

## Certificate of Analysis

Date of Testing: 2023-04-13 10:21:36  
Date of Next Testing: 2027-04-12 10:21:36  
Product Name: **4-O- $\beta$ -Galactopyranosyl-D-mannopyranose**  
CAS Number: 20869-27-6  
Specifications & Purity: 98%  
Lot #: H1518091  
SKU #: **G120948**  
Analysis: **210319**

Parameter	Limit Values	Result
Water by Karl Fischer	0-5 (%)	4.90 %
Carbon by Elemental Analysis(anhydrous)	41.6-42.6 (%)	42.22 %
Specific Rotation [a] <sub>20</sub> /D(9.00-11.00 mg/ml H <sub>2</sub> O)	24-30 (°)	25.00°
Purity(HPLC area)	98-100 (%)	98.00 %
Appearance (G120948)	White to Off-White Powder or Lyophilized Powder	White to Off-White Powder or Lyophilized Powder
D2O NMR spectrum	Conforms to Structure	Conforms to Structure
Solubility in H <sub>2</sub> O , Colorless,Clear to Slightly Hazy(49.00-51.00mg/ml)	pass	Pass



John Su  
QA & QC Manager