Datasheet: 4670-1725GA

BATCH NUMBER 161442

Description:	MOUSE ANTI GLUCOSE TRANSPORTER 4
Specificity:	GLUCOSE TRANSPORTER 4
Other names:	GLUT4
Format:	Purified
Product Type:	Monoclonal Antibody
Clone:	1F8
Isotype:	IgG1
Quantity:	0.1 mg

Product Details

Applications

This product has been reported to work in the following applications. This information is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information. For general protocol recommendations, please visit www.bio-rad-antibodies.com/protocols.

	Yes	No	Not Determined	Suggested Dilution
Immunohistology - Frozen	▪			
Immunohistology - Paraffin	▪			
ELISA			▪	
Immunoprecipitation	▪			
Western Blotting	▪			
Immunofluorescence	▪			

Where this product has not been tested for use in a particular technique this does not necessarily exclude its use in such procedures. Suggested working dilutions are given as a guide only. It is recommended that the user titrates the product for use in their own system using the appropriate negative/positive controls.

Target Species

Rat

Species Cross Reactivity

Reacts with: Mouse, Monkey, Rabbit, Human, Pig
Does not react with:Dog
N.B. Antibody reactivity and working conditions may vary between species. Cross reactivity is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information.

Product Form

Purified IgG - liquid

Preparation	Purified IgG prepared by affinity chromatography on Protein G from tissue culture supernatant
Buffer Solution	Phosphate buffered saline
Preservative Stabilisers	0.09% Sodium Azide (NaN_3)
Carrier Free	Yes
Approx. Protein Concentrations	IgG concentration 1.0mg/ml
Immunogen	Partially purified vesicles containing insulin-responsive glucose transporter 4.
External Database Links	**UniProt:** P19357 Related reagents P14672 Related reagents P14142 Related reagents **Entrez Gene:** 25139 Slc2a4 Related reagents 6517 SLC2A4 Related reagents 20528 Slc2a4 Related reagents
Synonyms	Glut4, Glut-4, GLUT4
RRID	AB_11152941
Specificity	**Mouse anti glucose transporter 4 antibody, clone 1F8** originally raised against rat intracellular low density microsomes (James *et al.* 1987) recognizes an epitope in the cytoplasmic region of Glucose transporter 4 (GLUT4), an insulin-regulated facilitative glucose transporter found in adipose tissue and striated muscle. When stimulated by insulin, GLUT4 translocates from intracellular stores to the cell surface, facilitating passive diffusion of circulating glucose into muscle and fat cells. GLUT4 is also stimulated to locate to the cell surface by muscle contraction, particularly in cardiac muscle (James *et al.* 1988). Mouse anti glucose transporter 4 antibody, clone 1F8 has been used successfully to demonstrate the localization of GLUT4 to the basolateral side of ductal structures in the rat submandibular salivary gland in formalin fixed, paraffin embedded material (Cetik *et al.* 2014).
References	1. James, D.E. *et al.* (1989) Molecular cloning and characterization of an insulin-regulatable glucose transporter. Nature. 338 (6210): 83-7. 2. Cleasby, M.E. *et al.* (2003) Programming of rat muscle and fat metabolism by *in utero* overexposure to glucocorticoids. Endocrinology. 144 (3): 999-1007.

