

Store at  
-20°C

#63617

# PhosphoPlus® Optineurin (Ser177) Antibody Duet



Cell Signaling  
TECHNOLOGY®

**Support:** +1-978-867-2388 (U.S.)  
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**Entrez-Gene ID** #10133  
**UniProt ID** #Q96CV9

New 05/20

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

Products Included	Product #	Quantity	Mol. Wt.	Isotype
Phospho-Optineurin (Ser177) (E8L9I) Rabbit mAb	31304	100 µl	75 kDa	Rabbit IgG
Optineurin (E4P8C) Rabbit mAb	70928	100 µl	75 kDa	Rabbit IgG

See [www.cellsignal.com](http://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:** Optineurin is a signaling protein involved in maintenance of the Golgi complex, membrane trafficking, NF-κB, and interferon signaling. Mutations in the gene encoding optineurin have been associated with human diseases including glaucoma, Paget disease of bone, and amyotrophic lateral sclerosis (ALS) (1-2). Optineurin is thought to contribute to these pathologies through regulation of inflammatory signaling, autophagy, and mitophagy (1, 3). The NF-κB-activating kinase/TANK-binding kinase 1 (NAK/TBK1) phosphorylates optineurin at serine 177, regulating optineurin's role in autophagy and mitophagy (4-6). The tumor suppressor HACE1 ubiquitylates optineurin, promoting the interaction of optineurin with the autophagy receptor p62/SQSTM1 (7).

Phosphorylation of optineurin at serine 177 by TBK1 enhances binding to LC3 and promotes autophagic clearance (8). Additional studies also suggest that serine 177 is phosphorylated during mitosis by PLK1 (9). In addition to serine 177, TBK1 also phosphorylates optineurin at serine 473 and 513, which can enhance its binding to ubiquitin chains and promote mitophagy (5,6).

**Specificity/Sensitivity:** Phospho-Optineurin (Ser177) (E8L9I) Rabbit mAb recognizes endogenous levels of optineurin protein only when phosphorylated at Ser177. Optineurin (E4P8C) Rabbit mAb recognizes endogenous levels of total optineurin protein.

**Source/Purification:** Monoclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser177 of human optineurin protein and a recombinant protein specific to human optineurin 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](http://www.cellsignal.com).**

#### Background References:

- (1) Ying, H. and Yue, B.Y. (2016) *Exp Eye Res* 144, 73-80.
- (2) Slowicka, K. et al. (2016) *Trends Immunol* 37, 621-33.
- (3) Markovinic, A. et al. (2017) *Prog Neurobiol* 154, 1-20.
- (4) Moore, A.S. and Holzbaur, E.L. (2016) *Proc Natl Acad Sci U S A* 113, E3349-58.
- (5) Richter, B. et al. (2016) *Proc Natl Acad Sci U S A* 113, 4039-44.
- (6) Heo, J.M. et al. (2015) *Mol Cell* 60, 7-20.
- (7) Liu, Z. et al. (2014) *Cancer Cell* 26, 106-20.
- (8) Wild, P. et al. (2011) *Science* 333, 228-33.
- (9) Kachaner, D. et al. (2012) *Mol Cell* 45, 553-66.

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**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.