

## Certificate of Analysis

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**Product Name:** Ceftriaxone disodium salt

**Catalog No.:** 3732

**Batch No.:** 1

**CAS Number:** 104376-79-6

**IUPAC Name:** 7-[[[(2Z)-2-(2-Amino-4-thiazolyl)-2-(methoxyimino)acetyl]amino]-8-oxo-3-[[[(1,2,5,6-tetrahydro-2-methyl-5,6-dioxo-1,2,4-triazin-3-yl)thio]methyl]-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid disodium salt

### 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:**  $C_{18}H_{16}N_8Na_2O_7S_3 \cdot 3\frac{1}{2}H_2O$

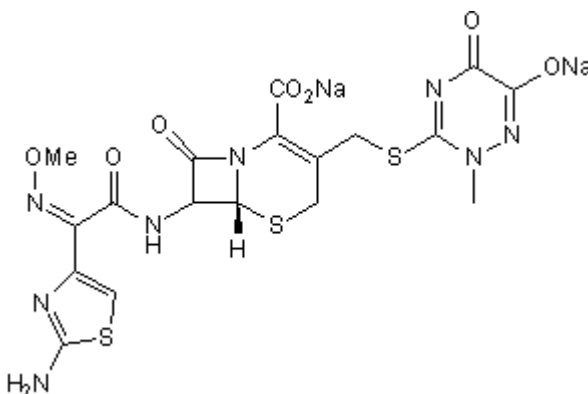
**Batch Molecular Weight:** 661.59

**Physical Appearance:** White solid

**Solubility:** DMSO to 50 mM

**Storage:** Store at +4°C

**Batch Molecular Structure:**



### 2. ANALYTICAL DATA

**HPLC:** Shows 98.7% purity

**<sup>1</sup>H NMR:** Consistent with structure

**Optical Rotation:**  $[\alpha]_D = -160$  (Concentration = 1, Solvent = Water)

**Microanalysis:**

	Carbon	Hydrogen	Nitrogen
Theoretical	32.68	3.5	16.94
Found	32.38	3.33	16.62

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**Description:**

β-lactam antibiotic. Displays neuroprotective activity in vivo via upregulation and increased activity of the EAAT2 glutamate transporter.

**Physical and Chemical Properties:**

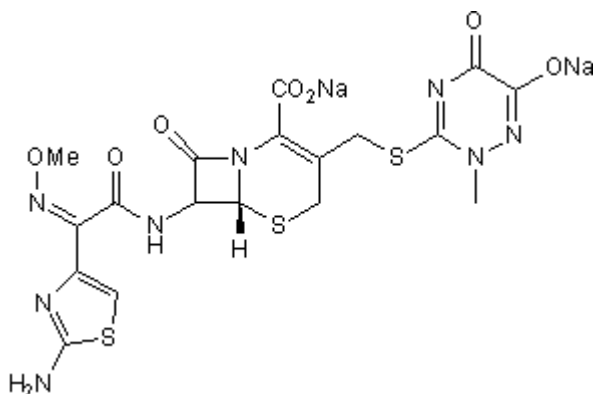
Batch Molecular Formula: C<sub>18</sub>H<sub>16</sub>N<sub>8</sub>Na<sub>2</sub>O<sub>7</sub>S<sub>3</sub>·3½H<sub>2</sub>O

Batch Molecular Weight: 661.59

Physical Appearance: White solid

**Minimum Purity:** >98%

**Batch Molecular Structure:**



**Storage:** Store at +4°C

**Solubility & Usage Info:**

DMSO to 50 mM

**Stability and Solubility Advice:**

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

**SOLIDS:** Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

**SOLUTIONS:** We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

**References:**

**Lipski et al** (2007) Neuroprotective potential of ceftriaxone in *in vitro* models of stroke. *Neuroscience* **146** 617. PMID: 17363173.

**Rawls et al** (2007) The beta-lactam antibiotic, ceftriaxone, attenuates morphine-evoked hyperthermia in rats. *Br.J.Pharmacol.* **151** 1095. PMID: 17592517.

**Rothstein et al** (2005) β-Lactam antibiotics offer neuroprotection by increasing glutamate transporter expression. *Nature* **433** 73. PMID: 15635412.

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