

CERTIFICATE OF ANALYSIS

20 Martin Ross Avenue, North York, ON, M3J 2K8, CANADA Tel: (416) 665-9696, Fax: (416) 665-4439 Email:orders.trc@lgcgroup.com Website: www.trc-canada.com

1. Identificati	ion							
Catalogue Number:	C9536	23	CAS	38218-55-2				
Number: Product:	C953623 Cyanocobalamin-d-carboxylic Acid		Number: Synonym:	3'-Ester with 5,6-Dimethyl-1-α-D- ribofuranosylbenzimidazole Cobinic Acid- abceg-pentamide Cyanide Phosphate Inner Salt; 3'-Ester with 5,6-Dimethyl-1-α-D- ribofuranosyl-1H-benzimidazole Cobinic Acid- abceg-pentamide Cyanide Dihydrogen Phosphate (Ester) Inner Salt; 3'-Ester with (5,6-Dimethyl-1-α-D-ribofuranosyl-1H- benzimidazole-κN3) Cobinic Acid-abceg- pentamide Co-(cyano-κC)-Dihydrogen Phosphate (Ester) Inner Salt; CBC 226; Cobalamin-d-monoacid Cyanide				
Structure: Lot Number: Shipping Condition:	H ₂ N H ₂ N H ₃ C O O O O This Pr	P_{H_3C}	Purity: Storage Condition:	Molecular Formula: C63H87CON13O15P Molecular weight: 1356.35 Source of Product: Synthetic Solubility: Methanol (Slightly), Water (Slightly) 96% -20°C				
2. Warning								
	Warning 1: Warning 2:			Warning 3:				
3. Analytical I	Informati	on						
Tests:		Specifications:		Results:				
Appearance		Red to Dark Red Solid		Red to Dark Red Solid				
FT-IR		Conforms to Structure		Conforms				
NMR		Conforms to Structure		Conforms				
HPLC Purity		Report Result		96.90% (210 nm)				
MS		Conforms to Structure		Conforms				
Elemental Analysis		Conforms		%C: 54.01, %H: 6.55, %N: 13.05				
P NMR		Conforms to Structure		Conforms				
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	Christina Gouliaras	12/24/2021	12/22/2025			
Muy	hate	Doulins					