

# OSCP (A-8): sc-365162



The Power to Question

## BACKGROUND

Oligomycin-sensitivity conferring protein (OSCP), also designated ATP50, is the O subunit of ATP synthase which localizes to the mitochondria and catalyzes ATP synthesis. Mitochondrial ATP synthases (ATPases) transduce the energy contained in membrane electrochemical proton gradients into the energy required for synthesis of high-energy phosphate bonds. ATPases contain two linked complexes:  $F_1$ , the hydrophilic catalytic core; and  $F_0$ , the membrane-embedded protein channel.  $F_1$  consists of three  $\alpha$  chains and three  $\beta$  chains, which are weakly homologous, as well as one  $\gamma$  chain, one  $\delta$  chain and one  $\epsilon$  chain.  $F_0$  consists of three subunits: a, b and c. The  $\epsilon$  chain of  $F_1$  contains 50 amino acids and is the smallest of the five ATPase  $F_1$  chains.

## CHROMOSOMAL LOCATION

Genetic locus: ATP50 (human) mapping to 21q22.11; Atp5o (mouse) mapping to 16 C4.

## SOURCE

OSCP (A-8) is a mouse monoclonal antibody raised against amino acids 71-210 mapping within an internal region of OSCP of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG $_1$  kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

OSCP (A-8) is available conjugated to agarose (sc-365162 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365162 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365162 PE), fluorescein (sc-365162 FITC), Alexa Fluor<sup>®</sup> 488 (sc-365162 AF488), Alexa Fluor<sup>®</sup> 546 (sc-365162 AF546), Alexa Fluor<sup>®</sup> 594 (sc-365162 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-365162 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-365162 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-365162 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

OSCP (A-8) is recommended for detection of OSCP of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

OSCP (A-8) is also recommended for detection of OSCP in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for OSCP siRNA (h): sc-62452, OSCP siRNA (m): sc-76010, OSCP shRNA Plasmid (h): sc-62452-SH, OSCP shRNA Plasmid (m): sc-76010-SH, OSCP shRNA (h) Lentiviral Particles: sc-62452-V and OSCP shRNA (m) Lentiviral Particles: sc-76010-V.

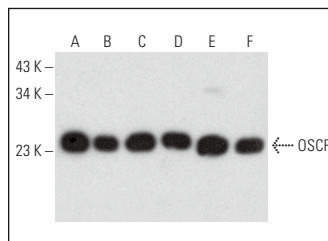
Molecular Weight of OSCP: 23 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, Sol8 cell lysate: sc-2249 or KNRK whole cell lysate: sc-2214.

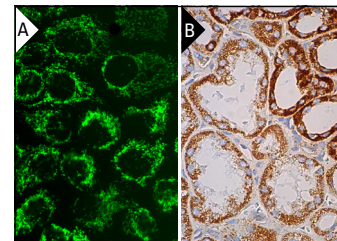
## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## DATA



OSCP (A-8): sc-365162. Western blot analysis of OSCP expression in Hep G2 (A), HISM (B), Sol8 (C), NIH/3T3 (D), L8 (E) and KNRK (F) whole cell lysates.



OSCP (A-8): sc-365162. Immunofluorescence staining of formalin-fixed A-431 cells showing mitochondrial localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules (B).

## SELECT PRODUCT CITATIONS

1. Beck, S.J., et al. 2016. Deregulation of mitochondrial F1FO-ATP synthase via OSCP in Alzheimer's disease. *Nat. Commun.* 7: 11483.
2. Beutner, G., et al. 2017. Cyclophilin D regulates the dynamic assembly of mitochondrial ATP synthase into synasomes. *Sci. Rep.* 7: 14488.
3. Guo, L., et al. 2018. Arginine 107 of yeast ATP synthase subunit  $\gamma$  mediates sensitivity of the mitochondrial permeability transition to phenylglyoxal. *J. Biol. Chem.* 293: 14632-14645.
4. Zhu, Y., et al. 2019. Lysine 68 acetylation directs MnSOD as a tetrameric detoxification complex versus a monomeric tumor promoter. *Nat. Commun.* 10: 2399.
5. Carraro, M., et al. 2020. The unique cysteine of F-ATP synthase OSCP subunit participates in modulation of the permeability transition pore. *Cell Rep.* 32: 108095.
6. Guo, Y., et al. 2020. Sustained oligomycin sensitivity conferring protein expression in cardiomyocytes protects against cardiac hypertrophy induced by pressure-overload via improving mitochondrial function. *Hum. Gene Ther.* 31: 1178-1189.
7. Liu, H., et al. 2022. Prohibitin 1 regulates mtDNA release and downstream inflammatory responses. *EMBO J.* 41: e111173.
8. Torres, A.K., et al. 2023. Mitochondrial bioenergetics, redox balance, and calcium homeostasis dysfunction with defective ultrastructure and quality control in the hippocampus of aged female C57BL/6J mice. *Int. J. Mol. Sci.* 24: 5476.

## RESEARCH USE

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

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