SANTA CRUZ BIOTECHNOLOGY, INC.

PJA1 (3E10): sc-517068

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The Power to Question

BACKGROUND

Ubiquitinization is an important cellular degradation process requiring sequential reactions that are mediated by three enzymes: E1, E2 and E3. PJA1, also known as Praja1 and RING finger protein 70, is a 643 amino acid E2-dependent E3-ubiquitin ligase that is abundantly expressed in regions of the brain including cerebellum, medulla, cerebral cortex, putamen, occipital pole, temporal lobe and frontal lobe. Through interaction and activation with the E2-ubiquitin ligase UBC4, PJA1 mediates substrate-specific ubiquitization via its RING finger domain. The gene encoding PJA1 may be a candidate gene for X-linked mental retardations (MRXs), such as craniofrontonasal syndrome, due to its location on the X chromosome that is frequently found mutated in MRX patients. Overexpression of PJA1 in gastrointestinal cancers suggests that it may be responsible for the degradation of spectrin β II, a protein that exhibits anti-oncogenic activity. There are two named isoforms of PJA1 that exist as a result of alternative splicing events.

REFERENCES

1. Mishra, L., et al. 1997. Praja1, a novel gene encoding a RING-H2 motif in mouse development. Oncogene 15: 2361-2368.
2. Yu, P., et al. 2002. PJA1, encoding a RING-H2 finger ubiquitin ligase, is a novel human X chromosome gene abundantly expressed in brain. Genomics 79: 869-874.
3. Sasaki, A., et al. 2002. A RING finger protein Praja1 regulates Dlx5-dependent transcription through its ubiquitin ligase activity for the Dlx/Msx-interacting MAGE/Necdin family protein, Dlxin-1. J. Biol. Chem. 277: 22541-22546.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 300420. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Mishra, L., et al. 2005. The role of PRAJA and ELF in TGF-β signaling and gastric cancer. Cancer Biol. Ther. 4: 694-699.
6. Saha, T., et al. 2006. RING finger-dependent ubiquitination by PRAJA is dependent on TGF-β and potentially defines the functional status of the tumor suppressor ELF. Oncogene 25: 693-705.
7. Wieland, I., et al. 2007. Contiguous gene deletions involving EFNB1, OPHN1, PJA1 and EDA in patients with craniofrontonasal syndrome. Clin. Genet. 72: 506-516.

CHROMOSOMAL LOCATION

Genetic locus: PJA1 (human) mapping to Xq13.1.

SOURCE

PJA1 (3E10) is a mouse monoclonal antibody raised against amino acids 81-180 representing partial length PJA1 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

PJA1 (3E10) is recommended for detection of PJA1 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).

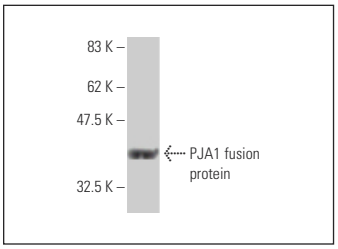
Suitable for use as control antibody for PJA1 siRNA (h): sc-91297, PJA1 shRNA Plasmid (h): sc-91297-SH and PJA1 shRNA (h) Lentiviral Particles: sc-91297-V.

Molecular Weight of PJA1: 71 kDa.

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).

DATA



PJA1 (3E10): sc-517068. Western blot analysis of human recombinant PJA1 fusion protein.

SELECT PRODUCT CITATIONS

1. Bunda, S., et al. 2019. CIC protein instability contributes to tumorigenesis in glioblastoma. Nat. Commun. 10: 661.

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.