SANTA CRUZ BIOTECHNOLOGY, INC.

Cyclophilin F (G-9): sc-376061

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Cyclophilins are conserved, ubiquitous and abundant cytosolic peptidyl-prolyl *cis-trans* isomerases that accelerate the isomerization of XaaPro peptide bonds and the refolding of proteins. Human cyclophilin A (CyPA), an intracellular protein of 165 amino acids, is the target of cyclosporin A (CsA) and is encoded by a single unique gene conserved between yeast to humans. Cyclophilin B (CyPB) is secreted in biological fluids such as blood or milk, and binds to a specific receptor present on human peripheral blood lymphocytes and expressed in Jurkat cells, a line of human lymphoblasts. Cyclophilin D (CyP40) is a widely expressed cytoplasmic protein that catalyzes the *cis-trans* isomerization of proline imidic peptide bonds in oligopeptides. Cyclophilin F (CyP3), is also known as PPIF, Cyp-D or Rotamase F, is a 207 amino acid mitochondrial matrix protein involved in the induction of necrotic and apoptotic cell death through the activation of the mitochondrial permeability transition (mPT) pore.

REFERENCES

1. Bowles, K.R., et al. 1999. Genomic characterization of the human peptidyl-prolyl-*cis-trans*-isomerase, mitochondrial precursor gene: assessment of its role in familial dilated cardiomyopathy. Hum. Genet. 105: 582-586.
2. Basso, E., et al. 2005. Properties of the permeability transition pore in mitochondria devoid of Cyclophilin D. J. Biol. Chem. 280: 18558-18561.

CHROMOSOMAL LOCATION

Genetic locus: PPIF (human) mapping to 10q22.3; Ppif (mouse) mapping to 14 A3.

SOURCE

Cyclophilin F (G-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 175-205 near the C-terminus of Cyclophilin F of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Cyclophilin F (G-9) is available conjugated to agarose (sc-376061 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376061 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376061 PE), fluorescein (sc-376061 FITC), Alexa Fluor® 488 (sc-376061 AF488), Alexa Fluor® 546 (sc-376061 AF546), Alexa Fluor® 594 (sc-376061 AF594) or Alexa Fluor® 647 (sc-376061 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376061 AF680) or Alexa Fluor® 790 (sc-376061 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376061 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

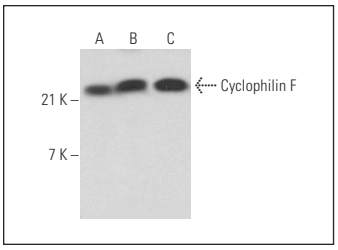
Cyclophilin F (G-9) is recommended for detection of Cyclophilin F of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, 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 Cyclophilin F siRNA (h): sc-77071, Cyclophilin F siRNA (m): sc-77072, Cyclophilin F shRNA Plasmid (h): sc-77071-SH, Cyclophilin F shRNA Plasmid (m): sc-77072-SH, Cyclophilin F shRNA (h) Lentiviral Particles: sc-77071-V and Cyclophilin F shRNA (m) Lentiviral Particles: sc-77072-V.

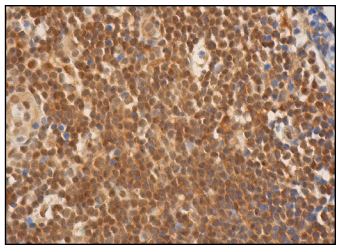
Molecular Weight of Cyclophilin F: 18 kDa.

Positive Controls: Ramos cell lysate: sc-2216, HeLa whole cell lysate: sc-2200 or Caco-2 cell lysate: sc-2262.

DATA



Cyclophilin F (G-9): sc-376061. Western blot analysis of Cyclophilin F expression in Ramos (**A**), HeLa (**B**) and Caco-2 (**C**) whole cell lysates.



Cyclophilin F (G-9): sc-376061. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing cytoplasmic and nuclear staining of cells in germinal and non-germinal centers.

SELECT PRODUCT CITATIONS

1. Radhakrishnan, J., et al. 2015. Cyclophilin-D: a resident regulator of mitochondrial gene expression. FASEB J. 29: 2734-2748.
2. Zhang, R., et al. 2018. Hirsutine induces mPTP-dependent apoptosis through ROCK1/PTEN/PI3K/GSK3β pathway in human lung cancer cells. Cell Death Dis. 9: 598.
3. Wu, P.K., et al. 2020. Mortalin/HSPA9 targeting selectively induces KRAS tumor cell death by perturbing mitochondrial membrane permeability. Oncogene 39: 4257-4270.
4. Wang, L.Q., et al. 2021. Perfluoroalkyl substance pollutants activate the innate immune system through the AIM2 inflammasome. Nat. Commun. 12: 2915.
5. Souza-Neto, F.V., et al. 2022. Mitochondrial oxidative stress promotes cardiac remodeling in myocardial infarction through the activation of endoplasmic reticulum stress. Antioxidants 11: 1232.

RESEARCH USE

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