Store at -20°C

#24653

PhosphoPlus® MLKL (Ser345) Antibody Duet

Cell Signaling TECHNOLOGY®

Support: +1-978-867-2388 (U.S.)
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Entrez-Gene ID #74568
UniProt ID #Q9D2Y4

New 04/20

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

Products Included	Product #	Quantity	Mol. Wt.	Isotype
Phospho-MLKL (Ser345) (D6E3G) Rabbit mAb	37333	100 µl	54 kDa	Rabbit IgG
MLKL (D6W1K) Rabbit mAb (Mouse Specific)	37705	100 µl	54 kDa	Rabbit IgG

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

Description: PhosphoPlus® Duets from Cell Signaling Technology (CST) provide a means to assess protein activation status. Each Duet contains an activation-state and total protein antibody to your target of interest. These antibodies have been selected from CST's product offering based upon superior performance in specified applications.

Background: Necroptosis, a regulated pathway for necrotic cell death, is triggered by a number of inflammatory signals including cytokines in the tumor necrosis factor (TNF) family, pathogen sensors such as toll-like receptors (TLRs), and ischemic injury (1,2). The process is negatively regulated by caspases and is initiated through a complex containing the RIP1 and RIP3 kinases, typically referred to as the necrosome. Mixed lineage kinase domain-like protein (MLKL) is a pseudokinase that was identified as downstream target of RIP3 in the necroptosis pathway (3,4). During necroptosis RIP3 is phosphorylated at Ser227, which recruits MLKL and leads to its phosphorylation at Thr357 and Ser358 (3). Knockdown of MLKL through multiple mechanisms results in inhibition of necroptosis (3-5). While the precise mechanism for MLKL-induced necroptosis is unclear, some studies have shown that necroptosis leads to oligomerization of MLKL and translocation to the plasma membrane, where it effects membrane integrity (6-9).

Specificity/Sensitivity: Phospho-MLKL (Ser345) (D6E3G) Rabbit mAb recognizes endogenous levels of mouse MLKL protein only when phosphorylated at Ser345. Weak, non-specific nuclear staining has been observed by immunofluorescence (IF-IC). MLKL (D6W1K) Rabbit mAb (Mouse Specific) recognizes endogenous levels of total mouse MLKL protein.

Source/Purification: Monoclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser345 of mouse MLKL protein and a synthetic peptide corresponding to residues near the carboxy terminus of mouse MLKL 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 antibody.*

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) Christofferson, D.E. and Yuan, J. (2010) *Curr Opin Cell Biol* 22, 263-8.

(2) Kaczmarek, A. et al. (2013) *Immunity* 38, 209-23.

(3) Sun, L. et al. (2012) *Cell* 148, 213-27.

(4) Wang, Z. et al. (2012) *Cell* 148, 228-43.

(5) Wu, J. et al. (2013) *Cell Res* 23, 994-1006.

(6) Cai, Z. et al. (2014) *Nat Cell Biol* 16, 55-65.

(7) Chen, X. et al. (2014) *Cell Res* 24, 105-21.

(8) Wang, H. et al. (2014) *Mol Cell* 54, 133-46.

(9) Dondelinger, Y. et al. (2014) *Cell Rep* 7, 971-81.

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www.cellsignal.com

Applications: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide **Species Cross-Reactivity:** **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—Horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.