

PRODUCT INFORMATION



Enterobactin

Item No. 33394

CAS Registry No.: 28384-96-5
Formal Name: N,N',N''-[(3S,7S,11S)-2,6,10-trioxo-1,5,9-trioxacyclododecane-3,7,11-triyl]tris[2,3-dihydroxybenzamide]

Synonyms: ENT, Enterochelin

MF: C₃₀H₂₇N₃O₁₅

FW: 669.6

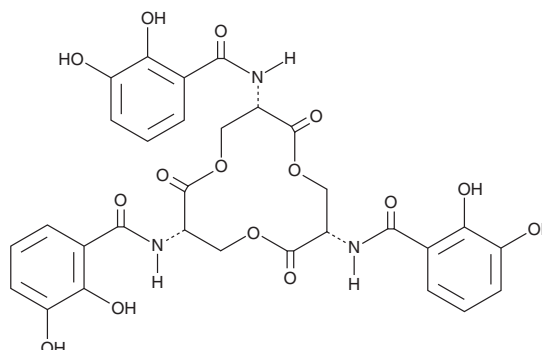
Purity: ≥95%

Supplied as: A solid

Storage: -20°C

Stability: ≥4 years

Item Origin: Synthetic



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Enterobactin is supplied as a solid. A stock solution may be made by dissolving the enterobactin in the solvent of choice, which should be purged with an inert gas. Enterobactin is slightly soluble (0.1-1 mg/ml) in acetonitrile.

Description

Enterobactin is a catecholate siderophore that has been found in *P. aeruginosa* and has iron uptake activities.^{1,2} It increases iron(III) uptake by *P. aeruginosa* grown in iron-deficient media supplemented with various concentrations of iron III chloride when used at a concentration of 4 μM.¹ Enterobactin (30 μM) increases the survival percentage of *E. coli* exposed to human lactoperoxidase and hydrogen peroxide.² *In vivo*, enterobactin secretion from *E. coli* is necessary for *E. coli* replication and invasion into the blood, as well as the spleen, liver, and lungs, of *E. coli*-infected chickens.³ Enterobactin iron-chelating and bacterial re-import activities are inhibited by albumin or neutrophil gelatinase-associated lipocalin (NGAL) binding and sequestration.^{4,5}

References

1. Poole, K., Young, L., and Neshat, S. Enterobactin-mediated iron transport in *Pseudomonas aeruginosa*. *J. Bacteriol.* **172**(12), 6991-6996 (1990).
2. Singh, V., Yeoh, B.S., Xiao, X., et al. Interplay between enterobactin, myeloperoxidase and lipocalin 2 regulates *E. coli* survival in the inflamed gut. *Nat. Commun.* **6**, 7113 (2015).
3. Caza, M., Lépine, F., and Dozois, C.M. Secretion, but not overall synthesis, of catecholate siderophores contributes to virulence of extraintestinal pathogenic *Escherichia coli*. *Mol. Microbiol.* **80**(1), 266-282 (2011).
4. Konopka, K. and Neilands, J.B. Effect of serum albumin on siderophore-mediated utilization of transferrin iron. *Biochemistry* **23**(10), 2122-2127 (1984).
5. Goetz, D.H., Holmes, M.A., Borregaard, N., et al. The neutrophil lipocalin NGAL is a bacteriostatic agent that interferes with siderophore-mediated iron acquisition. *Mol. Cell* **10**(5), 1033-1043 (2002).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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