

Pleckstrin (227.1): sc-100813

BACKGROUND

Activation of protein kinase C (PKC) in platelets results in immediate phosphorylation of Pleckstrin (previously called 40K or P47), the major PKC substrate in platelets. Pleckstrin contains a Ca²⁺-binding "EF-hand" structure and PKC phosphorylation sites at Ser 113 and Ser 117. The N- and C-termini of Pleckstrin contain two Pleckstrin homology domains (PH), which mediate protein-protein and protein-lipid interactions. Pleckstrin is highly expressed in human neutrophils. Pleckstrin is rapidly phosphorylated following treatment of neutrophils in response to inflammatory stimuli, probably by non-conventional PKC isoforms δ or ζ , which are expressed in human neutrophils. Phosphorylation by non-conventional PKC isoforms induces a conformational change in Pleckstrin that promotes its interaction with membranes and/or with the cytoskeleton, serving to target proteins or lipids recognized by PH domains to sites where they can contribute to the microbicidal response.

REFERENCES

1. Tyers, M., Rachubinski, R.A., Stewart, M.I., Varrichio, A.M., Shorr, R.G., Haslam, R.J. and Harley, C.B. 1988. Molecular cloning and expression of the major protein kinase C substrate of platelets. *Nature* 333: 470-473.
2. Tyers, M., Haslam, R.J., Rachubinski, R.A. and Harley, C.B. 1989. Molecular analysis of Pleckstrin: the major protein kinase C substrate of platelets. *J. Cell. Biochem.* 40: 133-145.
3. Yoon, H.S., Hajduk, P.J., Petros, A.M., Olejniczak, E.T., Meadows, R.P. and Fesik, S.W. 1994. Solution structure of a Pleckstrin-homology domain. *Nature* 369: 672-675.
4. Abrams, C.S., Zhao, W., Belmonte, E. and Brass, L.F. 1995. Protein kinase C regulates Pleckstrin by phosphorylation of sites adjacent to the N-terminal Pleckstrin homology domain. *J. Biol. Chem.* 270: 23317-23321.
5. Craig, K.L. and Harley, C.B. 1996. Phosphorylation of human Pleckstrin on Ser 113 and Ser 117 by protein kinase C. *Biochem. J.* 314: 937-942.
6. Brumell, J.H., Craig, K.L., Ferguson, D., Tyers, M. and Grinstein, S. 1997. Phosphorylation and subcellular redistribution of Pleckstrin in human neutrophils. *J. Immunol.* 158: 4862-4871.
7. Cmarik, J.L., Hegamyer, G., Gerrard, B., Dean, M. and Colburn, N.H. 2000. cDNA cloning and mapping of mouse Pleckstrin (Plek), a gene upregulated in transformation-resistant cells. *Genomics* 66: 204-212.

CHROMOSOMAL LOCATION

Genetic locus: PLEK (human) mapping to 2p14.

SOURCE

Pleckstrin (227.1) is a mouse monoclonal antibody raised against recombinant Pleckstrin of human origin.

PRODUCT

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

APPLICATIONS

Pleckstrin (227.1) is recommended for detection of Pleckstrin of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 Pleckstrin siRNA (h): sc-106419, Pleckstrin shRNA Plasmid (h): sc-106419-SH and Pleckstrin shRNA (h) Lentiviral Particles: sc-106419-V.

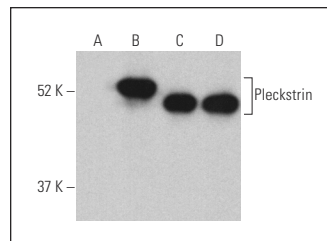
Molecular Weight of Pleckstrin: 40 kDa.

Positive Controls: Pleckstrin (h2): 293T Lysate: sc-170743, HEL 92.1.7 cell lysate: sc-2270 or THP-1 cell lysate: sc-2238.

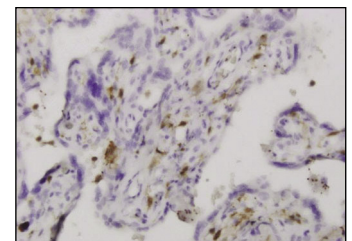
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Pleckstrin (227.1): sc-100813. Western blot analysis of Pleckstrin expression in non-transfected 293T: sc-117752 (A), human Pleckstrin transfected 293T: sc-170743 (B), HEL 92.1.7 (C) and THP-1 (D) whole cell lysates. Detection reagent used: m-IgG κ BP-HRP: sc-516102.



Pleckstrin (227.1): sc-100813. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human spleen tissue showing cytoplasmic localization.

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.