

## Product Information

## Citrate Synthase from Porcine Heart

## C3260

Storage Temperature: 2-8 °C

## Product Description

- Enzyme Commission (EC) Number: 4.1.3.7  
CAS Number: 9027-96-7
- Molecular Weight: ~98 KDa dimer  
(49 KDa monomer)<sup>5</sup>
- Extinction Coefficient:  $E^{1\%}_{1\text{cm}} = 15.5$  (280 nm)<sup>1</sup>  
pI: 6.1-6.6<sup>2</sup>
- Synonyms: Citrate condensing enzyme,  
citrate oxaloacetate lyase

Citrate synthase catalyzes the following reaction:  
 $\text{Citrate} + \text{CoA} \rightarrow \text{Acetyl-CoA} + \text{H}_2\text{O} + \text{oxaloacetate}$

The enzyme will also react with fluoroacetate.

Propionyl-CoA only exhibits 0.1% of the activity observed with acetyl-CoA. The following  $K_M$  values have been described: citrate (0.25 mM) and CoA (0.028 mM).<sup>3</sup>

Citrate synthase does not require an activator, but is inhibited by fluoroacetyl-CoA, palmitoyl-CoA, and citroyl-CoA. The enzyme is also inhibited when acetylated by acetic anhydride or iodinated by iodine. However, sulfhydryl reagents such as iodoacetamide, N-ethylmaleimide, or ferricyanide have no effect upon the enzyme activity.<sup>3,4</sup>

## Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

## Preparation Instructions

This enzyme is soluble in water (1 mg/mL), yielding a clear solution.

## References

- Srere, P. A., Citrate-condensing enzyme, oxalacetate binary complex. Studies on its physical and chemical properties. *J. Biol. Chem.*, 241(9), 2157-2165 (1966).
- Kurz, L. C., et al., Proton uptake accompanies formation of the ternary complex of citrate synthase, oxaloacetate, and the transition state analog inhibitor, carboxymethyl-CoA. Evidence that a neutral enol is the activated form of Acetyl-CoA in the citrate synthase reaction. *Biochemistry*, 31(34), 7899-7907 (1992).
- Methods of Enzymatic Analysis, 2nd ed., vol. 1, Bergmyer, H. U., ed., Academic Press (New York, NY: 1974), pp. 443-444.
- Srere, P. A., Citrate synthase. *Meth. Enzymol.*, 13, 3-11 (1969).
- Bloxham DP, Parmelee DC, Kumar S, Wade RD, Ericsson LH, Neurath H, Walsh KA, Titani K. Primary structure of porcine heart citrate synthase. *Proc Natl Acad Sci U S A.* 1981 Sep;78(9):5381-5.

---

## Notice

We provide information and advice to our customers on application technologies and regulatory matters to the best of our knowledge and ability, but without obligation or liability. Existing laws and regulations are to be observed in all cases by our customers. This also applies in respect to any rights of third parties. Our information and advice do not relieve our customers of their own responsibility for checking the suitability of our products for the envisaged purpose.

The information in this document is subject to change without notice and should not be construed as a commitment by the manufacturing or selling entity, or an affiliate. We assume no responsibility for any errors that may appear in this document.

### Technical Assistance

Visit the tech service page at [SigmaAldrich.com/techservice](https://SigmaAldrich.com/techservice).

### Terms and Conditions of Sale

Warranty, use restrictions, and other conditions of sale may be found at [SigmaAldrich.com/terms](https://SigmaAldrich.com/terms).

### Contact Information

For the location of the office nearest you, go to [SigmaAldrich.com/offices](https://SigmaAldrich.com/offices).

The life science business of Merck operates  
as MilliporeSigma in the U.S. and Canada.

Merck and Sigma-Aldrich are trademarks of Merck KGaA, Darmstadt, Germany or its affiliates.  
All other trademarks are the property of their respective owners. Detailed information on  
trademarks is available via publicly accessible resources.

© 2002-2024 Merck KGaA, Darmstadt, Germany and/or its affiliates. All Rights Reserved.  
C3260pis Rev0224

