SANTA CRUZ BIOTECHNOLOGY, INC.

Myo-inositol oxygenase (E-11): sc-376080

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Myo-inositol oxygenase (MIOX), also known as ALDRL6, is a renal-specific member of the Aldo-keto reductase family. It catalyzes the first committed step in the Myo-inositol metabolism pathway and is widely distributed in mammalian tissues. Human Myo-inositol oxygenase shares 91% and 96% sequence homology with mouse and pig Myo-inositol oxygenase homologs, respectively. Myo-inositol oxygenase is responsible for the oxidative cleavage of Myo-inositol (MI) and its epimer D-chiro inositol (DCI) to D-glucuronate. The dioxygen-dependent cleavage of the C1-C6 bond in Myo-inositol is accomplished through the utilization of the Fe^{II}/Fe^{III} binuclear iron center of MIOX. Myo-inositol oxygenase has also been implicated in complications of diabetes, including diabetic nephropathy.

REFERENCES

1. Yang, Q., et al. 2000. Identification of a renal-specific oxido-reductase in newborn diabetic mice. Proc. Natl. Acad. Sci. USA 97: 9896-9901.
2. Arner, R.J., et al. 2001. Myo-Inositol oxygenase: molecular cloning and expression of a unique enzyme that oxidizes myo-inositol and D-chiro-inositol. Biochem. J. 360: 313-320.
3. Lorence, A., et al. 2004. Myo-inositol oxygenase offers a possible entry point into plant ascorbate biosynthesis. Plant Physiol. 134: 1200-1205.

CHROMOSOMAL LOCATION

Genetic locus: MIOX (human) mapping to 22q13.33; Miox (mouse) mapping to 15 E3.

SOURCE

Myo-inositol oxygenase (E-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-29 at the N-terminus of Myo-inositol oxygenase of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Myo-inositol oxygenase (E-11) is available conjugated to agarose (sc-376080 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376080 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376080 PE), fluorescein (sc-376080 FITC), Alexa Fluor® 488 (sc-376080 AF488), Alexa Fluor® 546 (sc-376080 AF546), Alexa Fluor® 594 (sc-376080 AF594) or Alexa Fluor® 647 (sc-376080 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376080 AF680) or Alexa Fluor® 790 (sc-376080 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376080 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

Myo-inositol oxygenase (E-11) is recommended for detection of Myo-inositol oxygenase of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (start-ing 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).

Suitable for use as control antibody for Myo-inositol oxygenase siRNA (h): sc-61117, Myo-inositol oxygenase siRNA (m): sc-61118, Myo-inositol oxygenase shRNA Plasmid (h): sc-61117-SH, Myo-inositol oxygenase shRNA Plasmid (m): sc-61118-SH, Myo-inositol oxygenase shRNA (h) Lentiviral Particles: sc-61117-V and Myo-inositol oxygenase shRNA (m) Lentiviral Particles: sc-61118-V.

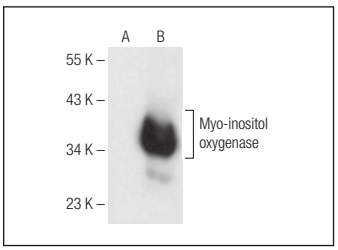
Molecular Weight of Myo-inositol oxygenase: 33 kDa.

Positive Controls: Myo-inositol oxygenase (h2): 293T Lysate: sc-117367, mouse kidney extract: sc-2255 or rat kidney extract: sc-2394.

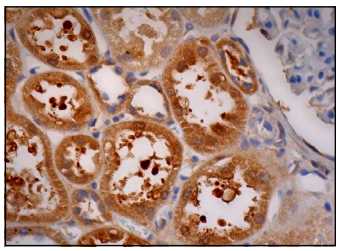
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Myo-inositol oxygenase (E-11): sc-376080. Western blot analysis of Myo-inositol oxygenase expression in non-transfected: sc-117752 (**A**) and human Myo-inositol oxygenase transfected: sc-117367 (**B**) 293T whole cell lysates.



Myo-inositol oxygenase (E-11): sc-376080. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic and nuclear staining of cells in tubules.

STORAGE

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