SANTA CRUZ BIOTECHNOLOGY, INC.

CyP (FL-208): sc-30043

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

1. Hasel, K.W., et al. 1991. An endoplasmic reticulum-specific cyclophilin. Mol. Cell. Biol. 11: 3484-3491.
2. Arber, S., et al. 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.
3. Pflugl, G., et al. 1993. X-ray structure of a decameric cyclophilin-cyclosporin crystal complex. Nature 361: 91-94.
4. Le Hir, M., et al. 1995. *In suit* detection of cyclosporin A: evidence for nuclear localization of cyclosporine and cyclophilins. Lab. Invest. 73: 727-733.
5. Mariller, C., et al. 1996. Involvement of the N-terminal part of cyclophilin B in the interaction with specific Jurkat T-cell binding sites. Biochem. J. 317: 571-576.
6. Vajdos, F.F., et al. 1997. Crystal structure of cyclophilin A complexed with a binding site peptide from the HIV-1 capsid protein. Protein Sci. 6: 2297-2307.
7. Endrich, M.M., et al. 1999. Maturation-induced conformational changes of HIV-1 capsid protein and identification of two highly affinity sites for cyclophilins in the C-terminal domain. J. Biol. Chem. 274: 5326-5332.
8. Wang, P., et al. 2001. Two cyclophilin A homologs with shared and distinct functions important for growth and virulence of *Cryptococcus neoformans*. EMBO Rep. 2: 511-518.
9. Nahreini, P., et al. 2001. Effects of altered cyclophilin A expression on growth and differentiation of human and mouse neuronal cells. Cell Mol. Neurobiol. 21: 65-79.

CHROMOSOMAL LOCATION

Genetic locus: PPIB (human) mapping to 15q22.31; Ppib (mouse) mapping to 9 C.

SOURCE

CyP (FL-208) is a rabbit polyclonal antibody raised against amino acids 1-208 representing full length CyPB 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.

APPLICATIONS

CyP (FL-208) is recommended for detection of Cyclophilin B, C, and to a lesser extent, A, D, E and F of mouse, rat 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).

CyP (FL-208) is also recommended for detection of Cyclophilin B, C, and to a lesser extent, A, D, E and F in additional species, including equine, canine, bovine and porcine.

Molecular Weight of CyP: 22 kDa.

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.

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.

PROTOCOLS

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