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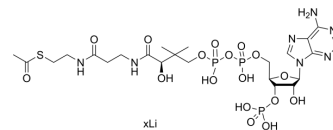
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Acetyl coenzyme A lithium

Cat. No.:	HY-113596A
CAS No.:	32140-51-5
Molecular Formula:	C ₂₃ H ₃₈ N ₇ O ₁₇ P ₃ S
Molecular Weight:	809.57
Target:	Endogenous Metabolite; Autophagy; Oxidative Phosphorylation
Pathway:	Metabolic Enzyme/Protease; Autophagy
Storage:	-20°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



BIOLOGICAL ACTIVITY

Description	Acetyl-coenzyme A (Acetyl-CoA) lithium is a membrane-impermeant central metabolic intermediate, participates in the TCA cycle and oxidative phosphorylation metabolism. Acetyl-coenzyme A lithium, 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 lithium is also a key precursor of lipid synthesis ^{[1][2][3][4]} .
IC ₅₀ & Target	Human Endogenous Metabolite
In Vitro	Acetyl coenzyme A lithium 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 lithium; incubated in nutrient-free conditions in the presence of 100 nM BafA1 and fixed after 3 h) ^[2] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Acetyl coenzyme A lithium blunts pressure overload-induced cardiomyopathy in a mice cardiac pressure overload model by Suppressing maladaptive autophagy ^{[2][3]} . Mice deprived of food (but with access to water ad libitum) for 24 h exhibit a significant reduction in total Acetyl coenzyme A lithium 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 lithium concentrations in the brain and actually increase hepatic Acetyl coenzyme A lithium and protein acetylation levels ^[4] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Bone Res. 2024 Aug 28;12(1):49.
- Cell Rep. 2025 Jan 10;44(1):115203.
- J Cell Physiol. 2023 Feb 6.

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REFERENCES

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

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