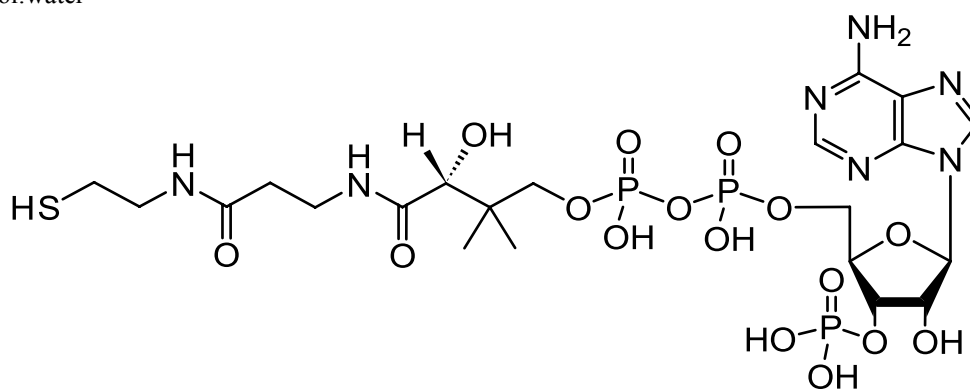


# TECHNICAL DATA SHEET

## Coenzyme A (free acid)

<b>Catalog Number</b>	870700	<b>Physical state</b>	Powder
<b>Purity</b>	> 99%	<b>Transition temp.</b>	No data
<b>CAS</b>	85-61-0	<b>CMC</b>	No data
<b>Synonyms</b>	CoA	<b>pK<sub>a</sub></b>	No data
<b>Molec. Formula</b>	C <sub>21</sub> H <sub>36</sub> N <sub>7</sub> O <sub>16</sub> P <sub>3</sub> S	<b>TLC mobile phase</b>	C:M:W*, 10:10:3, v/v Dissolve in: C:M:W*, 80:20:2, v/v
<b>MW</b>	767.115	<b>Exact Mass</b>	767.534
<b>Percent composition</b>	C 32.86% H 4.73% N 12.77% O 33.35% P 12.11% S 4.18%		
<b>Stability</b>	Store in <-20°C freezer for one year as a powder		
<b>Solubility</b>	Soluble in water, methanol:water, C:M:W* 80:20:2 to 65:25:4, v/v		
<b>Web link</b>	<a href="#">870700</a>		

\* chloroform:methanol:water



### Description:

Coenzyme A is active in the tricarboxylic acid cycle (Spry *et al*, 2008) and is an essential cofactor necessary for the metabolism of fatty acids (Leonardi *et al*, 2005; Spry *et al*, 2008). In fact, it has been reported that 9% of all known enzymatic activities use coenzyme A or a CoA thioester as a cosubstrate (Spry *et al*, 2008). For prokaryotes and eukaryotes, coenzyme A is assembled in five steps from vitamin B<sub>5</sub>, pantothenic acid. The rate limiting step is the first step and is catalyzed by pantothenate kinase (Leonardi *et al*, 2005; Spry *et al*, 2008). Mutations in pantothenate kinase can lead to an inherited disorder, neurodegeneration with brain iron accumulation (Leonardi *et al*, 2005). The biosynthetic pathway for coenzyme A is a target for antibacterial drug discovery (Leonardi *et al*, 2005; Spry *et al*, 2008).

**Product use:** A stock solution may be prepared by dissolving the CoA in distilled/deionized water or buffer that has been sparged with nitrogen to remove oxygen (heat and/or sonication may be necessary to dissolve CoA). CoA's are soluble in water to ≤ 50mg/mL. The aqueous solution should be stored at 2-8°C and used within 1 day. CoA's are not stable in aqueous solution and will degrade rapidly when stored in water. For long term storage, Avanti recommends that CoA's be stored as a powder at -20°C. The product should be stable in this form for at least 1 year.

### References:

- Leonardi R *et al* (2005) Coenzyme A: Back in action. *Prog Lipid Res.* 44(2-3):125-53
- Spry C, Kirk K, Saliba KJ (2008) Coenzyme A biosynthesis: an antimicrobial drug target. *FEMS Microbiol Rev* 32(1):56-106

**Related products:** [AcylCoenzymeA](#)  
[Sphingolipids](#)  
[LIPID MAPS Mass spectrometry lipid standards](#)

**MSDS:** Available on Avanti's website for product number 870700

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