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# Product Data Sheet

### Acetyl coenzyme A trilithium

Cat. No.:	HY-114293A	
CAS No.:	75520-41-1	
Molecular Formula:	$C_{23}H_{35}Li_{3}N_{7}O_{17}P_{3}S$	
Molecular Weight:	827.37	
Target:	Endogenous Metabolite; Autophagy; Oxidative Phosphorylation	
Pathway:	Metabolic Enzyme/Protease; Autophagy	НО
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.	

BIOLOGICAL ACTIVITY		
Description	Acetyl-coenzyme A (Acetyl-CoA) trilithium is a membrane-impermeant central metabolic intermediate, participates in the TCA cycle and oxidative phosphorylation metabolism. Acetyl-coenzyme A trilithium regulates various cellular mechanisms by providing (sole donor) acetyl groups to target amino acid residues for post-translational acetylation reactions of proteins. Acetyl Coenzyme A trilithium is also a key precursor of lipid synthesis <sup>[1][2][3][4]</sup> .	
In Vitro	Acetyl coenzyme A trilithium increases cytoplasmic protein acetylation in starved U2OS cells while reducing starvation- induced autophagic fluxes. (U2OS cells stably expressing GFP-LC3 and are microinjected with Acetyl coenzyme A; incubated in nutrient-free conditions in the presence of 100 nM BafA1 and fixed after 3 h) <sup>[2]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.	
In Vivo	Acetyl coenzyme A trilithium blunts pressure overload-induced cardiomyopathy in a mice cardiac pressure overload model by Suppressing maladaptive autophagy <sup>[2][3]</sup> . Mice deprived of food (but with access to water ad libitum) for 24 h exhibit a significant reduction in total Acetyl coenzyme A levels in several organs, including the heart and muscles, corresponding to a decrease in protein acetylation levels. However, the same experimental conditions have no major effects on Acetyl coenzyme A concentrations in the brain and actually increase hepatic Acetyl coenzyme A and protein acetylation levels <sup>[4]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.	

### REFERENCES

[1]. Choudhary C, et al. The growing landscape of lysine acetylation links metabolism and cell signalling. Nat Rev Mol Cell Biol. 2014 Aug;15(8):536-50.

[2]. Mariño G, et al. Regulation of autophagy by cytosolic acetyl-coenzyme A. Mol Cell. 2014 Mar 6;53(5):710-25.

[3]. Zhu H, et al. Cardiac autophagy is a maladaptive response to hemodynamic stress. J Clin Invest. 2007 Jul;117(7):1782-93.

[4]. Pietrocola F, et al. Acetyl coenzyme A: a central metabolite and second messenger. Cell Metab. 2015 Jun 2;21(6):805-21.

#### Caution: Product has not been fully validated for medical applications. For research use only.

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