3. Huang, J., *et al*. (2001) Insulin can regulate GLUT4 internalization by signaling to Rab5 and the motor protein dynein. Proc Natl Acad Sci U S A. 98:13084-13089.
4. Farese, R.V. *et al.* (2007) Muscle-specific knockout of PKC-lambda impairs glucose transport and induces metabolic and diabetic syndromes. J Clin Invest. 117: 2289-301.
5. Grainger, D.L. *et al.* (2011) Involvement of phosphatidylinositol 5-phosphate in insulin-stimulated glucose uptake in the L6 myotube model of skeletal muscle. Pflugers Arch. 462: 723-32.
6. Minakawa, M. *et al.* (2011) Hypoglycemic effect of resveratrol in type 2 diabetic model db/db mice and its actions in cultured L6 myotubes and RIN-5F pancreatic β-cells. J Clin Biochem Nutr. 48: 237-44.
7. Gillies, R.M. *et al.* (2011) Immunohistochemical assessment of intrinsic and extrinsic markers of hypoxia in reproductive tissue: differential expression of HIF1α and HIF2α in rat oviduct and endometrium. J Mol Histol. 42: 341-54.
8. Aksentijević, D. *et al.* (2009) Insulin resistance and altered glucose transporter 4 expression in experimental uremia. Kidney Int. 75: 711-8.
9. Imamura, T. *et al.* (2001) beta -Arrestin-mediated recruitment of the Src family kinase Yes mediates endothelin-1-stimulated glucose transport. J Biol Chem. 276 (47): 43663-7.
10. Allard, M.F. *et al.* (2000) Hypertrophied rat hearts are less responsive to the metabolic and functional effects of insulin. Am J Physiol Endocrinol Metab. 279 (3): E487-93.
11. Lalioti, V.S. *et al.* (2002) The insulin-sensitive glucose transporter, GLUT4, interacts physically with Daxx. Two proteins with capacity to bind Ubc9 and conjugated to SUMO1. J Biol Chem. 277: 19783-91.
12. Cetik, S. *et al.* (2014) Expression and Localization of Glucose Transporters in Rodent Submandibular Salivary Glands. Cell Physiol Biochem. 33: 1149-1161.
13. de Laat, M.A. *et al.* (2015) AICAR administration affects glucose metabolism by upregulating the novel glucose transporter, GLUT8, in equine skeletal muscle. Vet J. 205 (3): 381-6.
14. Lee, Y-S. *et al.* (2015) Honokiol, magnolol, and a combination of both compounds improve glucose metabolism in high-fat diet-induced obese mice Food Sci Biotech. 24 (4): 1467-74.
15. Lee, Y. *et al.* (2012) Fargesin improves lipid and glucose metabolism in 3T3-L1 adipocytes and high-fat diet-induced obese mice BioFactors. 38 (4): 300-8.
16. Campolo, A. *et al.* (2024) Diabetes Causes Significant Alterations in Pulmonary Glucose Transporter Expression Metabolites. 14 (5): 267.

Further Reading

1. Berger, J. *et al.* (1989) Decreased expression of the insulin-responsive glucose transporter in diabetes and fasting. Nature. 340 (6228): 70-2.

Storage

This product is shipped at ambient temperature. It is recommended to aliquot and store at -20°C on receipt. When thawed, aliquot the sample as needed. Keep aliquots at 2-8°C for short term use (up to 4 weeks) and store the remaining aliquots at -20°C.

Avoid repeated freezing and thawing as this may denature the antibody. Storage in frost-free freezers is not recommended.

Guarantee

12 months from date of despatch

Health And Safety

Material Safety Datasheet documentation #10040 available at:

Information	https://www.bio-rad-antibodies.com/SDS/4670-1725GA 10040
Regulatory	For research purposes only

Related Products

Recommended Secondary Antibodies

Rabbit Anti Mouse IgG (STAR12...)	RPE
Goat Anti Mouse IgG IgA IgM (STAR87...)	HRP
Goat Anti Mouse IgG (STAR76...)	RPE
Goat Anti Mouse IgG (STAR70...)	FITC
Rabbit Anti Mouse IgG (STAR13...)	HRP
Goat Anti Mouse IgG (Fc) (STAR120...)	FITC, HRP
Rabbit Anti Mouse IgG (STAR9...)	FITC
Goat Anti Mouse IgG (STAR77...)	HRP
Goat Anti Mouse IgG (H/L) (STAR117...)	Alk. Phos., DyLight®488, DyLight®550, DyLight®650, DyLight®680, DyLight®800, FITC, HRP

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