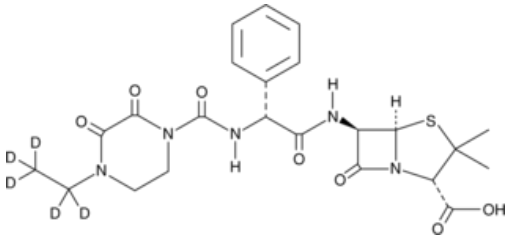
Product Data Sheet

Product Name: Piperacillin-d5
Cat. No.: GC40090

Chemical Properties

Cas. No.			
SMILES	CC1(C)[C@H](C(O)=O)N2C([C@@H](NC([C@@H](C3=CC=CC=C3)NC(N4C(C(N(C([2H])([2H])C([2H])([2H])[2H])CC4)=O)=O)=O)=O)[C@@]2([H])S1)=O		
Formula	$C_{23}H_{22}D_5N_5O_7S$	M.Wt	522.6
Solubility	DMSO: Slightly soluble,Ethanol: Slightly soluble,Methanol: Slightly soluble	Storage	-20°C, protect from light, stored under nitrogen
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

Piperacillin-d5 is intended for use as an internal standard for the quantification of piperacillin by GC- or LC-MS. Piperacillin is a broad-spectrum β-lactam antibiotic of the penicillin class. It is active against Gram-negative and Gram-positive bacteria, including Enterococcus species, E. coli, and P. mirabilis (MIC50s = 0.5-2 &#181g/ml) as well as gentamicin-susceptible and -resistant strains of P. aeruginosa (MIC50s = 8 and 125 &#181g/ml, respectively). In a mouse model of systemic infection, piperacillin is active against P. aeruginosa 46220 when used alone or in combination with tazobactam . In the same model, it is less active against P. aeruginosa 46220 DR-2, which contains constitutively active β-lactamase, when used alone than when used in combination with tazobactam (ED50s = >20 and 4.39 mg/animal, respectively). Formulations containing piperacillin in combination with

tazobactam have been used in the treatment of moderate-to-severe bacterial infections.