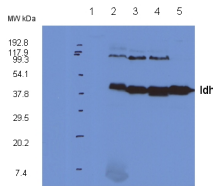
<b>background</b>	Plant NADH dependent isocitrate dehydrogenase enzyme is located in mitochondrial matrix. This enzyme is classified as an oxidoreductase and its function is to catalyze a reaction in the citric acid cycle, specifically the sequential dehydrogenation and decarboxylation of isocitrate to form $\alpha$ -ketoglutarate. It removes hydrogens from its substrate, isocitrate. In addition to this process, it functions as a decarboxylase, removing a CO <sub>2</sub> from the six-carbon substrate to form a five-carbon product mentioned above as $\alpha$ -ketoglutarate. There are two forms of this enzyme NADP <sup>+</sup> and NAD <sup>+</sup> dependent.
<b>immunogen</b>	KLH-conjugated peptide 1 and peptide 2 conserved in all higher plants mitochondrial, NAD dependent isocitrate dehydrogenase subunits including <i>Arabidopsis thaliana</i> IDH-I <a href="#">Q8LFCO</a> and IDH-II <a href="#">P93032</a>
<b>antibody format</b>	rabbit polyclonal affinity purified serum, in PBS pH 7.4 lyophilized
<b>quantity</b>	180 $\mu$ g for reconstitution add 180 $\mu$ l 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)
<b>additional information</b>	Peptide used to elicit this antibody is not conserved in NADPH dependent enzymes, partially conserved across eukaryotic Idh subunits. Some conservation across bacterial which contain the NAD-dependent form of Idh (as opposed to the NADP-dependent form).

### application information

<b>recommended dilution</b>	1 : 5 000 with standard ECL (WB)
<b>expected   apparent MW</b>	39   45 kDa ( <i>Arabidopsis thaliana</i> )
<b>confirmed reactivity</b>	<i>Arabidopsis thaliana</i> , <i>Capsicum annuum</i> , <i>Lycopersicon esculentum</i> , <i>Pisum sativum</i> , <i>Solanum tuberosum</i> , <i>Zea mays</i>
<b>predicted reactivity</b>	dicots including <i>Brassica napus</i> , <i>Vitis vinifera</i> , monocots including <i>Oryza sativa</i> , <i>Zea mays</i>
<b>not reactive in</b>	<i>Chlamydomonas reinhardtii</i>
<b>additional information</b>	cellular [compartment marker] of mitochondrial matrix

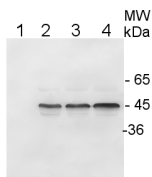
selected references | to be added when available

## application example



**20 µg of total protein** from (1) *Arabidopsis thaliana* leaf extract, (2) *Arabidopsis thaliana* fraction enriched with mitochondria, (3) *Arabidopsis thaliana* pure mitochondria, (4) *Pisum sativum* pure mitochondria, (5) *Solanum tuberosum* pure mitochondria were separated on **4-12% SDS-PAGE** and blotted to nitrocellulose. Blots were blocked immediately following transfer in 5% milk powder in TBS. Blots were incubated in the primary antibody at a dilution of 1: 5 000 for 1h at room temperature with agitation. Blots were developed using ECL reagent (GE Healthcare).

\* Band detected at ca. 90 kDa is suspected to be a dimer of Idh, since this band is depleted upon peptide competition experiment.



**15 µg** of total protein stem extract from *Lycopersicon esculentum* (1), pure mitochondrial fraction isolated from stems of *Lycopersicon esculentum* (2), pure mitochondrial fraction isolated from stems of *Capsicum annuum* (3), pure mitochondrial fraction isolated from tubers of *Solanum tuberosum* (4) were separated on **10% SDS-PAGE** and blotted onto **nitrocellulose**. After blocking with 5% milk in TBST, blots were incubated with the primary antibody at a dilution of **1:1000** in TBST for 1.5h at room temperature. Following incubation and wash steps, blots were incubated with SIGMA secondary Anti-Rabbit IgG, Alkaline Phosphatase Conjugate for 1 hour at a dilution of 1:40000. Blots were developed with the alkaline phosphatase detection system using **NBT/BCIP** (SIGMA).

Courtesy of Bartosz Szabala, Institute of Plant Genetics, Polish Academy of Science.