Revision 1

Store at -20C

#8337

Glycolysis Antibody Sampler Kit

1 Kit (8 x 20 microliters)

Cell Signaling TECHNOLOGY®

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Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
PKM2 (D78A4) XP® Rabbit mAb	4053	20 µl	60 kDa	Rabbit IgG
GAPDH (D16H11) XP® Rabbit mAb	5174	20 µl	37 kDa	Rabbit IgG
Pyruvate Dehydrogenase (C54G1) Rabbit mAb	3205	20 µl	43 kDa	Rabbit IgG
Hexokinase I (C35C4) Rabbit mAb	2024	20 µl	102 kDa	Rabbit IgG
Hexokinase II (C64G5) Rabbit mAb	2867	20 µl	102 kDa	Rabbit
LDHA (C4B5) Rabbit mAb	3582	20 µl	37 kDa	Rabbit IgG
PKM1/2 (C103A3) Rabbit mAb	3190	20 µl	60 kDa	Rabbit IgG
PFKP (D4B2) Rabbit mAb	8164	20 µl	80 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 Glycolysis Antibody Sampler Kit provides an economical means to investigate select enzymes involved in glycolysis. The kit contains enough primary antibody to perform two western blot experiments with each primary 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

Glycolysis is the metabolic process by which glucose is converted to pyruvate in a sequence of enzymatic steps. Hexokinase catalyzes the conversion of glucose to glucose-6-phosphate, the first step in glycolysis. Hexokinases I, II, and III are associated with the outer mitochondrial membrane and are critical for maintaining an elevated rate of aerobic glycolysis in cancer cells (Warburg effect) (1). Phosphofructokinase (PFK) catalyzes the phosphorylation of fructose-6-phosphate. Platelet-type phosphofructokinase (PFKP) is expressed in various cell types (2). Glyceraldehyde-3-phosphate dehydrogenase (GAPDH) catalyzes the phosphorylation of glyceraldehyde-3-phosphate (3). Pyruvate kinase, a glycolytic enzyme, catalyses the conversion of phosphoenolpyruvate to pyruvate. In mammals, the M1 isoform (PKM1) is expressed in most adult tissues. The M2 isoform (PKM2), an alternatively-spliced variant of M1, is expressed during embryonic development (4). Lactate dehydrogenase (LDH) catalyzes the interconversion of pyruvate and NADH to lactate and NAD+ (5). LDHA expression is induced when the oxygen supply is too low for mitochondrial ATP production (6). The pyruvate dehydrogenase complex catalyzes the conversion of pyruvate and CoA into acetyl-CoA and CO_2 in the presence of NAD+. The reaction of oxidative decarboxylation of pyruvate serves as a critical link between glycolysis and the citric acid cycle and lipid metabolism (7).

Background References

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2. Morrison, N. et al. (1992) *Hum Genet* 89, 105-6.
3. Barber, R.D. et al. (2005) *Physiol Genomics* 21, 389-95.
4. Christofk, H.R. et al. (2008) *Nature* 452, 230-3.
5. Semenza, G.L. et al. (1996) *J Biol Chem* 271, 32529-37.
6. Semenza, G.L. (2007) *Biochem J* 405, 1-9.
7. Strumiło, S. (2005) *Acta Biochim Pol* 52, 759-64.

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