SANTA CRUZ BIOTECHNOLOGY, INC.

PIG3 (A-5): sc-166664

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The PIG (p53-induced gene) gene family encodes redox-controlling proteins that are involved in p53 tumor suppressor activity. One member of the PIG gene family, p53-inducible gene 3 (PIG3), is a p53 responsive gene that maps, in humans, to chromosome 2p and encodes a protein with significant homology to oxidoreductases. Oxidoreductases are enzymes involved in cellular responses to oxidative stress and irradiation, and they influence the involvement of PIG3 in the metabolism of reactive oxygen species. PIG3 is localized to the cytoplasm and induced in primary, non-transformed, and transformed cell cultures after exposure to genotoxic agents. The induction of PIG3 is p53 dependent and occurs with delayed kinetics as compared with other p53 downstream targets. PIG3 may act with caspase-8 as a key regulatory element in p53-dependent transcriptional deregulation by triggering the caspase cascade and mitochondrial breakdown. PIG3 is highly up-regulated by p53 and may be useful for detecting transient activation of p53.

CHROMOSOMAL LOCATION

Genetic locus: TP53I3 (human) mapping to 2p23.3.

SOURCE

PIG3 (A-5) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of PIG3 of human origin.

PRODUCT

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

PIG3 (A-5) is available conjugated to agarose (sc-166664 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166664 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166664 PE), fluorescein (sc-166664 FITC), Alexa Fluor® 488 (sc-166664 AF488), Alexa Fluor® 546 (sc-166664 AF546), Alexa Fluor® 594 (sc-166664 AF594) or Alexa Fluor® 647 (sc-166664 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166664 AF680) or Alexa Fluor® 790 (sc-166664 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

PIG3 (A-5) is recommended for detection of PIG3 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 PIG3 siRNA (h): sc-36223, PIG3 shRNA Plasmid (h): sc-36223-SH and PIG3 shRNA (h) Lentiviral Particles: sc-36223-V.

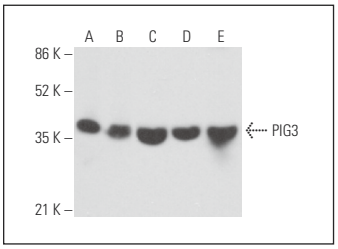
Molecular Weight of PIG3: 40 kDa.

Positive Controls: A549 cell lysate: sc-2413, SW480 cell lysate: sc-2219 or HeLa whole cell lysate: sc-2200.

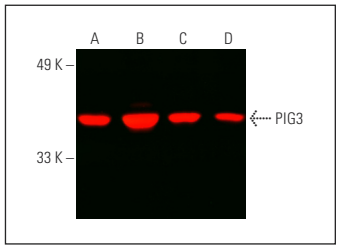
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



PIG3 (A-5): sc-166664. Western blot analysis of PIG3 expression in SW480 (**A**), HeLa (**B**), A549 (**C**) and NCI-H460 (**D**) whole cell lysates and human colon tissue extract (**E**). Detection reagent used: m-IgGκ BP-HRP: sc-516102.



PIG3 (A-5): sc-166664. Near-infrared western blot analysis of PIG3 expression in SW480 (**A**), A549 (**B**), NCI-H460 (**C**) and HeLa (**D**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 790: sc-516181.

SELECT PRODUCT CITATIONS

1. Wang, K.S., et al. 2011. Insulin receptor tyrosine kinase substrate enhances low levels of MDM2-mediated p53 ubiquitination. PLoS ONE 6: e23571.
2. Hanson, R.L., et al. 2019. Protein stability of p53 targets determines their temporal expression dynamics in response to p53 pulsing. J. Cell Biol. 218: 1282-1297.
3. Chaudhry, S.R., et al. 2021. Germline mutations in apoptosis pathway genes in ovarian cancer; the functional role of a TP53I3 (PIG3) variant in ROS production and DNA repair. Cell Death Discov. 7: 62.
4. Aschtgen, M.S., et al. 2022. Enterobacteria impair host p53 tumor suppressor activity through mRNA destabilization. Oncogene 41: 2173-2186.
5. Szwarc, M.M., et al. 2023. FAM193A is a positive regulator of p53 activity. Cell Rep. 42: 112230.

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.

PROTOCOLS

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