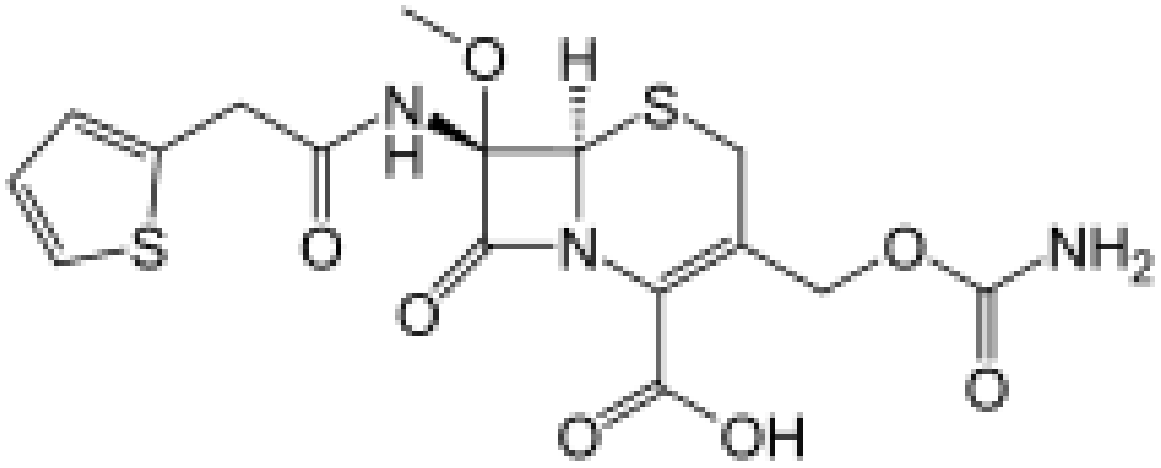
OXACEPHEM ANTIBIOTICS

PHARMACEUTICAL CHEMISTRY II

PHA387

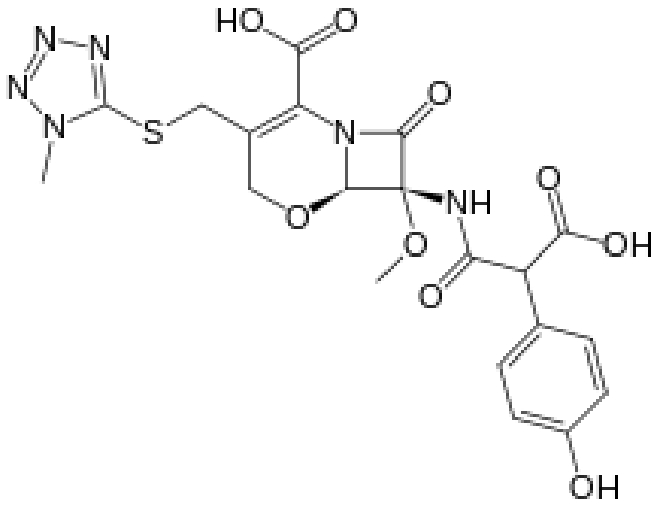
OXACEPHEM GROUP CEPHALOSPORINS

- In cephalosporins, the introduction of the **methoxy group** into **seventh-position** makes the cephalosporin molecule resistant to the β-lactamase enzyme
- **Cefoxitin** is a group of cephalosporins which are broad spectrum and also active in anaerobic bacteria.

