

Product Data Sheet

Product Name: Sedoheptulose

Cat. No.: GC80484

Chemical Properties

Cas. No. 3019-74-7

Formula $C_7H_{14}O_7$

M.Wt 210.18

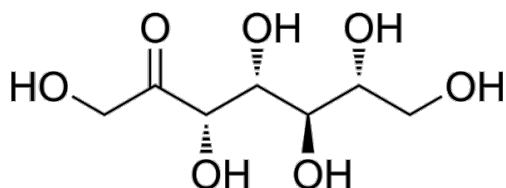
Solubility

Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Background

Sedoheptulose is a heptulose. Sedoheptulose, in the form of phosphate esters, functions as a metabolic intermediate in the pentose phosphate pathway. Sedoheptulose serves as a starting material for the chemical synthesis of pseudoaminosugars and chiral substituted furans [1].

Caution: Product has not been fully validated for medical applications. For research use only.

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In Vitro, Sedoheptulose (10% D-ribose; 4 d) is produced at 8.4 mg/mL and 12.3 mg/mL by wild-type *Bacillus subtilis* IFO 12114 and IFO 13719 T strains, respectively, when cultured at 37°C^[1]. Sedoheptulose (15% D-glucose; 4 d) is produced at 4.5 mg/mL by transketolase-deficient *Bacillus subtilis* mutant strain TK-1 when cultured at 37°C, with accumulation initiating after D-ribose (produced from glucose) is consumed, reaching ~100 mg/mL by 60 h^[1]. Sedoheptulose (10% D-glucose plus 5% D-ribose; 4 d) is produced at 25.5 mg/mL by transketolase-deficient *Bacillus subtilis* mutant strain TK-1 when cultured at 37°C, with scale-up fermentation achieving ~20-25 mg/mL accumulation^[1]. Sedoheptulose (15% D-glucose; 4 d) is produced at ~4-6 mg/mL by each of eight transketolase-deficient *Bacillus subtilis* mutant strains when cultured at 37°C^[1]. Sedoheptulose isolated from *Bacillus subtilis* mutant strain TK-1 fermentation broth is confirmed via multiple analytical methods, with 2.8 g of sedoheptulose syrup recovered and 0.63 g of crystalline sedoheptulosan monohydrate produced from 1.0 g of this syrup^[1].

References:

[1]. Yokota A. Production of sedoheptulose by *Bacillus subtilis*. *Journal of fermentation and bioengineering*. 1993 Jan 1;75(6):409-13.

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