SANTA CRUZ BIOTECHNOLOGY, INC.

STEAP (B-4): sc-271872

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Six-transmembrane epithelial antigen of the prostate (STEAP) is structurally similar to a channel or transport protein. STEAP protein contains six potential membrane-spanning regions with hydrophilic amino- and carboxyl-terminal domains. STEAP protein is present in human prostate tissue with elevated levels in cancer cell lines, including prostate, bladder, colon, ovarian and Ewing sarcoma. Cell-cell junctions of the secretory epithelium show concentrated levels of STEAP protein. Mouse STEAP is 80% homologous to human STEAP at both the nucleotide and amino acid levels. The human STEAP gene maps to chromosome 7q21.13 and encodes a 339 amino acid protein.

CHROMOSOMAL LOCATION

Genetic locus: STEAP1 (human) mapping to 7q21.13.

SOURCE

STEAP (B-4) is a mouse monoclonal antibody raised against amino acids 1-105 of STEAP 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.

STEAP (B-4) is available conjugated to agarose (sc-271872 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271872 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271872 PE), fluorescein (sc-271872 FITC), Alexa Fluor® 488 (sc-271872 AF488), Alexa Fluor® 546 (sc-271872 AF546), Alexa Fluor® 594 (sc-271872 AF594) or Alexa Fluor® 647 (sc-271872 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271872 AF680) or Alexa Fluor® 790 (sc-271872 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

STEAP (B-4) is recommended for detection of STEAP of 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for STEAP siRNA (h): sc-36571, STEAP shRNA Plasmid (h): sc-36571-SH and STEAP shRNA (h) Lentiviral Particles: sc-36571-V.

Molecular Weight of STEAP: 36 kDa.

Positive Controls: LNCaP cell lysate: sc-2231 or A-431 whole cell lysate: sc-2201.

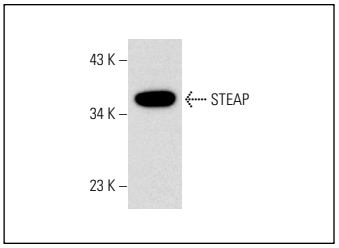
STORAGE

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

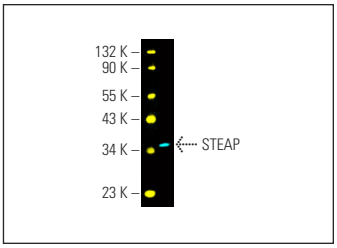
RESEARCH USE

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

DATA



STEAP (B-4): sc-271872. Western blot analysis of STEAP expression in LNCaP whole cell lysate.



STEAP (B-4) Alexa Fluor® 647: sc-271872 AF647. Direct fluorescent western blot analysis of STEAP expression in LNCaP whole cell lysate. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker™ MW Tag-Alexa Fluor® 488: sc-516790.

SELECT PRODUCT CITATIONS

1. Doran, M.G., et al. 2014. Annotating STEAP1 regulation in prostate cancer with 89Zr immuno-PET. J. Nucl. Med. 55: 2045-2049.
2. Fustaino, V., et al. 2017. Characterization of epithelial-mesenchymal transition intermediate/hybrid phenotypes associated to resistance to EGFR inhibitors in non-small cell lung cancer cell lines. Oncotarget 8: 103340-103363.
3. Zhang, Z., et al. 2020. Loss of CHD1 promotes heterogeneous mechanisms of resistance to AR-targeted therapy via chromatin dysregulation. Cancer Cell 37: 584-598.e11.
4. Zhang, Z., et al. 2020. A research of STEAP1 regulated gastric cancer cell proliferation, migration and invasion *in vitro* and *in vivos*. J. Cell. Mol. Med. 24: 14217-14230.
5. Barroca-Ferreira, J., et al. 2021. Enhanced stability of detergent-free human native STEAP1 protein from neoplastic prostate cancer cells upon an innovative isolation procedure. Int. J. Mol. Sci. 22: 10012.
6. Barroca-Ferreira, J., et al. 2022. A chromatographic network for the purification of detergent-solubilized six-transmembrane epithelial antigen of the prostate 1 from *Komagataella pastoris* mini-bioreactor lysates. J. Chromatogr. A 1685: 463576.
7. Batista-Silva, J., et al. 2023. Specific six-transmembrane epithelial antigen of the prostate 1 capture with gellan gum microspheres: design, optimization and integration. Int. J. Mol. Sci. 24: 1949.
8. Bhatia, V., et al. 2023. Targeting advanced prostate cancer with STEAP1 chimeric antigen receptor T cell and tumor-localized IL-12 immunotherapy. Nat. Commun. 14: 2041.

PROTOCOLS

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