

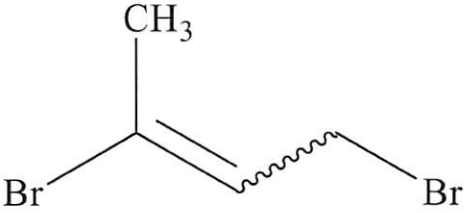
Certificate of Analysis

Certificate No.: 20231208001

Date: December 8, 2023

Retest date: December 4, 2024

Compound Name: Brivudine Impurity 6 (Mixture of Isomers)	
Synonyms:	1,3-dibromobut-2-ene
TLC Catalogue Number:	B-087015
CAS Number:	64930-16-1
Molecular Weight:	213.90
Molecular Formula:	C ₄ H ₆ Br ₂
Source:	TLC Pharmaceutical Standards
Source Lot No.:	3917-037A7
Storage Conditions:	Protect from light, store at -20 °C
Solubility:	Methanol, Ethanol, Acetonitrile



Test Description	Specifications	Results
Visual Description	Pale yellow liquid	Conforms
Identification		
IR	Conforms to structure	Conforms
MS	Conforms to structure	Conforms
¹ H NMR	Conforms to structure	Conforms
Purity (HPLC)	Not less than 95.0%	96.9%
Impurity (HPLC)	RT 2.60, 0.21%; RT 6.55, 0.16%; RT 7.22, 2.48%	
Water Content (KF)	N/A	0.1%
Residual Solvents (NMR)	No residual solvent	
Assay (%)	Not less than 90.0%	96.8%
Recommendation:	Release. The compound contains 2.5% (<i>Z</i>)-1,2-dibromo-2-butene (RT 7.22), 22.6% (<i>E</i>)-Isomer (RT 7.51) and 74.3% (<i>Z</i>)-Isomer (RT 8.06) according to its HPLC, GC-MS and proton NMR.	

Name	Department	Signature	Date
Reviewed and approved by:	Quality Control	<i>Kelin Zhu</i>	12/11/2023
Approved by:	Quality Assurance	<i>Z. Song</i>	12/11/2023

Attachments: HPLC, IR, MS and NMR spectra.