Revision 1

Store at -20C

#9921

Phospho-PKC Antibody Sampler Kit

1 Kit (9 x 20 microliters)

Cell Signaling TECHNOLOGY®

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Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
Phospho-PKD/PKCμ (Ser916) Antibody	2051	20 µl	115 kDa	Rabbit
PKD/PKCμ (D4J1N) Rabbit mAb	90039	20 µl	115 kDa	Rabbit IgG
Phospho-PKD/PKCμ (Ser744/748) Antibody	2054	20 µl	115 kDa	Rabbit
Phospho-PKC (pan) (βII Ser660) Antibody	9371	20 µl	78, 80, 82, 85 kDa	Rabbit
Phospho-PKCα/β II (Thr638/641) Antibody	9375	20 µl	80, 82 kDa	Rabbit
Phospho-PKCδ (Thr505) Antibody	9374	20 µl	78 kDa	Rabbit
Phospho-PKCδ/θ (Ser643/676) Antibody	9376	20 µl	78 kDa	Rabbit
Phospho-PKCθ (Thr538) Antibody	9377	20 µl	79 kDa	Rabbit
Phospho-PKCζ/λ (Thr410/403) Antibody	9378	20 µl	76 kDa	Rabbit
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

Description

The Phospho-PKC Antibody Sampler Kit provides a fast and economical means of evaluating multiple PKC isoforms and their phosphorylation state. The kit contains enough primary and secondary antibodies to perform two Western blot experiments.

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Background

Activation of protein kinase C (PKC) is one of the earliest events in a cascade that controls a variety of cellular responses, including secretion, gene expression, proliferation, and muscle contraction (1,2). PKC isoforms belong to three groups based on calcium dependency and activators. Classical PKCs are calcium-dependent via their C2 domains and are activated by phosphatidylserine (PS), diacylglycerol (DAG), and phorbol esters (TPA, PMA) through their cysteine-rich C1 domains. Both novel and atypical PKCs are calcium-independent, but only novel PKCs are activated by PS, DAG, and phorbol esters (3-5). Members of these three PKC groups contain a pseudo-substrate or autoinhibitory domain that binds to substrate-binding sites in the catalytic domain to prevent activation in the absence of cofactors or activators. Control of PKC activity is regulated through three distinct phosphorylation events. Phosphorylation occurs *in vivo* at Thr500 in the activation loop, at Thr641 through autophosphorylation, and at the carboxy-terminal hydrophobic site Ser660 (2). Atypical PKC isoforms lack hydrophobic region phosphorylation, which correlates with the presence of glutamic acid rather than the serine or threonine residues found in more typical PKC isoforms. The enzyme PDK1 or a close relative is responsible for PKC activation. A recent addition to the PKC superfamily is PKCμ (PKD), which is regulated by DAG and TPA through its C1 domain. PKD is distinguished by the presence of a PH domain and by its unique substrate recognition and Golgi localization (6). PKC-related kinases (PRK) lack the C1 domain and do not respond to DAG or phorbol esters. Phosphatidylinositol lipids activate PRKs, and small Rho-family GTPases bind to the homology region 1 (HR1) to regulate PRK kinase activity (7).

Background References

1. Nishizuka, Y. (1984) *Nature* 308, 693-8.
2. Keranen, L.M. et al. (1995) *Curr Biol* 5, 1394-403.
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4. Ron, D. and Kazanietz, M.G. (1999) *FASEB J* 13, 1658-76.
5. Moscat, J. and Diaz-Meco, M.T. (2000) *EMBO Rep* 1, 399-403.
6. Baron, C.L. and Malhotra, V. (2002) *Science* 295, 325-8.
7. Flynn, P. et al. (2000) *J Biol Chem* 275, 11064-70.

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