SANTA CRUZ BIOTECHNOLOGY, INC.

CRP3 (A-5): sc-166930

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Cysteine and glycine-rich protein 3 (CRP3), also known as cysteine-rich protein 3, CLP (cardiac LIM protein), MLP (muscle LIM protein), LMO4 or CMD1M, is an essential nuclear regulator of myogenic differentiation. CRP3 contains two LIM zinc-binding domains linked to short glycine-rich repeats and a potential nuclear localization signal. CRP3 is present in differentiated heart during early development and in a subset of other striated muscles during later stages. Defects in the gene encoding CRP3 (CSRP3) can cause dilated cardiomyopathy 1M (CMD1M), a disease characterized by reduced systolic functionand cardiac dilation. Human CSRP3 maps to the gene locus 11p15.1.

CHROMOSOMAL LOCATION

Genetic locus: CSRP3 (human) mapping to 11p15.1; Csrp3 (mouse) mapping to 7 B4.

SOURCE

CRP3 (A-5) is a mouse monoclonal antibody raised against amino acids 77-122 mapping within an internal region of CRP3 of human origin.

PRODUCT

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

CRP3 (A-5) is available conjugated to agarose (sc-166930 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166930 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166930 PE), fluorescein (sc-166930 FITC), Alexa Fluor® 488 (sc-166930 AF488), Alexa Fluor® 546 (sc-166930 AF546), Alexa Fluor® 594 (sc-166930 AF594) or Alexa Fluor® 647 (sc-166930 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166930 AF680) or Alexa Fluor® 790 (sc-166930 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

CRP3 (A-5) is recommended for detection of CRP3 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), 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 CRP3 siRNA (h): sc-106928, CRP3 siRNA (m): sc-45933, CRP3 shRNA Plasmid (h): sc-106928-SH, CRP3 shRNA Plasmid (m): sc-45933-SH, CRP3 shRNA (h) Lentiviral Particles: sc-106928-V and CRP3 shRNA (m) Lentiviral Particles: sc-45933-V.

Molecular Weight of CRP3: 24 kDa.

Positive Controls: human heart extract: sc-363763, mouse heart extract: sc-2254 or rat heart extract: sc-2393.

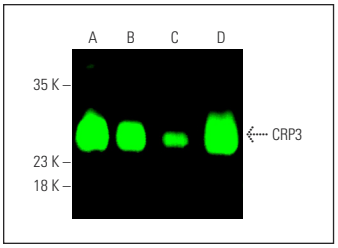
STORAGE

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

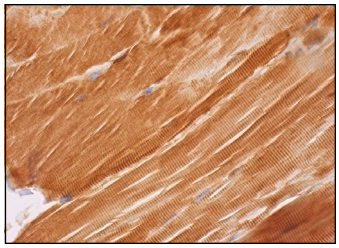
RESEARCH USE

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

DATA



CRP3 (A-5): sc-166930. Near-infrared western blot analysis of CRP3 expression in mouse heart (**A**), rat heart (**B**), human skeletal muscle (**C**) and human heart (**D**) tissue extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



CRP3 (A-5): sc-166930. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of myocytes.

SELECT PRODUCT CITATIONS

1. Hoffmann, C., et al. 2014. Human muscle LIM protein dimerizes along the Actin cytoskeleton and cross-links Actin filaments. Mol. Cell. Biol. 34: 3053-3065.
2. Hoffmann, C., et al. 2016. CRP2, a new invadopodia Actin bundling factor critically promotes breast cancer cell invasion and metastasis. Oncotarget 7: 13688-13705.
3. Mathiesen, S.B., et al. 2019. The cardiac Syndecan-4 interactome reveals a role for Syndecan-4 in nuclear translocation of muscle LIM protein (MLP). J. Biol. Chem. 294: 8717-8731.
4. Sun, L., et al. 2020. CRISPR/Cas9 mediated establishment of a human CSRP3 compound heterozygous knockout hESC line to model cardiomyopathy and heart failure. Stem Cell Res. 49: 102077.
5. Langer, H.T., et al. 2021. A mutation in desmin makes skeletal muscle less vulnerable to acute muscle damage after eccentric loading in rats. FASEB J. 35: e21860.
6. Langer, H.T., et al. 2022. Myofibrillar protein synthesis rates are increased in chronically exercised skeletal muscle despite decreased anabolic signaling. Sci. Rep. 12: 7553.
7. Langer, H.T., et al. 2022. Dominant-negative p53-overexpression in skeletal muscle induces cell death and fiber atrophy in rats. Cell Death Dis. 13: 716.
8. Stole, T.P., et al. 2022. The female syndecan-$4^{-/-}$ heart has smaller cardiomyocytes, augmented Insulin/pSer473-Akt/pSer9-GSK-3β signaling, and lowered SCOP, pThr308-Akt/Akt and GLUT4 levels. Front. Cell Dev. Biol. 10: 908126.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.