

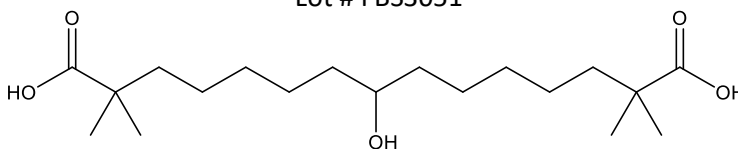
Catalog # 10-4114

Bempedoic acid

CAS# 738606-46-7

8-Hydroxy-2,2,14,14-tetramethylpentadecanedioic acid; ESP 55016; ETC-1002

Lot # FBS3051



Bempedoic acid is an inhibitor of ATP citrate lyase (ACL) and activator of AMPK used in the treatment of hypercholesterolemia.^{1,2} *In vivo*, the active molecule is the CoA ester.² Bempedoic acid requires activation by very long-chain acyl-CoA-synthetase (ACSVL1) – the absence of ACSVL1 in skeletal muscle provides a mechanistic basis for its use in statin-intolerant patients.³ LDL receptor upregulation, decreased LDL-C, and attenuation of atherosclerosis activities are independent of AMPK activation. It significantly cuts the risk of major cardiovascular events.⁴ Combination treatment of breast and pancreatic cancer cell lines with bempedoic acid and CDK4/6 inhibitors reduced cell growth and invasion.⁵ It displays anti-inflammatory activity possibly through both ACL inhibition^{6,7} and AMPK activation⁸.

- 1) Cramer *et al.* (2004), *Effects of a novel dual lipid synthesis inhibitor and its potential utility in treating dyslipidemia and metabolic syndrome*; J. Lipid Res., **45** P1289
- 2) Pinkosky *et al.* (2013), *AMP-activated protein kinase and ATP-citrate lyase are two distinct molecules targets for ETC-1002, a novel small molecule regulator of lipid and carbohydrate metabolism*; J. Lipid Res., **54** 134
- 3) Pinkosky *et al.* (2016), *Liver-specific ATP-citrate lyase inhibition by bempedoic acid decreases LDL-C and attenuates atherosclerosis*; Nat. Commun., **7** 13457
- 4) Nissen *et al.* (2023), *Bempedoic acid and cardiovascular outcomes in statin-intolerant patients*; N. Engl. J. Med., online March 4, 2023
- 5) Velez *et al.* (2023), *Combined inhibition of ACLY and CDK4/6 reduces cancer cell growth and invasion*; Oncol. Rep., **49** 32
- 6) Samsunday *et al.* (2017), *Prevention of Diet-Induced metabolic dysregulation, inflammation, and atherosclerosis in ldlr-/- mice by treatment with the ATP-Citrate lyase inhibitor bempedoic acid*; Arterioscler. Thromb. Vasc. Biol., **37** 647
- 7) Verberk *et al.* (2021), *The multifaceted therapeutic value of targeting ATP-citrate lyase in atherosclerosis*; Trends Mol. Med., **27** 1095
- 8) Filippov *et al.* (2013), *ETC-1002 regulates immune response, leukocyte homing, and adipose tissue inflammation via LKB1-dependent activation of macrophage AMPK*; J. Lipid Res., **54** 2095

PHYSICAL DATA

Molecular Weight:	344.49
Molecular Formula:	C ₁₉ H ₃₆ O ₅
Purity:	>98% by TLC
	NMR: (Conforms)
Solubility:	Soluble in DMSO (>25 mg/ml)
Physical Description:	White solid
Storage and Stability:	Store as supplied, desiccated at -20°C for up to two years from the date of purchase. Solutions in DMSO may be stored at -20°C for up to 3 months.

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