Revision 1

Store at -20C

#59633

# AS160 Signaling Antibody Sampler Kit

1 Kit (7 x 20 microliters)

Cell Signaling TECHNOLOGY®

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

| Product Includes | Product # | Quantity | Mol. Wt | Isotype/Source |
|---|---|---|---|---|
| AS160 (C69A7) Rabbit mAb | 2670 | 20 µl | 160 kDa | Rabbit |
| Phospho-AS160 (Ser318) (D3D11) Rabbit mAb | 8619 | 20 µl | 160 kDa | Rabbit IgG |
| Phospho-AS160 (Ser588) (D8E4) Rabbit mAb | 8730 | 20 µl | 160 kDa | Rabbit IgG |
| Phospho-AS160 (Thr642) (D27E6) Rabbit mAb | 8881 | 20 µl | 160 kDa | Rabbit IgG |
| Akt (pan) (C67E7) Rabbit mAb | 4691 | 20 µl | 60 kDa | Rabbit IgG |
| Phospho-Akt (Thr308) (D25E6) XP® Rabbit mAb | 13038 | 20 µl | 60 kDa | Rabbit IgG |
| Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb | 4060 | 20 µl | 60 kDa | Rabbit IgG |
| Anti-rabbit IgG, HRP-linked Antibody | 7074 | 100 µl | | Goat |

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

## Description

The AS160 Signaling Antibody Sampler Kit provides an economical means of detecting select components involved in the AS160 signaling pathway. The kit contains enough primary antibodies to perform at least two western blot experiments per antibody.

## 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

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).

Akt, also referred to as PKB or Rac, plays a critical role in controlling survival and apoptosis (7-9). This protein kinase is activated by insulin and various growth and survival factors to function in a wortmannin-sensitive pathway involving PI3 kinase (8,9). Akt is activated by phospholipid binding and activation loop phosphorylation at Thr308 by PDK1 (10) and by phosphorylation within the carboxy terminus at Ser473. The previously elusive PDK2 responsible for phosphorylation of Akt at Ser473 has been identified as the mammalian target of rapamycin (mTOR) in a rapamycin-insensitive complex with rictor and Sin1 (11,12).

## Background References

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