SANTA CRUZ BIOTECHNOLOGY, INC.

PUMAα/β (G-3): sc-374223

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.

CHROMOSOMAL LOCATION

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

SOURCE

PUMAα/β (G-3) is a mouse monoclonal antibody raised against amino acids 57-193 mapping at the C-terminus of PUMAα of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PUMAα/β (G-3) is available conjugated to agarose (sc-374223 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-374223 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374223 PE), fluorescein (sc-374223 FITC), Alexa Fluor® 488 (sc-374223 AF488), Alexa Fluor® 546 (sc-374223 AF546), Alexa Fluor® 594 (sc-374223 AF594) or Alexa Fluor® 647 (sc-374223 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374223 AF680) or Alexa Fluor® 790 (sc-374223 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

PUMAα/β (G-3) is recommended for detection of PUMAα and PUMAβ 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

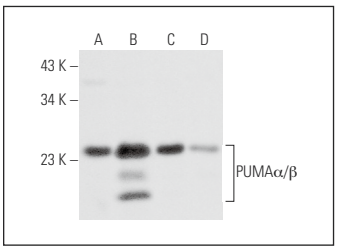
Suitable for use as control antibody for PUMA siRNA (h): sc-37153, PUMA siRNA (m): sc-37154, PUMA siRNA (r): sc-270040, PUMA shRNA Plasmid (h): sc-37153-SH, PUMA shRNA Plasmid (m): sc-37154-SH, PUMA shRNA Plasmid (r): sc-270040-SH, PUMA shRNA (h) Lentiviral Particles: sc-37153-V, PUMA shRNA (m) Lentiviral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

Molecular Weight of PUMAα/β: 18-24 kDa.

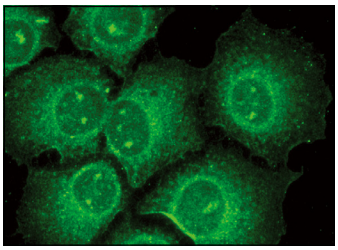
STORAGE

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

DATA



PUMAα/β (G-3): sc-374223. Western blot analysis of PUMAα/β expression in A549 (**A**), Hep G2 (**B**), HeLa (**C**) and K-562 (**D**) whole cell lysates.



PUMAα/β (G-3): sc-374223. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Sistrunk, C., et al. 2013. Skp2 deficiency inhibits chemical skin tumorigenesis independent of p27 Kip1 accumulation. Am. J. Pathol. 182: 1854-1864.
2. Wang, S., et al. 2014. SAR405838: an optimized inhibitor of MDM2-p53 interaction that induces complete and durable tumor regression. Cancer Res. 74: 5855-5865.
3. Wang, W., et al. 2015. p53/PUMA expression in human pulmonary fibroblasts mediates cell activation and migration in silicosis. Sci. Rep. 5: 16900.
4. Knorr, K.L., et al. 2015. MLN4924 induces Noxa upregulation in acute myelogenous leukemia and synergizes with Bcl-2 inhibitors. Cell Death Differ. 22: 2133-2142.
5. Hossini, A.M., et al. 2016. PI3K/Akt signaling pathway is essential for survival of induced pluripotent stem cells. PLoS ONE 11: e0154770.
6. Lu, J., et al. 2016. Reactivation of p53 by MDM2 inhibitor MI-77301 for the treatment of endocrine-resistant breast cancer. Mol. Cancer Ther. 15: 2887-2893.
7. Knorr, K.L., et al. 2017. Assessment of drug sensitivity in hematopoietic stem and progenitor cells from acute myelogenous leukemia and myelodysplastic syndrome *ex vivo*. Stem Cells Transl. Med. 6: 840-850.
8. Liu, R., et al. 2017. A new perspective for osteosarcoma therapy: proteasome inhibition by MLN9708/2238 successfully induces apoptosis and cell cycle arrest and attenuates the invasion ability of osteosarcoma cells *in vitro*. Cell. Physiol. Biochem. 41: 451-465.

RESEARCH USE

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