SANTA CRUZ BIOTECHNOLOGY, INC.

FKBP51 (D-4): sc-271547

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The immunophilins are a highly conserved family of *cis-trans* peptidyl-prolyl isomerases that bind to and mediate the effects of immunosuppressive drugs, such as cyclosporin, FK506 and rapamycin. Several related immunophilins, FKBP12, FKBP51 and FKBP52, are characterized as cytosolic FK506-binding proteins, and following ligand binding, they functionally inhibit the phosphatase activity of calcineurin. The ubiquitously expressed FKBP12 also associates with the cytoplasmic domain of the TGFβ-type I receptor, where it stabilizes the inactive conformation of the receptor and blocks the activation of the TGFβ pathway. FKBP51 and FKBP52 are two highly related proteins. FKBP51 is predominantly expressed in T cells and is induced by glucocorticoids. FKBP51 mediates the effects of FK506 and rapamycin by inhibiting intracellular calcineurin activity, and by blocking T cell activation and proliferation. FKBP52, known also as FKBP-59 or heat shock protein 56, is expressed in a variety of tissues and can also associate with the heat shock protein (hsp90) in mature steroid receptor complexes.

CHROMOSOMAL LOCATION

Genetic locus: FKBP5 (human) mapping to 6p21.31; Fkbp5 (mouse) mapping to 17 A3.3.

SOURCE

FKBP51 (D-4) is a mouse monoclonal antibody raised against amino acids 358-457 of FKBP51 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.

FKBP51 (D-4) is available conjugated to agarose (sc-271547 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271547 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271547 PE), fluorescein (sc-271547 FITC), Alexa Fluor® 488 (sc-271547 AF488), Alexa Fluor® 546 (sc-271547 AF546), Alexa Fluor® 594 (sc-271547 AF594) or Alexa Fluor® 647 (sc-271547 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271547 AF680) or Alexa Fluor® 790 (sc-271547 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

FKBP51 (D-4) is recommended for detection of FKBP51 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).

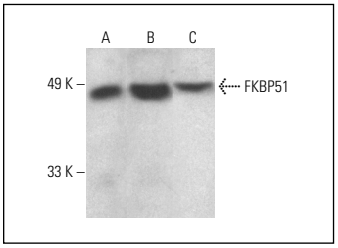
Suitable for use as control antibody for FKBP51 siRNA (h): sc-35380, FKBP51 siRNA (m): sc-35381, FKBP51 shRNA Plasmid (h): sc-35380-SH, FKBP51 shRNA Plasmid (m): sc-35381-SH, FKBP51 shRNA (h) Lentiviral Particles: sc-35380-V and FKBP51 shRNA (m) Lentiviral Particles: sc-35381-V.

Molecular Weight of FKBP51: 51 kDa.

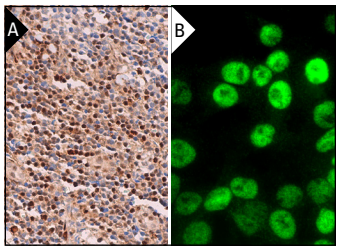
STORAGE

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

DATA



FKBP51 (D-4) HRP: sc-271547 HRP. Direct western blot analysis of FKBP51 expression in HeLa (**A**), MOLT-4 (**B**) and BYDP (**C**) whole cell lysates.



FKBP51 (D-4): sc-271547. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing nuclear and cytoplasmic staining of cells in non-germinal center (**A**). Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization (**B**).

SELECT PRODUCT CITATIONS

1. Takaoka, M., et al. 2017. FKBP51 regulates cell motility and invasion via RhoA signaling. Cancer Sci. 108: 380-389.
2. Bernadotte, A., et al. 2018. In silico identification and biochemical characterization of the human dicarboxylate clamp TPR protein interaction network. FEBS Open Bio 8: 1830-1843.
3. Agarwal, S., et al. 2019. PI3K inhibitors protect against glucocorticoid-induced skin atrophy. EBioMedicine 41: 526-537.
4. Bainbridge, A., et al. 2020. IKBKE activity enhances AR levels in advanced prostate cancer via modulation of the Hippo pathway. Nucleic Acids Res. 48: 5366-5382.
5. Yang, D., et al. 2021. Targeting of FK506 binding protein 5 by miR-203 affects the progression of breast cancer via regulating the fatty acid degradation pathway and potential drug-repurposing. Oncol. Lett. 21: 346.
6. Sun, H., et al. 2022. Dexamethasone sensitizes acute monocytic leukemia cells to Ara-C by upregulating FKBP51. Front. Oncol. 12: 888695.
7. Zhang, S., et al. 2023. Design, synthesis, and biological evaluation of androgen receptor (AR) antagonist-heat shock protein 90 (Hsp90) inhibitor conjugates for targeted therapy of castration-resistant prostate cancer. J. Med. Chem. 66: 4784-4801.
8. Wedel, S., et al. 2023. SAFit2 ameliorates paclitaxel-induced neuropathic pain by reducing spinal gliosis and elevating pro-resolving lipid mediators. J. Neuroinflammation 20: 149.
9. Berlanga-Acosta, J., et al. 2024. Carcinogenic effect of human tumor-derived cell-free filtrates in nude mice. Front. Mol. Biosci. 11: 1361377.

RESEARCH USE

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

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