

PEG3 (X-24): sc-102056

BACKGROUND

Paternally-expressed gene 3 protein (PEG3), also known as PW1 or ZSCAN24, is a 1588 amino acid protein that localizes to the nucleus and cytoplasm. The PEG3 gene, which is thought to encode a transcription factor, is an imprinted gene that is expressed from the paternal allele in embryos. A member of the krueppel C₂H₂-type zinc-finger protein family, PEG3 is highly expressed in brain, astrocytes, glial cells, uterus, embryo, placenta, ovary and testis. In neurons with DNA damage, PEG3, in cooperation with SIAH-1, interacts with p53, c-Myc and Bax to induce apoptosis. Also, PEG3 associates specifically with TRAF2 to activate NFκB p50 and thus inhibit TNF-induced apoptosis. Three isoforms of PEG3 are expressed due to alternative splicing events.

REFERENCES

- Kim, J., Ashworth, L., Branscomb, E. and Stubbs, L. 1997. The human homolog of a mouse-imprinted gene, Peg3, maps to a zinc finger gene-rich region of human chromosome 19q13.4. *Genome Res.* 7: 532-540.
- Relaix, F., Wei, X.J., Wu, X. and Sassoon, D.A. 1998. PEG3/PW1 is an imprinted gene involved in the TNF-NFκB signal transduction pathway. *Nat. Genet.* 18: 287-291.
- Relaix, F., Wei, X., Li, W., Pan, J., Lin, Y., Bowtell, D.D., Sassoon, D.A. and Wu, X. 2000. PW1/PEG3 is a potential cell death mediator and cooperates with SIAH-1a in p53-mediated apoptosis. *Proc. Natl. Acad. Sci. USA* 97: 2105-2110.
- Kohda, T., Asai, A., Kuroiwa, Y., Kobayashi, S., Aisaka, K., Nagashima, G., Yoshida, M.C., Kondo, Y., Kagiya, N., Kirino, T., Kaneko-Ishino, T. and Ishino, F. 2001. Tumour suppressor activity of human imprinted gene PEG3 in a glioma cell line. *Genes Cell.* 6: 237-247.
- Hiby, S.E., Lough, M., Keverne, E.B., Surani, M.A., Loke, Y.W. and King, A. 2001. Paternal monoallelic expression of PEG3 in the human placenta. *Hum. Mol. Genet.* 10: 1093-1100.
- Yamaguchi, A., Taniguchi, M., Hori, O., Ogawa, S., Tojo, N., Matsuoka, N., Miyake, S., Kasai, K., Sugimoto, H., Tamatani, M., Yamashita, T. and Tohyama, M. 2002. PEG3/PW1 is involved in p53-mediated cell death pathway in brain ischemia/hypoxia. *J. Biol. Chem.* 277: 623-629.
- Johnson, M.D., Wu, X., Aithmitti, N. and Morrison, R.S. 2002. PEG3/PW1 is a mediator between p53 and Bax in DNA damage-induced neuronal death. *J. Biol. Chem.* 277: 23000-23007.
- Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 601483. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: PEG3 (human) mapping to 19q13.43.

STORAGE

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

SOURCE

PEG3 (X-24) is a purified rabbit polyclonal antibody raised against PEG3 of human origin.

PRODUCT

Each vial contains 50 µg IgG in 500 µl PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

APPLICATIONS

PEG3 (X-24) is recommended for detection of PEG3 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

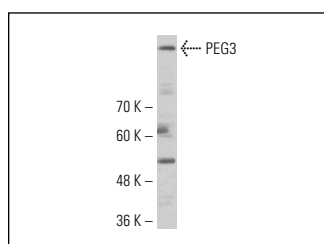
Suitable for use as control antibody for PEG3 siRNA (h): sc-97350; and as shRNA Plasmid control antibody for PEG3 shRNA Plasmid (h): sc-97350-SH.

Molecular Weight of PEG3: 181 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



PEG3 (X-24): sc-102056. Western blot analysis of PEG3 expression in A204 whole cell lysate.

RESEARCH USE

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

PROTOCOLS

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