Store at

1866

Phospho-Pyruvate Dehydrogenase α1 (Ser293) Antibody



Orders:	877-616-CELL (2355 orders@cellsignal.com			
Support:	877-678-TECH (8324			
Web:	info@cellsignal.com cellsignal.com			

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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

Applications: W	Reactivity: H M R Mk	Sensitivity: Endogenous	MW (kDa): 43	Source/Isotype: Rabbit	UniProt ID: #P08559, #P29803	Entrez-Gene Id: 5160, 5161		
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/Sensi	tivity	Phospho-Pyruvate Dehydrogenase α1 (Ser293) Antibody recognizes endogenous levels of pyruvate dehydrogenase α1 protein only when phosphorylated at Ser293 residue. Based on amino acid sequence comparisons, this antibody is predicted to detect endogenous levels of pyruvate dehydrogenase α2 protein only when phosphorylated at Ser291 residue.						
Source / Purifica	tion	Polyclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser293 of human pyruvate dehydrogenase $\alpha 1$ protein.						
Background		The pyruvate dehydrogenase complex catalyzes the conversion of pyruvate and CoA into acetyl-CoA and CO ₂ in the presence of NAD ⁺ . Acetyl-CoA then goes into the citric acid cycle where it reacts with oxaloacetate to form citrate. The reaction of oxidative decarboxylation of pyruvate serves as a critical link between glycolysis and the citric acid cycle. In mammalian cells, the pyruvate dehydrogenase complex is located in the mitochondrial matrix (1). This complex is composed of three enzymes: pyruvate dehydrogenase (E1), dihydrolipoamide acetyltransferase (E2), and dihydrolipoamide dehydrogenase (E3). Pyruvate dehydrogenase (E1) consists of two subunits: α and β . This enzyme catalyzes the removal of CO ₂ from pyruvate. Mutations in the α subunits of pyruvate dehydrogenase (E1) lead to congenital defects that are usually associated with lactic acidosis, neurodegeneration, and early death (2).						
		Pyruvate dehydrogenase kinase 1 phosphorylates pyruvate dehydrogenase (E1) α1 subunit at Ser293 to inactivate its activity (3, 4). This phosphorylation contributes to the tumor metabolic reprogramming toward glycolysis in hypoxia by inhibiting the citric acid cycle (4).						
Background Refe	erences	1. Strumiło, S. (2005) <i>Acta Biochim Pol</i> 52, 759-64. 2. Stacpoole, P.W. et al. (2003) <i>Curr Gene Ther</i> 3, 239-45. 3. Fan, J. et al. (2014) <i>J Biol Chem</i> 289, 26533-41. 4. Chae, Y.C. et al. (2016) <i>Cancer Cell</i> 30, 257-272.						
Species Reactivit	у	Species reactivity is de	termined by testing	in at least one approv	ved application (e.g., w	estern blot).		
Western Blot Bu	ffer	IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.						
Applications Key	,	W: Western Blotting						
Cross-Reactivity	Кеу	H: Human M: Mouse R: Rat Mk: Monkey						
Trademarks and	Patents	Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc.						
		All other trademarks a more information.	re the property of t	neir respective owners	. Visit cellsignal.com/ti	ademarks for		
Limited Uses		Except as otherwise ex the following terms ap terms and conditions t separately accepted in	pressly agreed in a pply to Products pro- that are in addition writing by a legally	writing signed by a leg vided by CST, its affilia to, or different from, th authorized represent	gally authorized repres tes or its distributors. / hose contained herein, ative of CST, are rejecte	entative of CST, Any Customer's Junless ed and are of no		

force or effect.

Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.