

CyPA (C-14)-R: sc-20360-R

BACKGROUND

The immunosuppressant cyclosporin A (CsA) forms a trimolecular complex with cyclophilin and calcineurins to inhibit calcineurin phosphatase activity. 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 the CsA and is encoded by a single unique gene conserved from yeast to humans. CyPA is known for its involvement in T cell differentiation and proliferation and is highly expressed in brain. CyPA is incorporated into the virion of the type 1 human immunodeficiency virus (HIV-1) via a direct interaction with the capsid domain of the viral Gag polyprotein and is crucial for efficient viral replication. Cyclophilin B (CyPB) is a member of the cyclophilin family with specific N- and C-terminal extensions. Unlike CyPA, CyPB has a signal sequence leading to its translocation in the endoplasmic reticulum. CyPB is secreted in biological fluids such as blood or milk and binds to a specific receptor present on the human lymphoblastic cell line Jurkat and on human peripheral blood lymphocytes.

REFERENCES

- Hasel, K.W., Glass, J.R., Godbout, M. and Sutcliffe, J.G. 1991. An endoplasmic reticulum-specific cyclophilin. *Mol. Cell. Biol.* 11: 3484-3491.
- Arber, S., Krause, K.H. and Caroni, P. 1992. s-cyclophilin is retained intracellularly via a unique COOH-terminal sequence and colocalizes with the calcium storage protein calreticulin. *J. Cell Biol.* 116: 113-125.
- Pflugl, G., Kallen, J., Schirmer, T., Jansonius, J.N., Zurini, M.G. and Walkinshaw, M.D. 1993. X-ray structure of a decameric cyclophilin-cyclosporin crystal complex. *Nature* 361: 91-94.
- Le Hir, M., Su, Q., Weber, L., Woerly, G., Granelli-Piperno, A. and Ryffel, B. 1995. *In situ* detection of cyclosporin A: evidence for nuclear localization of cyclosporine and cyclophilins. *Lab. Invest.* 73: 727-733.

CHROMOSOMAL LOCATION

Genetic locus: PPIA (human) mapping to 7p13; Ppia (mouse) mapping to 11 A1.

SOURCE

CyPA (C-14)-R is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the C-terminus of CyPA 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-20360 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.

APPLICATIONS

CyPA (C-14)-R is recommended for detection of CyPA 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); may cross-react with PPIAL4.

CyPA (C-14)-R is also recommended for detection of CyPA in additional species, including equine and bovine.

Suitable for use as control antibody for CyPA siRNA (h): sc-105263, CyPA siRNA (m): sc-142741, CyPA shRNA Plasmid (h): sc-105263-SH, CyPA shRNA Plasmid (m): sc-142741-SH, CyPA shRNA (h) Lentiviral Particles: sc-105263-V and CyPA shRNA (m) Lentiviral Particles: sc-142741-V.

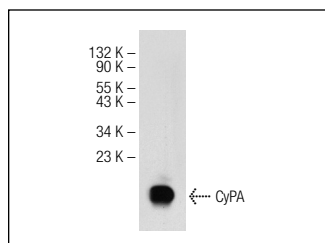
Molecular Weight of CyPA: 18 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, HeLa whole cell lysate: sc-2200 or K-562 whole cell lysate: sc-2203.

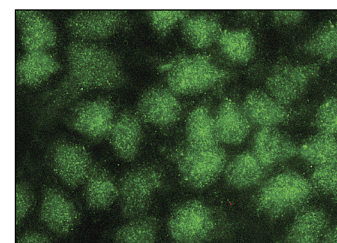
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), 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). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



CyPA (C-14)-R: sc-20360-R. Western blot analysis of CyPA expression in NIH/3T3 whole cell lysate.



CyPA (C-14)-R: sc-20360-R. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

RESEARCH USE

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



Try **CyPA (6-YD13): sc-134310**, our highly recommended monoclonal alternative to CyPA (C-14).