



**KRS Chemicals**

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**2-Mercaptobenzothiazolyl-(Z)-2-(2-aminothiazol-4-yl)-2-(2-t-butoxycarbonylprop-2-oxymino) acetate**

**Intermediates/Pharmaceutical intermediates**

CAS NO : 89604-92-2;158183-05-2

Molecular Formula :  $C_{20}H_{22}N_4O_4S_3$

**Chemical Properties**

Pale Yellow Solid

**Uses**

An intermediate for the preparation of cephalosporin derivatives.

**2-Mercaptobenzothiazolyl-(Z)-2-(2-aminothiazol-4-yl)-2-(tert-butoxycarbonyl)isopropoxyiminoacetate synthesis**

**Third Generation** Cefotaxime, **Ceftazidime**, Ceftriaxone

**Fourth Generation** Cefepime

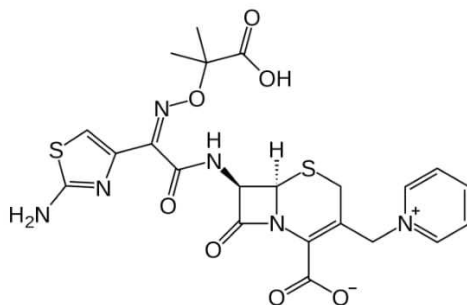
**Fifth Generation** Ceftaroline

**Generation Gram Negatives Gram Positives  $\beta$ -Lactamase Stability**

<b>1st</b>	+	+++	+/-
<b>2nd</b>	++	++	+
<b>3rd</b>	+++	+	++
<b>4th</b>	+++	++	+++
<b>5th</b>	+++	+++	++++

Ceftazidime is a new '**third generation**' cephalosporin administered intravenously or intramuscularly.

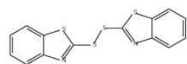
**CEFTAZIDIME**



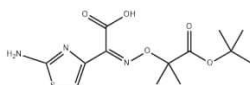
It works by fighting bacteria in your body. Ceftazidime injection is used to treat many kinds of bacterial infections, including severe or life-threatening forms.

Ceftazidime has confirmed activity against clinically relevant Gram-negative bacteria including *Citrobacter* spp., *Enterobacter* spp., *Klebsiella* spp., *Proteus* spp., *Serratia* spp., *Escherichia coli*, *Haemophilus influenzae*, *Neisseria meningitidis*, *Pseudomonas aeruginosa*, and some Gram-positive bacteria.

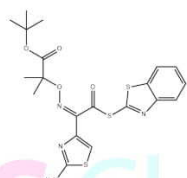




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It is thus an object of the present invention to provide reactive derivatives of 2-(2-aminothiazol-4-yl)-2-(2-tert-butoxycarbonyl-1-methylethoxy)iminoacetic acid of formula , which would be suitable for use in the manufacture of cephalosporin antibiotics ceftazidime

Cephalosporins are beta-lactam antimicrobials used **to manage a wide range of infections from gram-positive and gram-negative bacteria**. The five generations of cephalosporins are useful against skin infection, resistant bacteria, meningitis, and other infections.

**First Generation** Cefazolin

**Second Generation** Cefotetan, Cefoxitin, Cefuroxime