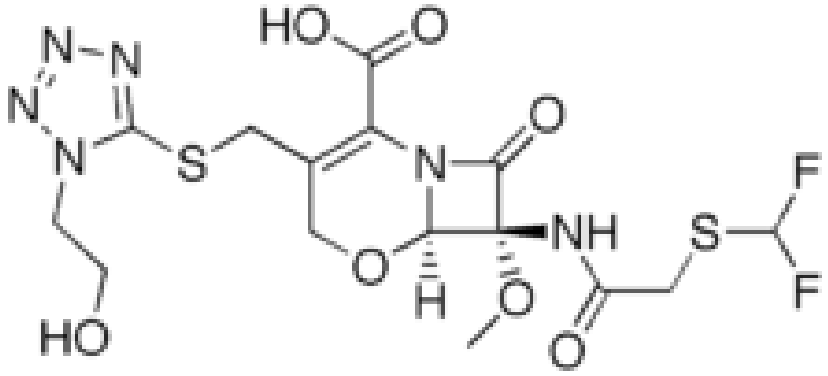


Cefoxitin

- An **oxacephem** is a molecule similar to a cephem, but with **oxygen substituted for the sulfur**. They are synthetic compounds. Examples include latamoxef (moxalactam) and flomoxef.



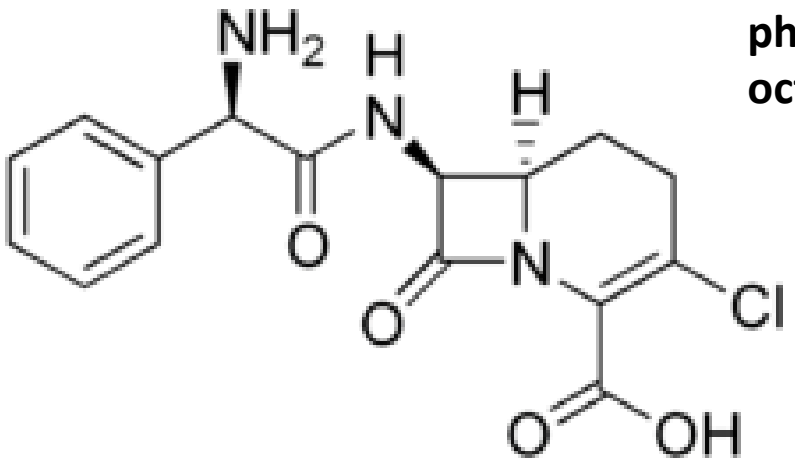
Latamoxef



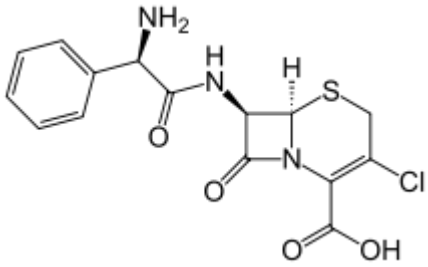
Flomoxef

CARBACEPHEM GROUP CEPHALOSPORINS

LORACARBEF Lorabid^{R}



6R,7S)-3-Chloro-7-(2-amino-2-phenyl)acetamido-8-oxo-1-azabicyclo[4,2,0]-oct-2-ene-2-carbocylic acid

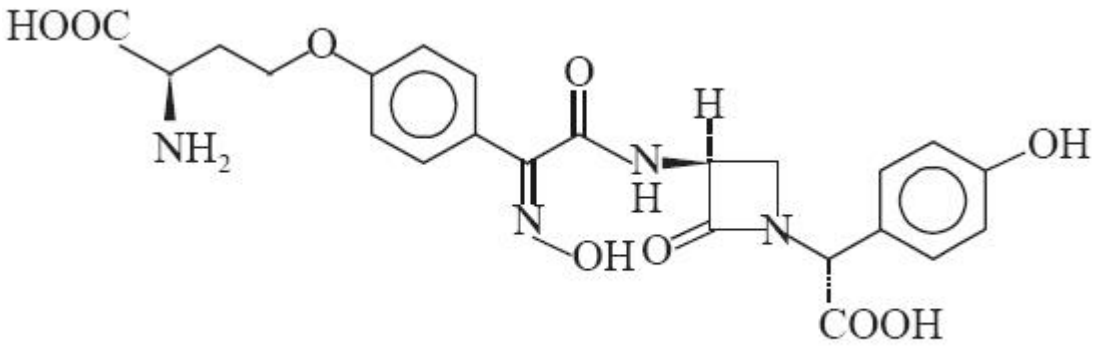


CEFACLOR

MONOBACTAMS

- **Monobactams** are β-lactam compounds wherein the β-lactam ring is alone and not fused to another ring, in contrast to most other β-lactams.

