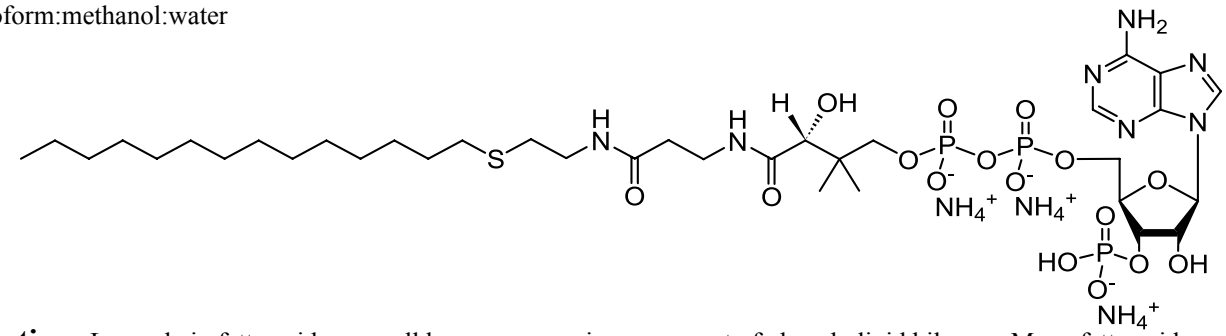
Technical Data Sheet

Tetradecanyl Coenzyme A (ammonium salt)

Catalog Number	870735	**Physical state**	Powder
Purity	> 99%	**Transition temp.**	No data
CAS	852043-48-2	**CMC**	No data
Synonyms	14:0 ether Coenzyme A; C14 ether Coenzyme A	**pK_a**	No data
Molec. Formula	$C_{35}H_{73}N_{10}O_{16}P_3S$	**TLC mobile phase**	C:M:W*, 50:40:10, v/v Dissolve in: C:M:W*, 80:20:2, v/v
MW	1,014.414	**Exact Mass**	1,014.998
Percent composition	C 41.42% H 7.25% N 13.80% O 25.22% P 9.15% S 3.16%		
Stability	Store in <-20°C freezer for one year		
Solubility	Soluble in water, methanol:water, C:M:W* 80:20:2 to 65:25:4, v/v		
Web link	870735		

* chloroform:methanol:water



Description: Long chain fatty acids are well known as a main component of phospholipid bilayers. Many fatty acids are activated to the acyl CoA's, critical for metabolism (Hamilton, 2007). Acyl coenzyme A's are the precursors of sphingolipids, the predominant stored fatty acids. Fatty acyl-coenzyme A's play a role in most fatty acid modification reactions (Leonhardt and Langerhans, 2004; Haynes *et al*, 2008), are a part of nuclear signaling (Schroeder *et al*, 2008) and are involved in post-translational protein modification and in gene regulation (Haynes *et al*, 2008; Schroeder *et al*, 2008). Because of these diverse functions, fatty acyl CoA's have been implicated in obesity (Leonhardt and Langerhans, 2004; Schroeder *et al*, 2008), cardiovascular disease, diabetes mellitis and cancer (Schroeder *et al*, 2008). Quantitating the picomole amounts of fatty acyl CoA's present in cells has proven challenging. Recently, analytical determination of subpicomole amounts of long chain fatty acyl CoA's from myristoyl- (C14:0-) to ceratoyl (C26:0-) in mammalian cells has been accomplished using HPLC and mass spectrometric methods (Haynes *et al*, 2008).

Product use: A stock solution may be prepared by dissolving the fatty acyl 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 long chain fatty acyl CoA's). Fatty acyl CoA's are soluble in water to ≤ 50 mg/mL. The aqueous solution should be stored at 2-8°C and used within 1 day. Fatty acyl CoA's are not stable in aqueous solution and will degrade rapidly when stored in water. For long term storage, Avanti recommends that fatty acyl CoA's be stored as a powder at -20°C. The product should be stable in this form for at least one year.

References:

- Haynes, CA *et al* (2008) Quantitation of fatty acyl-coenzyme As in mammalian cells by liquid chromatography-electrospray ionization tandem mass spectrometry. J Lipid Res 49: 1113-1125
- Schroeder F *et al* (2008) Role of fatty acid binding proteins and long chain fatty acids in modulating nuclear receptors and gene transcription. Lipids. 43(1):1-17
- Hamilton, JA (2007) New insights into the roles of proteins and lipids in membrane transport of fatty acids. Prostagland Leukot Essent Fatty Acids. 77(5-6):355-61
- Leonhardt M, Langhans W (2004) Fatty acid oxidation and control of food intake. Physiol Behav. 83(4):645-51

Related products: AcylCoenzymeA
Sphingolipids
LIPID MAPS Mass spectrometry lipid standards

MSDS: Available on Avanti's website for product number 870735

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