



## CERTIFICATE OF ANALYSIS

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### 1. Identification

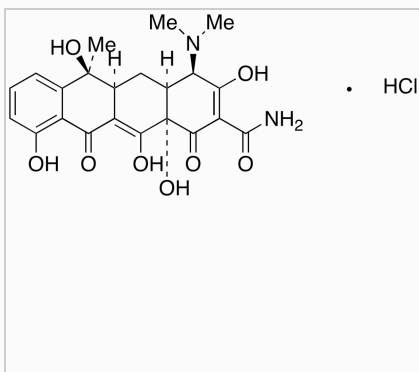
**Catalogue Number:** T291405

**CAS Number:** 23313-80-6

**Synonym:** (4R,4aS,5aS,6S,12aS)-4-(Dimethylamino)-1,4,4a,5,5a,6,11,12a-octahydro-3,6,10,12,12a-pentahydroxy-6-methyl-1,11-dioxo-2-naphthacenecarboxamide Hydrochloride; Quatrimycin Hydrochloride; [4R-(4 $\alpha$ ,4 $\alpha$  $\beta$ ,5 $\alpha$  $\beta$ ,6 $\alpha$ ,12 $\alpha$  $\beta$ )]-4-(dimethylamino)-1,4,4a,5,5a,6,11,12a-octahydro-3,6,10,12,12a-pentahydroxy-6-methyl-1,11-dioxo-2-naphthacenecarboxamide Hydrochloride; 4-Epitetracycline Hydrochloride;

**Product:** 4-epi-Tetracycline Hydrochloride

**Structure:**



**Molecular Formula:**

$C_{22}H_{24}N_2O_8 \cdot HCl$

**Molecular weight:**

444.44+ (36.46)

**Source of Product:**

N/A

**Solubility:**

DMSO (Slightly), Methanol (Slightly), Water (Slightly)

**Lot Number:** 2023-GHZ-107

**Purity:** 96%

**Shipping Condition:** This Product Is Stable To Be Shipped At Room Temperature

**Storage Condition:** -20°C

### 2. Warning

**Warning 1:**

**Warning 2:**

**Warning 3:**

### 3. Analytical Information

| Tests:            | Specifications:                       | Results:                              |
|-------------------|---------------------------------------|---------------------------------------|
| Appearance        | Pale Yellow to Very Dark Yellow Solid | Dark Yellow to Very Dark Yellow Solid |
| NMR               | Conforms to Structure                 | Conforms                              |
| HPLC Purity       | Report Result                         | 96.52% (260 nm)                       |
| MS                | Conforms to Structure                 | Conforms                              |
| Chloride Content  | Report Result                         | 7.3%                                  |
| Specific Rotation | Report Result                         | -292.2° (c = 0.1, Methanol)           |

**Additional Information:** N/A

Purity is based on the analytical results of the tests performed. NMR and Elemental Analysis (if available) may have an accuracy of  $\pm 2\%$ . Isotopic purity is based on mass distribution observed. The contents of the specifications are subject to change without advance notice, and the specification values displayed here are the most up to date values.

### 4. Signatures

| Reviewed By                                                                       | Reviewed By                                                                       | C of A Approved By                                                                | Test Date | Retest Date |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------|-------------|
| Henry Tieu                                                                        | Toni Rantanen                                                                     | Chanell Chu                                                                       | 3/21/2023 | 3/19/2027   |
|  |  |  |           |             |