BACKGROUND

The superoxide dismutase family is composed of three metalloenzymes (SOD-1, SOD-2 and SOD-3) that catalyze the oxido-reduction of reactive oxygen species (ROS) such as superoxide anion. The SOD-2 precursor is a 222 amino acid protein that is encoded by nuclear chromatin, synthesized in the cytosol and imported post-translationally into the mitochondrial matrix. Unlike SOD-1, which is a homodimeric cytosolic Cu-Zn enzyme, SOD-2 is a homotetrameric manganese enzyme (also known as MnSOD) that functions in the mitochondrial. ROS are implicated in a wide range of degenerative processes, including Alzheimer's disease, Parkinson's disease and ischemic heart disease. Homozygous mutant mice, which lack SOD-2, exhibit dilated cardiomyopathy, accumulation of lipid in liver and skeletal muscle, metabolic acidosis, oxidative DNA damage and respiratory chain deficiencies in heart and skeletal muscle. Polymorphisms in the SOD-2 gene have also been implicated in non-familial, idiopathic, dilated cardiomyopathy in humans.

REFERENCES


CHROMOSOMATIC LOCATION

Genetic locus: SOD2 (human) mapping to 6q25.3.

SOURCE

SOD-2 (E-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 137-162 within an internal region of SOD-2 of human origin.

PRODUCT

Each vial contains 200 µg IgG kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-515020 P. (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

SOD-2 (E-7) is recommended for detection of SOD-2 of 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 (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).

Suitable for use as control antibody for SOD-2 siRNA (h): sc-41655, SOD-2 shRNA Plasmid (h): sc-41655-SH and SOD-2 shRNA (h) Lentiviral Particles: sc-41655-V.

Molecular Weight of SOD-2: 25 kDa.


RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:

1) Western Blotting: use m-IgG BP-HRP: sc-516102 or m-IgG BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048.
2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA

SOD-2 (E-7): sc-515068. Western blot analysis of SOD-2 expression in non-transfected: sc-110760 (A) and human SOD-2 transfected: sc-113078 (B) 293 whole cell lysates.

SOD-2 (E-7): sc-515068. Immunoperoxidase staining of formalin fixed, paraffin-embedded human appendix tissue showing cytoplasmic staining of glandular cells and lymphoid cells (A) and human pancreas tissue showing cytoplasmic staining of exocrine glandular cells (B).

RESEARCH USE

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

CONJUGATES

See SOD-2 (E-10): sc-137254 for SOD-2 antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647.