NOCARDICIN A

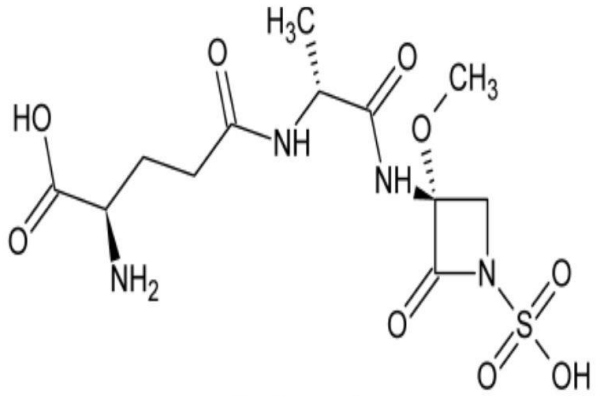


Nocardicin A

[3S-[1(S*),3R*[E(S*)]]]-3-[[[4-(3-Amino-3-carboxypropoxy)phenyl] (hydroxyimino) acetyl]amino]-a-(4-hydroxyphenyl)-2-oxo-1-azetidineacetic acid

- **Nocardicin A** is a β-lactam antibiotic included in the monobactam subclass.

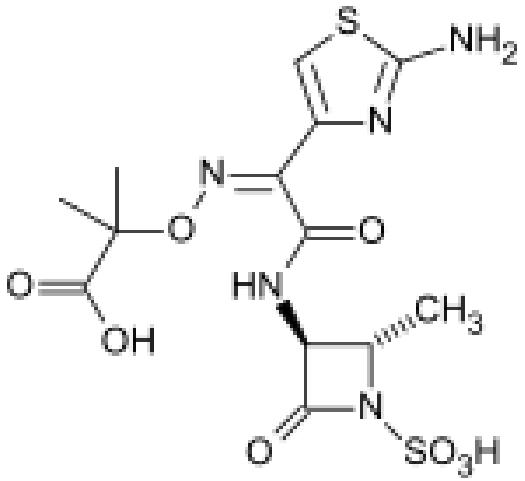
SULFAZECIN, SQ-26445 and SQ-26180 are **monobactam derivative** compounds.



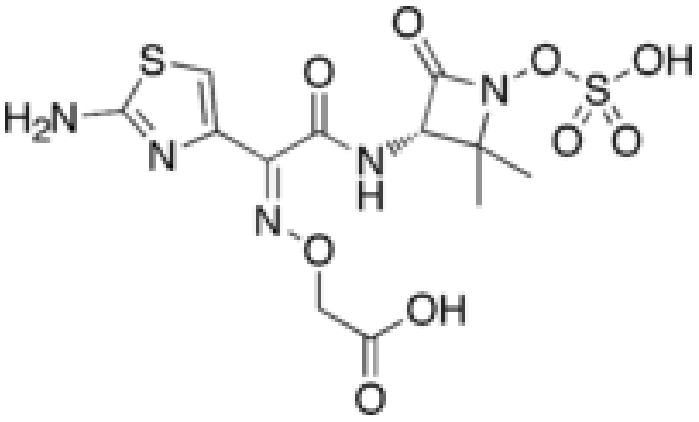
Sulfazecin

- As in penicillin and cephalosporins, **the amine group** in the **third position** was **acylated with** various **acids**. By using such acylation derivatives, a broad spectrum of antibacterial-spectrum derivatives has been developed. 3 Compound has been introduced **(Aztreonam, Carumonam and Tigemonam)**

AZTREONAM Azactam^{R}



TIGEMONAM



CARUMONAM