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#93521

Cannabinoid Receptor 1 Downstream Signaling Antibody Sampler Kit



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New 04/20

For Research Use Only. Not For Use In Diagnostic Procedures.

Products Included	Product #	Quantity	Mol. Wt.	Isotype/Source
CB1 Receptor (D5N5C) Rabbit mAb	93815	20 µl	60 kDa	Rabbit IgG
Phospho-CREB (Ser133) (87G3) Rabbit mAb	9198	20 µl	43 kDa	Rabbit IgG
CREB (48H2) Rabbit mAb	9197	20 µl	43 kDa	Rabbit IgG
Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb	4060	20 µl	60 kDa	Rabbit IgG
Akt (pan) (C67E7) Rabbit mAb	4691	20 µl	60 kDa	Rabbit IgG
Phospho-mTOR (Ser2448) (D9C2) XP® Rabbit mAb	5536	20 µl	289 kDa	Rabbit IgG
mTOR (7C10) Rabbit mAb	2983	20 µl	289 kDa	Rabbit IgG
Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (D13.14.4E) XP® Rabbit mAb	4370	20 µl	44, 42 kDa	Rabbit IgG
Phospho-SAPK/JNK (Thr183/Tyr185) (81E11) Rabbit mAb	4668	20 µl	46, 54 kDa	Rabbit IgG
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat

See www.cellsignal.com for individual component applications, species cross-reactivity, dilutions and additional application protocols.

Description: The Cannabinoid Receptor 1 Downstream Signaling Antibody Sampler Kit provides an economical means of detecting the activation of downstream cannabinoid receptor signaling pathways using phospho-specific and control antibodies. The kit includes enough antibodies to perform two western blot experiments with each primary antibody.

Background: Cannabinoid receptors mediate a number of physiological processes in the brain ranging from appetite regulation, pain, learning, and memory (1). The major cannabinoid receptors in the brain include CB1 and CB2 receptors, which are G-protein coupled receptors (GPCRs). CB1 interacts with other GPCRs, including metabotropic glutamate receptor 1, mGluR1 (2). Endogenous ligands, endocannabinoids, but also exogenously introduced compounds such as tetrahydrocannabinol (THC), activate cannabinoid receptors by promoting the exchange of GDP for GTP, leading to a cascade of signaling pathways that are activated to drive various functions. Some of these functions include neurite outgrowth, inflammation, and transcriptional control (3). Components of this kit are readouts for several downstream signaling components of CB1 receptor and they can also be used as a readout for CB1 activation and function. Cannabinoid receptor function is not limited to brain function but may modulate peripheral functions, including immune responses (4,5).

Specificity/Sensitivity: Each antibody in the Cannabinoid Receptor 1 Downstream Signaling Antibody Sampler Kit detects endogenous levels of its target protein. Phospho-SAPK/JNK (Thr183/Tyr185) (81E11) Rabbit mAb detects endogenous levels of p46 and p54 SAPK/JNK when phosphorylated at Thr183 and Tyr185. It will also react with SAPK/JNK singly phosphorylated at Tyr185. Phospho-SAPK/JNK (Thr183/Tyr185) (81E11) Rabbit mAb may cross-react with phosphorylated p44/42 or

p38 MAP kinases. Phospho-CREB (Ser133) (87G3) Rabbit mAb detects endogenous levels of CREB only when phosphorylated at serine 133. Phospho-CREB (Ser133) (87G3) Rabbit mAb also detects the phosphorylated form of the CREB-related protein, ATF-1. Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb detects endogenous levels of Akt only when phosphorylated at Ser473. Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (D13.14.4E) XP® Rabbit mAb detects endogenous levels of p44 and p42 MAP Kinase (Erk1 and Erk2) when dually phosphorylated at Thr202 and Tyr204 of Erk1 (Thr185 and Tyr187 of Erk2), and singly phosphorylated at Thr202. Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (D13.14.4E) XP® Rabbit mAb does not cross-react with the corresponding phosphorylated residues of either JNK/SAPK or p38 MAP kinases. Phospho-mTOR (Ser2448) (D9C2) XP® Rabbit mAb detects endogenous levels of mTOR protein only when phosphorylated at Ser2448.

Source/Purification: CB1 Receptor (D5N5C) Rabbit mAb is produced by immunizing animals with recombinant protein specific to the extracellular domains of mouse CB1 Receptor protein. CREB (48H2) Rabbit mAb is produced by immunizing animals with recombinant protein specific to the amino terminus of human CREB-1 protein. Akt (pan) (C67E7) Rabbit mAb is produced by immunizing animals with a synthetic peptide corresponding to residues in the carboxy-terminal sequence of mouse Akt. mTOR (7C10) Rabbit mAb is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ser2481 of human mTOR. Phosphorylation-specific monoclonal antibodies are produced by immunizing rabbits with synthetic peptides corresponding to Thr183/Tyr185 of human SAPK/JNK, Ser133 of human CREB, Ser473 of human Akt, Thr202/Tyr204 of human p44 MAP kinase, and Ser2448 of human mTOR protein.

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 antibodies.

For product specific protocols and a complete listing of recommended companion products please see the product web page at www.cellsignal.com.

Background References:

- (1) Smith, T.H. et al. (2010) *Br J Pharmacol* 160, 454-66.
- (2) Batista, E.M. et al. (2016) *Mol Brain* 9, 80.
- (3) Lu, D. et al. (2019) *Acta Pharmacol Sin* 40, 324-35.
- (4) Ruiz de Azua, I. et al. (2017) *J Clin Invest* 127, 4148-62.
- (5) Mehrpouya-Bahrami, P. et al. (2017) *Sci Rep* 7, 15645.

U.S. Patent No. 7,429,487, foreign equivalents, and child patents deriving therefrom.

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