

#8782 Store at -20C

SirT5 (D8C3) Rabbit mAb



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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB	H M R	Endogenous	30	Rabbit IgG	#Q9NXA8	23408

Product Usage Information	Application	Dilution
	Western Blotting	1:1000
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.	
Specificity / Sensitivity	SirT5 (D8C3) Rabbit mAb recognizes endogenous levels of total SirT5 protein. This antibody does not cross-react with other sirtuin proteins.	
Source / Purification	Monoclonal antibody is produced by immunizing animals with a recombinant protein specific to the full-length human SirT5 protein.	

Background

The Silent Information Regulator (SIR2) family of genes is a highly conserved group of genes that encode nicotinamide adenine dinucleotide (NAD)-dependent protein deacetylases, also known as Class III histone deacetylases. The first discovered and best characterized of these genes is *Saccharomyces cerevisiae* Sir2, which is involved in silencing of mating type loci, telomere maintenance, DNA damage response, and cell aging (1). SirT5, a mammalian homolog of Sir2, is localized to the mitochondria and has been implicated in the regulation of cell metabolism (2,3). SirT5 deacetylates carbamoyl phosphate synthetase 1 (CPS1) in the mitochondrial matrix and increases its activity in response to fasting, allowing for adaptation to increased amino acid catabolism (4). SirT5 has also been shown to deacetylate cytochrome c in the mitochondrial intermembrane space (5). In addition to its deacetylase activity, SirT5 contains lysine desuccinylase and demalonylase activity (6,7). Succinyl-lysine and malonyl-lysine modifications occur in a variety of organisms and these post-translational modifications are found on many metabolic enzymes (6-8). Like phosphorylation of serine, threonine, and tyrosine residues, lysine succinylation and malonylation induces a change of two negative charges from a +1 to a -1 charge at physiological pH, and are thought to serve similar functions in the regulation of protein activity, protein-protein interactions, and protein stability. SirT5 knockout mice show increased levels of succinyl-lysine and malonyl-lysine protein modifications in the liver, including increased succinylation of CPS1, a known target of SirT5, suggesting that SirT5 functions to regulate metabolic enzymes through its deacetylase, desuccinylase, and demalonylase activities (6,7).

Background References

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- Newman, J.C. et al. (2012) *J Biol Chem* , .
- He, W. et al. (2012) *Trends Endocrinol Metab* 23, 467-76.
- Nakagawa, T. et al. (2009) *Cell* 137, 560-70.
- Schlicker, C. et al. (2008) *J Mol Biol* 382, 790-801.
- Du, J. et al. (2011) *Science* 334, 806-9.
- Peng, C. et al. (2011) *Mol Cell Proteomics* 10, M111.012658.
- Zhang, Z. et al. (2011) *Nat Chem Biol* 7, 58-63.

Species Reactivity	Species reactivity is determined by testing in at least one approved application (e.g., western blot).
Western Blot Buffer	IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.
Applications Key	WB: Western Blotting
Cross-Reactivity Key	H: human M: mouse R: rat Hm: hamster Mk: monkey Vir: virus Mi: mink C: chicken Dm: D. melanogaster X: Xenopus Z: zebrafish B: bovine Dg: dog Pg: pig Sc: S. cerevisiae Ce: C. elegans Hr: horse GP: Guinea Pig Rab: rabbit All: all species expected

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