

CyPB (k2E2): sc-130626

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 cyclosporin A 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., et al. 1991. An endoplasmic reticulum-specific cyclophilin. *Mol. Cell. Biol.* 11: 3484-3491.
- 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.
- Pflugl, G., et al. 1993. X-ray structure of a decameric cyclophilin-cyclosporin crystal complex. *Nature* 361: 91-94.
- Le Hir, M., et al. 1995. *In situ* detection of cyclosporin A: evidence for nuclear localization of cyclosporine and cyclophilins. *Lab. Invest.* 73: 727-733.
- 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.
- Mariller, C., et al. 1996. Evidence that human milk isolated cyclophilin B corresponds to a truncated form. *Biochim. Biophys. Acta* 1293: 31-38.
- 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.

CHROMOSOMAL LOCATION

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

SOURCE

CyPB (k2E2) is a mouse monoclonal antibody raised against amino acids 26-216 of recombinant CyPB of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 50 µg IgG₁ in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin and 1% glycerol.

APPLICATIONS

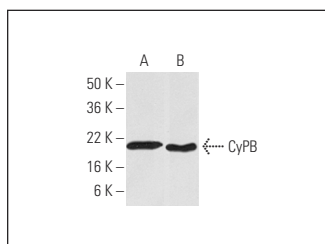
CyPB (k2E2) is recommended for detection of CyPB of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for CyPB siRNA (h): sc-35145, CyPB siRNA (m): sc-35146, CyPB shRNA Plasmid (h): sc-35145-SH, CyPB shRNA Plasmid (m): sc-35146-SH, CyPB shRNA (h) Lentiviral Particles: sc-35145-V and CyPB shRNA (m) Lentiviral Particles: sc-35146-V.

Molecular Weight of CyPB: 24 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or Hep G2 cell lysate: sc-2227.

DATA



CyPB (k2E2): sc-130626. Western blot analysis of CyPB expression in Hep G2 (A) and HeLa (B) whole cell lysates.

SELECT PRODUCT CITATIONS

- DeBoer, J., et al. 2016. Cyclophilin B enhances HIV-1 infection. *Virology* 489: 282-291.
- Petrillo, C., et al. 2018. Cyclosporine H overcomes innate immune restrictions to improve lentiviral transduction and gene editing in human hematopoietic stem cells. *Cell Stem Cell* 23: 820-832.
- Davis-Knowlton, J., et al. 2019. Characterization of smooth muscle cells from human atherosclerotic lesions and their responses to Notch signaling. *Lab. Invest.* 99: 290-304.
- Rauch, S., et al. 2019. Programmable RNA-guided RNA effector proteins built from human parts. *Cell* 178: 122-134.
- Satchwell, T.J., et al. 2019. Genetic manipulation of cell line derived reticulocytes enables dissection of host malaria invasion requirements. *Nat. Commun.* 10: 3806.

STORAGE

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