



SZABO SCANDIC

Part of Europa Biosite

Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

Weitere Information auf den folgenden Seiten!
See the following pages for more information!



Lieferung & Zahlungsart

siehe unsere [Liefer- und Versandbedingungen](#)

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

ACO2 (h4): 293T Lysate: sc-172722

BACKGROUND

ACO2, also referred to as aconitate hydratase, citrate hydrolyase or aconitase, is an iron-sulfur hydrolyase that catalyzes the non-limiting interconversion of citrate and isocitrate in the tricarboxylic acid cycle. It is expressed in the mitochondria and maintains a citrate:isocitrate ratio of approximately 10:1. ACO2 contains a redox-sensitive iron-sulfur cluster that exists in two states: active (Fe4S4) and inactive (Fe3S4). ACO2 activity is dependent on the state of this cluster as well as the presence of two conserved cysteine residues. In normal prostate epithelial cells ACO2 activity is prevented due to the high levels of zinc inhibiting the enzyme. In these citrate-producing epithelial cells citrate oxidation is impaired, allowing citrate to accumulate and exhibit a citrate:isocitrate ratio of approximately 30:1. In malignant prostate cells zinc is unable to accumulate, therefore ACO2 activity resumes and citrate is oxidized.

REFERENCES

1. Rafferty, S.P., et al. 1996. Inhibition of hemoglobin expression by heterologous production of nitric oxide synthase in the K-562 erythroleukemic cell line. *Blood* 88: 1070-1078.
2. Juang, H.H. 2004. Nitroprusside stimulates mitochondrial aconitase gene expression through the cyclic adenosine 3',5'-monophosphate signal transduction pathway in human prostate carcinoma cells. *Prostate* 61: 92-102.
3. Liang, L.P. and Patel, M. 2004. Iron-sulfur enzyme mediated mitochondrial superoxide toxicity in experimental Parkinson's disease. *J. Neurochem.* 90: 1076-1084.
4. Yu, Z., et al. 2006. Characterization of the mitochondrial aconitase promoter and the identification of transcription factor binding. *Prostate* 66: 1061-1069.
5. Beasley, C.L., et al. 2006. Proteomic analysis of the anterior cingulate cortex in the major psychiatric disorders: Evidence for disease-associated changes. *Proteomics* 6: 3414-3425.
6. Singh, K.K., et al. 2006. Mitochondrial aconitase and citrate metabolism in malignant and nonmalignant human prostate tissues. *Mol. Cancer* 5: 14.
7. Hunzinger, C., et al. 2006. Comparative profiling of the mammalian mitochondrial proteome: multiple aconitase-2 isoforms including N-formylkynurenine modifications as part of a protein biomarker signature for reactive oxidative species. *J. Proteome Res.* 5: 625-633.
8. Bulteau, A.L., et al. 2007. Oxidative stress and protease dysfunction in the yeast model of Friedreich ataxia. *Free Radic. Biol. Med.* 42: 1561-1570.
9. Martelli, A., et al. 2007. Folding and turnover of human iron regulatory protein 1 depend on its subcellular localization. *FEBS J.* 274: 1083-1092.

CHROMOSOMAL LOCATION

Genetic locus: ACO2 (human) mapping to 22q13.2.

PRODUCT

ACO2 (h4): 293T Lysate represents a lysate of human ACO2 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

ACO2 (h4): 293T Lysate is suitable as a Western Blotting positive control for human reactive ACO2 antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.