SANTA CRUZ BIOTECHNOLOGY, INC.

PUMAα (B-6): sc-377015

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

PUMA (Bcl-2 binding component 3, JFY1, PUMA/JFY1) is a mitochondrial pro-apoptotic Bcl-2 homology domain (BH3)-only protein that induces rapid apoptosis through a Bax- and mitochondria-dependent pathway. The PUMA gene encodes four proteins originating from different splice variants of the same transcript: PUMAα, β, γ and δ. Both PUMAα and PUMAβ contain a BH3 domain, while PUMAγ and PUMAδ lack this domain. The BH3 domain is essential for binding of PUMAα and PUMAβ to Bcl-2 or Bcl-x_L. PUMA is an initiator of γ-radiation apoptosis and glucocorticoid-induced apoptosis in lymphoid cells *in vivo*. Bcl-2 family members generally regulate apoptosis and transmit death signals to mitochondria. Members of this family include both pro- and anti-apoptotic proteins that share homologous sequences known as Bcl-2 homology domains (BH1-4). The BH3 proteins, BID, NOXA, PUMA, NBK, Bim and Bad, are all pro-apoptotic and share sequence homology within the amphipathic α-helical BH3 region.

REFERENCES

1. Yu, J., et al. 2001. PUMA induces the rapid apoptosis of colorectal cancer cells. Mol. Cell 7: 673-682.
2. Nakano, K., et al. 2001. PUMA, a novel proapoptotic gene, is induced by p53. Mol. Cell 7: 683-694.

CHROMOSOMAL LOCATION

Genetic locus: BBC3 (human) mapping to 19q13.32; Bbc3 (mouse) mapping to 7 A2.

SOURCE

PUMAα (B-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-29 at the N-terminus of PUMAα 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.

PUMAα (B-6) is available conjugated to agarose (sc-377015 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-377015 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377015 PE), fluorescein (sc-377015 FITC), Alexa Fluor® 488 (sc-377015 AF488), Alexa Fluor® 546 (sc-377015 AF546), Alexa Fluor® 594 (sc-377015 AF594) or Alexa Fluor® 647 (sc-377015 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377015 AF680) or Alexa Fluor® 790 (sc-377015 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-377015 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

PUMAα (B-6) is recommended for detection of PUMAα 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).

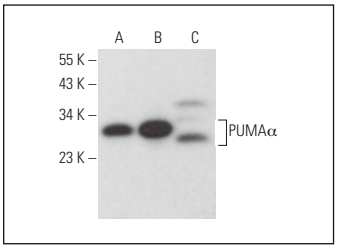
PUMAα (B-6) is also recommended for detection of PUMAα in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for PUMA siRNA (h): sc-37153, PUMA siRNA (m): sc-37154, PUMA siRNA (r): sc-270040, PUMA shRNA Plasmid (h): sc-37153-SH, PUMA shRNA Plasmid (m): sc-37154-SH, PUMA shRNA Plasmid (r): sc-270040-SH, PUMA shRNA (h) Lentiviral Particles: sc-37153-V, PUMA shRNA (m) Lentiviral Particles: sc-37154-V and PUMA shRNA (r) Lentiviral Particles: sc-270040-V.

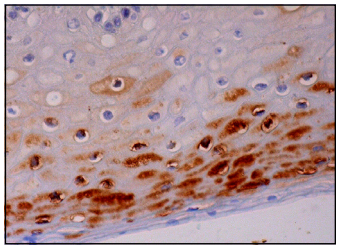
Molecular Weight of PUMAα: 18-24 kDa.

Positive Controls: M1 whole cell lysate: sc-364782, SUP-T1 whole cell lysate: sc-364796 or RAW 264.7 whole cell lysate: sc-2211.

DATA



PUMAα (B-6): sc-377015. Western blot analysis of PUMAα expression in SUP-T1 (**A**), RAW 264.7 (**B**) and M1 (**C**) whole cell lysates.



PUMAα (B-6): sc-377015. Immunoperoxidase staining of formalin fixed, paraffin-embedded human uterine cervix tissue showing cytoplasmic staining of squamous epithelial cells.

SELECT PRODUCT CITATIONS

1. Eroglu, B., et al. 2014. Therapeutic inducers of the HSP70/HSP110 protect mice against traumatic brain injury. J. Neurochem. 130: 626-641.
2. Du, K., et al. 2018. MicroRNA485-3p negatively regulates the transcriptional co-repressor CtBP1 to control the oncogenic process in osteosarcoma cells. Int. J. Biol. Sci. 14: 1445-1456.
3. Zhang, Z., et al. 2019. MicroRNA-296 inhibits colorectal cancer cell growth and enhances apoptosis by targeting ARRB1-mediated Akt activation. Oncol. Rep. 41: 619-629.
4. Zhang, L., et al. 2020. Upregulation of deubiquitinase PSMD14 in lung adenocarcinoma (LUAD) and its prognostic significance. J. Cancer 11: 2962-2971.

RESEARCH USE

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