Revision 1

#8881 Store at -20C

Phospho-AS160 (Thr642) (D27E6) Rabbit mAb

Cell Signaling TECHNOLOGY®

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB	H M	Endogenous	160	Rabbit IgG	#O60343	9882

Product Usage Information

Application	Dilution
Western Blotting	1:1000

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.

Specificity / Sensitivity

Phospho-AS160 (Thr642) (D27E6) Rabbit mAb recognizes endogenous levels of AS160 protein only when phosphorylated at Thr642.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Thr642 of human AS160 protein.

Background

Insulin is a major hormone controlling critical energy functions, such as glucose and lipid metabolism. Insulin binds to and activates the insulin receptor (IR) tyrosine kinase, which phosphorylates and recruits adaptor proteins. The signaling pathway initiated by insulin and its receptor stimulates glucose uptake in muscle cells and adipocytes through translocation of the Glut4 glucose transporter from the cytoplasm to the plasma membrane (1). A 160 kDa substrate of the Akt Ser/Thr kinase (AS160, TBC1D4) is a Rab GTPase-activating protein that regulates insulin-stimulated Glut4 trafficking. AS160 is expressed in many tissues including brain, kidney, liver, and brown and white fat (2). Multiple Akt phosphorylation sites have been identified on AS160 *in vivo*, with five sites (Ser318, Ser570, Ser588, Thr642, and Thr751) showing increased phosphorylation following insulin treatment (2,3). Studies using recombinant AS160 demonstrate that insulin-stimulated phosphorylation of AS160 is a crucial step in Glut4 translocation (3) and is reduced in some patients with type 2 diabetes (4). The interaction of 14-3-3 regulatory proteins with AS160 phosphorylated at Thr642 is a necessary step for Glut4 translocation (5). Phosphorylation of AS160 by AMPK is involved in the regulation of contraction-stimulated Glut4 translocation (6).

Background References

1. Watson, R.T. and Pessin, J.E. (2006) *Trends Biochem. Sci.* 31, 215-22.
2. Kane, S. et al. (2002) *J. Biol. Chem.* 277, 22115-8.
3. Sano, H. et al. (2003) *J. Biol. Chem.* 278, 14599-602.
4. Karlsson, H.K. et al. (2005) *Diabetes* 54, 1692-7.
5. Ramm, G. et al. (2006) *J. Biol. Chem.* 281, 29174-80.
6. Kramer, H.F. et al. (2006) *J. Biol. Chem.* 281, 31478-85.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **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 **GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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