

# OPA1 (V-20): sc-30572

## BACKGROUND

OPA1 (optic atrophy 1 gene protein), belongs to the Dynamin family. The gene encoding OPA1 localizes to 3q29, is targeted to mitochondria and is involved in mitochondrial biogenesis. Defects in OPA1 are a cause of optic atrophy type 1. OPA1 is mostly expressed in retina but can also be expressed in brain, testis, heart and skeletal muscles.

## REFERENCES

- Jonasdottir, A., et al. 1999. Refinement of the dominant optic atrophy locus (OPA1) to a 1.4-cM interval on chromosome 3q28-3q29, within a 3-Mb YAC contig. *Hum. Genet.* 99: 115-120.
- Delettre, C., et al. 2000. Nuclear gene OPA1, encoding a mitochondrial Dynamin-related protein, is mutated in dominant optic atrophy. *Nat. Genet.* 26: 207-210.
- Toomes, C., et al. 2001. Spectrum, frequency and penetrance of OPA1 mutations in dominant optic atrophy. *Hum. Mol. Genet.* 10: 1369-1378.
- Delettre, C., et al. 2001. Mutation spectrum and splicing variants in the OPA1 gene. *Hum. Genet.* 109: 584-591.
- Satoh, M., et al. 2003. Differential sublocalization of the dynamin-related protein OPA1 isoforms in mitochondria. *Biochem. Biophys. Res. Commun.* 300: 482-493.
- Lee, Y.J., et al. 2004. Roles of the mammalian mitochondrial fission and fusion mediators Fis1, DRP1, and OPA1 in apoptosis. *Mol. Biol. Cell* 15: 5001-5011.
- Cipolat, S., et al. 2004. OPA1 requires mitofusin 1 to promote mitochondrial fusion. *Proc. Natl. Acad. Sci. USA* 101: 15927-15932.

## CHROMOSOMAL LOCATION

Genetic locus: OPA1 (human) mapping to 3q29; Opa1 (mouse) mapping to 16 B2.

## SOURCE

OPA1 (V-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of OPA1 of human origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-30572 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## RESEARCH USE

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

## APPLICATIONS

OPA1 (V-20) is recommended for detection of OPA1 of mouse and human origin by Western Blotting (starting dilution 1:200, 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).

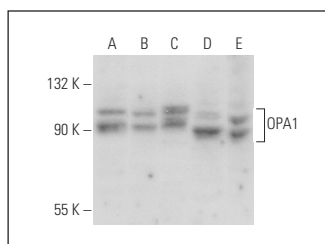
OPA1 (V-20) is also recommended for detection of OPA1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for OPA1 siRNA (h): sc-106808, OPA1 siRNA (m): sc-151306, OPA1 shRNA Plasmid (h): sc-106808-SH, OPA1 shRNA Plasmid (m): sc-151306-SH, OPA1 shRNA (h) Lentiviral Particles: sc-106808-V and OPA1 shRNA (m) Lentiviral Particles: sc-151306-V.

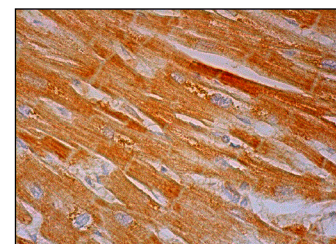
Molecular Weight of OPA1: 120 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, Y79 cell lysate: sc-2240 or Raji whole cell lysate: sc-364236.

## DATA



OPA1 (V-20): sc-30572. Western blot analysis of OPA1 expression in Raji (A), PC-12 (B), NIH/3T3 (C), Y79 (D) and NTERA-2 cl.D1 (E) whole cell lysates.



OPA1 (V-20): sc-30572. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes.

## SELECT PRODUCT CITATIONS

- Pavlov, P.F., et al. 2011. Mitochondrial  $\gamma$ -secretase participates in the metabolism of mitochondria-associated amyloid precursor protein. *FASEB J.* 25: 78-88.
- Kumari, S., et al. 2012. Hyperglycemia alters mitochondrial fission and fusion proteins in mice subjected to cerebral ischemia and reperfusion. *Transl. Stroke Res.* 3: 296-304.
- Kumari, S., et al. 2012. Glutamate induces mitochondrial dynamic imbalance and autophagy activation: preventive effects of selenium. *PLoS ONE* 7: e39382.



Try **OPA1 (D-9): sc-393296**, our highly recommended monoclonal alternative to OPA1 (V-20). Also, for AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647 conjugates, see **OPA1 (D-9): sc-393296**.