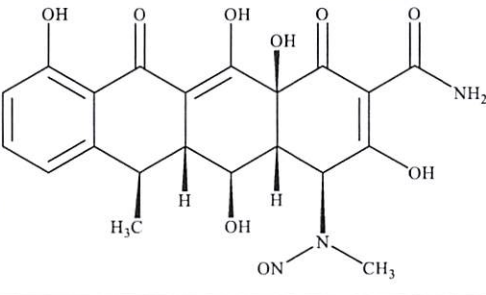


Certificate of Analysis



Certificate No.: 20240223017

Date: February 23, 2024

Retest date: February 21, 2027

Compound Name:	<i>N</i>-Nitroso-<i>N</i>-Desmethyl Doxycycline	
Synonyms:	(4 <i>S</i> ,4 <i>aR</i> ,5 <i>S</i> ,5 <i>aR</i> ,6 <i>R</i> ,12 <i>aS</i>)-3,5,10,12,12 <i>a</i> -pentahydroxy-6-methyl-4-(methyl(nitroso)amino)-1,11-dioxo-1,4,4 <i>a</i> ,5,5 <i>a</i> ,6,11,12 <i>a</i> -octahydrotricyclic-2-carboxamide	
TLC Catalogue Number:	D-1810	
CAS Number:	N/A	
Molecular Weight:	459.41	
Molecular Formula:	C ₂₁ H ₂₁ N ₃ O ₉	
Source:	TLC Pharmaceutical Standards	
Source Lot No.:	6042-073A4	
Storage Conditions:	Store at 2-8 °C	
Solubility:	Methanol, DMSO	

Test Description	Specifications	Results
Visual Description	Brown solid	Conforms
Identification		
MS	Conforms to structure	Conforms
¹ H NMR	Conforms to structure	Conforms
Purity (HPLC)	Not less than 95.0%	96.8%
Impurity (HPLC)	RT 6.21, 0.25%; RT 11.75, 0.45%; RT 18.85, 1.21%	
Residue (TGA at 800 °C)	N/A	0.7%
Residual Solvents (NMR)	0.2% acetonitrile	
Assay (qNMR)	Not less than 80.0%	85.6%
Recommendation:	Release. The compound is an <i>N</i> -Nitroso product. Avoid using metal spatula and applying pressure. Wear proper personal protective equipment when handling. It contains 0.5% Doxycycline (RT 11.75, TLC No. D-1814) according to its HPLC.	

Name	Department	Signature	Date
Reviewed and approved by:	Quality Control		02/26/2024
Approved by:	Quality Assurance		02/26/2024

Attachments: HPLC, MS, NMR and TGA spectra.