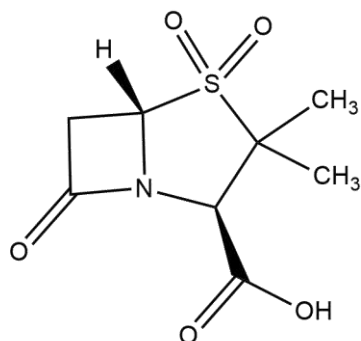


2.4. BETA- LACTAMASE INHIBITORS

These are the beta-lactamase enzyme inhibitor which generally used along with beta-lactam antibiotics to prevent the degradation of beta-lactam antibiotics.

Drugs: Sulbactam, Tazobactam, Clavulanic acid

A) Sulbactam



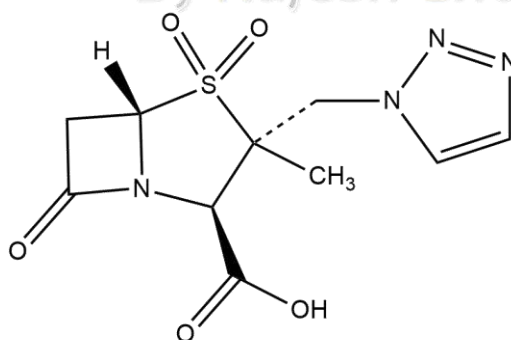
(2*R*,5*S*)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid 4,4-dioxide

Uses:

- It is broad spectrum drug effective against Gram +ve, Gram -ve, and anaerobic bacteria. Administered via intravenous route
- Used in treatment of UTI, RTI, and Post surgery infection

B) Tazobactam

Tazobactam is penicillanic acid sulfone derivative with beta-lactamase inhibitory property similar as sulbactam. It is generally used along with piperacillin sodium for treatment of bacterial infections.

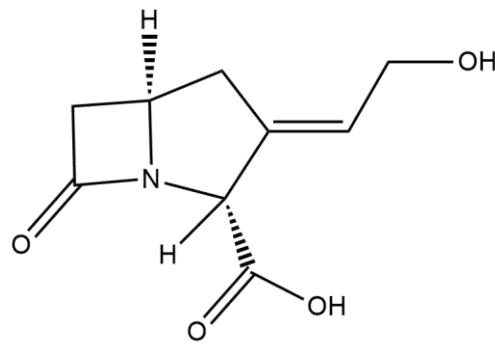


3-((1*H*-1,2,3-triazol-1-yl)methyl)-3-methyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid 4,4-dioxide

Uses:

- Administered via intravenous route
- Used in treatment of UTI, wound infection, and Post surgery infection

C) Clavulanic Acid



3-(2-hydroxyethylidene)-7-oxo-1-azabicyclo[3.2.0]heptane-2-carboxylic acid

Clavulanic acid is a semisynthetic antibiotic isolated from *Streptomyces clavuligeris*. Structurally it is a 1-oxapenam lacking the 6-acyclomino side chain of penicillins but possessing a 2 hydroxyethylidene moiety at C-2. It has weak antibacterial activity, comparable with that of 6-APA and therefore not useful as an antibiotic. But it is a potent beta-lactamase enzyme inhibitor.

Uses:

- Used along with beta lactam antibiotics
- Used in treatment of UTI, RTI, wound infection, sinusitis, and Post surgery infection

Pharmacology Concepts
By Rajesh Choudhary