

# CHCHD4 (C-12): sc-365137

## BACKGROUND

CHCHD4 (coiled-coil-helix-coiled-coil-helix domain containing 4), also known as MIA40, is a 142 amino acid protein that contains one CHCH domain and localizes to the mitochondrial intermembrane space. Expressed in a variety of tissues with particularly high expression in kidney and liver, CHCHD4 exists as a homooligomer that is required for the folding of small cysteine-containing proteins. Specifically, CHCHD4 is thought to function via a disulfide relay system that oxidizes precursor proteins, thereby promoting their folding within mitochondria. CHCHD4 is expressed as multiple alternatively spliced isoforms that are encoded by a gene which maps to human chromosome 3. Chromosome 3 is made up of about 214 million bases encoding over 1,100 genes, including a chemokine receptor (CKR) gene cluster and a variety of human cancer-related gene loci.

## CHROMOSOMAL LOCATION

Genetic locus: CHCHD4 (human) mapping to 3p25.1; Chchd4 (mouse) mapping to 6 D1.

## SOURCE

CHCHD4 (C-12) is a mouse monoclonal antibody raised against amino acids 1-107 mapping at the N-terminus of CHCHD4 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CHCHD4 (C-12) is available conjugated to agarose (sc-365137 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365137 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365137 PE), fluorescein (sc-365137 FITC), Alexa Fluor® 488 (sc-365137 AF488), Alexa Fluor® 546 (sc-365137 AF546), Alexa Fluor® 594 (sc-365137 AF594) or Alexa Fluor® 647 (sc-365137 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365137 AF680) or Alexa Fluor® 790 (sc-365137 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

CHCHD4 (C-12) is recommended for detection of CHCHD4 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 (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 CHCHD4 siRNA (h): sc-78156, CHCHD4 siRNA (m): sc-142316, CHCHD4 shRNA Plasmid (h): sc-78156-SH, CHCHD4 shRNA Plasmid (m): sc-142316-SH, CHCHD4 shRNA (h) Lentiviral Particles: sc-78156-V and CHCHD4 shRNA (m) Lentiviral Particles: sc-142316-V.

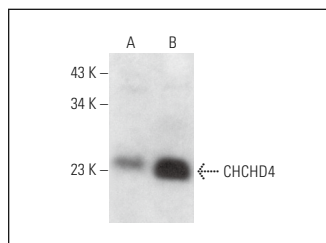
Molecular Weight of CHCHD4: 22 kDa.

Positive Controls: HEL 92.1.7 cell lysate: sc-2270, MDA-MB-468 cell lysate: sc-2282 or CHCHD4 (m): 293T Lysate: sc-119217.

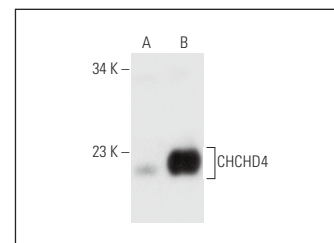
## RECOMMENDED SUPPORT REAGENTS

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.

## DATA



CHCHD4 (C-12): sc-365137. Western blot analysis of CHCHD4 expression in MDA-MB-468 (A) and HEL 92.1.7 (B) whole cell lysates.



CHCHD4 (C-12): sc-365137. Western blot analysis of CHCHD4 expression in non-transfected: sc-117752 (A) and mouse CHCHD4 transfected: sc-119217 (B) 293T whole cell lysates.

## SELECT PRODUCT CITATIONS

- Liu, Y., et al. 2019. Mitochondrial carrier protein overloading and misfolding induce aggresomes and proteostatic adaptations in the cytosol. *Mol. Biol. Cell* 30: 1272-1284.
- Li, T., et al. 2020. Overexpression of apoptosis inducing factor aggravates hypoxic-ischemic brain injury in neonatal mice. *Cell Death Dis.* 11: 77.
- Rodriguez, J., et al. 2020. Inhibiting the interaction between apoptosis inducing factor and cyclophilin A prevents brain injury in neonatal mice after hypoxia-ischemia. *Neuropharmacology* 171: 108088.
- Wang, T., et al. 2021. C9orf72 regulates energy homeostasis by stabilizing mitochondrial complex I assembly. *Cell Metab.* 33: 531-546.e9.
- Luo, Q., et al. 2021. OTUD1 activates caspase-independent and caspase-dependent apoptosis by promoting AIF nuclear translocation and MCL1 degradation. *Adv. Sci.* 8: 2002874.
- Kee, T.R., et al. 2022. Pathological characterization of a novel mouse model expressing the PD-linked CHCHD2-T611 mutation. *Hum. Mol. Genet.* 31: 3987-4005.

## 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.