

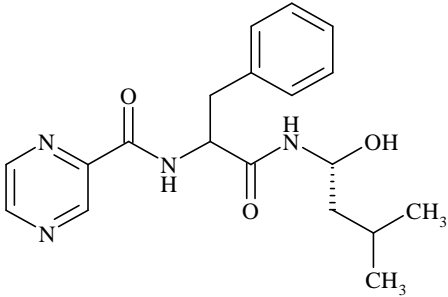
## Certificate of Analysis

Certificate No.: **20150309B**

Date: March 9, 2015

Retest date: March 2018

<b>Compound Name:</b> Bortezomib Impurity 2 (Mixture of (1S,2R)-Isomer and (1R,2R)-Isomer)	
<b>TLC Catalogue Number:</b>	B-4631
<b>CAS Number:</b>	N/A
<b>Molecular Weight:</b>	356.43
<b>Molecular Formula</b>	C <sub>19</sub> H <sub>24</sub> N <sub>4</sub> O <sub>3</sub>
<b>Source:</b>	TLC Pharmaceutical Standards
<b>Source Lot No.:</b>	1849-093A3
<b>Storage Conditions:</b>	Store at 2-8 °C.



Test Description	Specifications	Results
<b>Visual Description</b>	White to off-white solid	<b>Conforms</b>
<b>Identification</b>		
MS	Conforms to structure	<b>Conforms</b>
<sup>1</sup> H NMR	Conforms to structure	<b>Conforms</b>
<b>Purity (HPLC)</b>	Not less than 95.0%	<b>97.7%</b>
<b>Recommendation:</b>	<b>Released.</b> The compound contains 0.5% methanol according to its proton NMR and the compound contains 59.3% (R,R)-Isomer and 38.5% (S,R)-Isomer according to its HPLC.	

Name	Department	Signature	Date
Reviewed and approved by:	Analytical Services		
Approved by:	Quality Assurance		

**Attachments:** HPLC, MS and NMR spectra.