

# PAR3A (4G5): sc-293213

## BACKGROUND

Cellular asymmetry is critical for the development of multicellular organisms. PARD (partitioning-defective) proteins play important roles in asymmetric cell division and polarized growth. PARD3A (partitioning-defective 3), also known as Baz, ASIP (atypical PKC isotype-specific-interacting protein), PAR3, PARD3, PAR3 $\alpha$ , Bazooka, SE2-5T2, SE2-5L16 or SE2-5LT1, is a 1,356 amino acid protein that contains three PDZ domains and belongs to the PAR3 family of proteins. Expressed in a wide variety of tissues, PARD3A colocalizes with PARD6A/B and PKC  $\epsilon$  at epithelial tight junctions and is believed to function as an adapter protein with an important role in the formation of normal tight junctions at epithelial cell-cell contacts. Due to alternative splicing events, PARD3A exists in at least ten isoforms, namely isoform A, isoform B, isoform C, isoform D, isoform E, isoform F, isoform Lb, isoform Sa, isoform Sb and isoform 10.

## REFERENCES

1. Joberty, G., Petersen, C., Gao, L. and Macara, I.G. 2000. The cell-polarity protein Par6 links Par3 and atypical protein kinase C to Cdc42. *Nat. Cell Biol.* 2: 531-539.
2. Suzuki, A., Yamanaka, T., Hirose, T., Manabe, N., Mizuno, K., Shimizu, M., Akimoto, K., Izumi, Y., Ohnishi, T. and Ohno, S. 2001. Atypical protein kinase C is involved in the evolutionarily conserved par protein complex and plays a critical role in establishing epithelia-specific junctional structures. *J. Cell Biol.* 152: 1183-1196.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606745. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Shi, S.H., Jan, L.Y. and Jan, Y.N. 2003. Hippocampal neuronal polarity specified by spatially localized mPar3/mPar6 and PI 3-kinase activity. *Cell* 112: 63-75.
5. Iden, S., Rehder, D., August, B., Suzuki, A., Wolburg-Buchholz, K., Wolburg, H., Ohno, S., Behrens, J., Vestweber, D. and Ebnet, K. 2006. A distinct PAR complex associates physically with VE-cadherin in vertebrate endothelial cells. *EMBO Rep.* 7: 1239-1246.
6. Chan, J.R., Jolicœur, C., Yamauchi, J., Elliott, J., Fawcett, J.P., Ng, B.K. and Cayouette, M. 2006. The polarity protein Par-3 directly interacts with p75<sup>NTR</sup> to regulate myelination. *Science* 314: 832-836.
7. Fang, L., Wang, Y., Du, D., Yang, G., Tak Kwok, T., Kai Kong, S., Chen, B., Chen, D.J. and Chen, Z. 2007. Cell polarity protein Par3 complexes with DNA-PK via Ku70 and regulates DNA double-strand break repair. *Cell Res.* 17: 100-116.
8. Kim, M., Datta, A., Brakeman, P., Yu, W. and Mostov, K.E. 2007. Polarity proteins PAR6 and aPKC regulate cell death through GSK-3 $\beta$  in 3D epithelial morphogenesis. *J. Cell Sci.* 120: 2309-2317.
9. Tawk, M., Araya, C., Lyons, D.A., Reugels, A.M., Girdler, G.C., Bayley, P.R., Hyde, D.R., Tada, M. and Clarke, J.D. 2007. A mirror-symmetric cell division that orchestrates neuroepithelial morphogenesis. *Nature* 446: 797-800.

## CHROMOSOMAL LOCATION

Genetic locus: PARD3 (human) mapping to 10p11.21.

## SOURCE

PAR3A (4G5) is a mouse monoclonal antibody raised against amino acids 181-290 of PARD3A of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

PAR3A (4G5) is recommended for detection of PARD3A of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

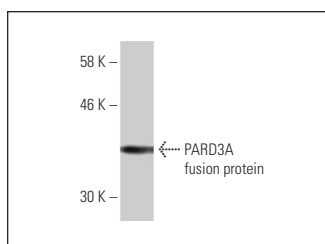
Suitable for use as control antibody for PARD3A siRNA (h): sc-76048, PARD3A shRNA Plasmid (h): sc-76048-SH and PARD3A shRNA (h) Lentiviral Particles: sc-76048-V.

Molecular Weight of PARD3A: 150 kDa.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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



PAR3A (4G5): sc-293213. Western blot analysis of human recombinant PARD3A fusion protein.

## 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.