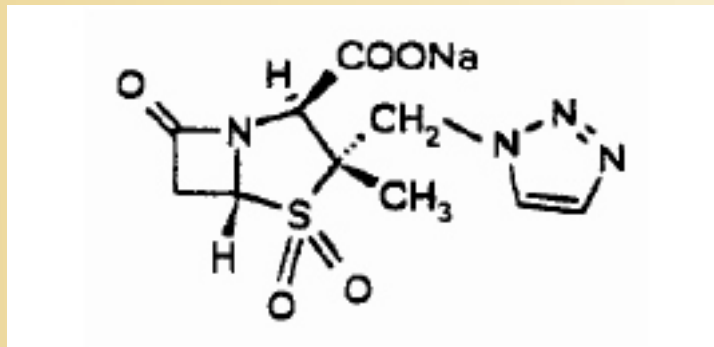


## Betalactams Piperacillin (Cas No 99497-03-7)



Betalactams Piperacillin

CAS number 9012-26-4

Piperacillin sodium is derived from D(-)- $\alpha$ -aminobenzyl-penicillin.

The chemical name of piperacillin sodium is sodium (2S,5R,6R)-6-[(R)-2-(4-ethyl-2,3-dioxo-1-piperazine-carboxamido)-2-phenylacetamido]-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylate.

The chemical formula is  $C_{23}H_{26}N_5NaO_7S$  and the molecular weight is 539.5.

Piperacillin-tazobactam is a beta-lactam/beta-lactamase inhibitor combination with a broad spectrum of antibacterial activity that includes Gram-positive and -negative aerobic and anaerobic bacteria.

Piperacillin-tazobactam retains its *in vitro* activity against broad-spectrum beta-lactamase-producing and some extended-spectrum beta-lactamase-producing Enterobacteriaceae, but not against isolates of Gram-negative bacilli harboring AmpC beta-lactamases.

Piperacillin-tazobactam has recently been reformulated to include ethylenediaminetetraacetic acid and sodium citrate; this new formulation has been shown to be compatible *in vitro* with the two aminoglycosides, gentamicin and amikacin, allowing for simultaneous Y-site infusion, but not with tobramycin. Multicenter, randomized, double-blinded clinical trials have demonstrated piperacillin-tazobactam to be as clinically effective as relevant comparator antibiotics.

Clinical trials have demonstrated piperacillin-tazobactam to be effective for the treatment of patients with intra-abdominal infections, skin and soft tissue infections, lower respiratory tract infections, complicated urinary tract infections, gynecological infections and more recently, febrile neutropenia. Piperacillin-tazobactam has an excellent safety and tolerability profile and continues to be a reliable option for the empiric treatment of moderate-to-severe infections in hospitalized patients.