Revision 1

Store at -20C

#63617

PhosphoPlus® Optineurin (Ser177) Antibody Duet

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

UniProt ID:	Entrez-Gene Id:
#Q96CV9	10133

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

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

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.

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

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).

Background References

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3. Markovinovic, 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.

Trademarks and Patents

Limited Uses

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