

## Product Information

### Anti-GLUT4

produced in rabbit, affinity isolated antibody

Product Number **G4173**

#### Product Description

Anti-GLUT4 is developed in rabbit using as the immunogen a synthetic peptide corresponding to a fragment of human GLUT4 (GeneID: 6517), conjugated to KLH. The corresponding sequence is identical in rat and mouse GLUT4. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-GLUT4 specifically recognizes human and mouse GLUT4. The antibody may be used in various immunochemical techniques including immunoblotting (~58 kDa) and immunofluorescence. Detection of the GLUT4 band by immunoblotting is specifically inhibited by the GLUT4 immunizing peptide.

Insulin signaling cascades regulate many cellular processes, with regulation of glucose homeostasis being one of the most critical functions. Defects in glucose uptake result in insulin resistance and type II diabetes. Glucose transporters, including GLUT1-5 and GLUT7, mediate glucose uptake in mammalian cells. Insulin increases glucose transport into adipose tissue, skeletal and cardiac muscle, primarily by a mechanism that regulates the rapid translocation of the glucose transporter 4 (GLUT4; also known as SLC2A4) from intracellular compartments to the plasma membrane.<sup>1,2</sup> In contrast, the glucose transporter GLUT1, is localized to the membrane and contributes to basal glucose levels. Insulin-stimulated glucose uptake and GLUT4 vesicle translocation require the regulated interaction between the v-SNARE, VAMP2, t-SNARE and syntaxin 4.<sup>2,3</sup> Several additional candidate signaling intermediates, including Synip, AS160, and PIKfyve/PIP5K3, have been identified as functional links between the insulin signaling cascade and GLUT4 vesicles.<sup>2</sup> The translocation of GLUT4 from intracellular vesicles (endosomes) to the plasma membrane requires PKB/Akt, that is thought to phosphorylate Synip/STXBP4 and AS160.<sup>4,5</sup>

#### Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~1.5 mg/mL

#### Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

#### Storage/Stability

Store at -20 °C. For continuous use, the product may be stored at 2-8 °C for up to one month. For extended storage, freeze in working aliquots at -20 °C. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

#### Product Profile

Immunoblotting: a working antibody concentration of 1-2 µg/mL is recommended using a C2C12 cell lysate and HepG2 cell lysate.

Immunofluorescence: A working antibody concentration of 10-20 µg/mL is recommended using C2C12 cells.

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration.

#### References

1. Ishiki, M., and Klip, A., *Endocrinol.*, **146**, 5071-5078 (2005).
2. Watson, R.T., and Pessin, J.E., *Trends Biochem. Sci.*, **31**, 215-222 (2006).
3. Olson, A.L. et al., *Mol. Cell Biol.*, **17**, 2425-2435 (1997).
4. Yamada, E. et al., *J. Cell Biol.*, **168**, 921-928 (2005).
5. Sano, H. et al., *J. Biol. Chem.*, **278**, 14599-14602 (2003).

VS,ER,TD,KAA,PHC,MAM 04/19-1