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Store at -20C
#4288

Phospho-AS160 (Thr642) Antibody

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

Applications: W	Reactivity: H	Sensitivity: Endogenous	MW (kDa): 160	Source/Isotype: Rabbit	UniProt ID: #O60343	Entrez-Gene Id: 9882
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Product Usage Information

Application

Western Blotting

Dilution

1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

Specificity/Sensitivity

Phospho-AS160 (Thr642) Antibody detects endogenous levels of AS160 protein only when phosphorylated at Thr642.

Species predicted to react based on 100% sequence homology

Mouse, Rat

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to the sequence around Thr642 of human AS160. Antibodies are purified by protein A and peptide affinity chromatography.

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 BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

H: Human

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