

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

## Certificate of Analysis

Date of Testing: 2023-03-17 08:46:14  
 Date of Next Testing: 2027-03-16 08:46:14  
 Product Name: **4-O- $\beta$ -Galactopyranosyl-D-mannopyranose**  
 CAS Number: 20869-27-6  
 Specifications & Purity: 98%  
 Lot #: C23111026  
 SKU #: **G120948**  
 Analysis: **183708**

| Parameter   | Limit Values                                    | Result  |
|---|---|---|
| Water by Karl Fischer   | 0-5 (%)   | 3.94 %  |
| Purity(HPLC area)   | 98-100 (%)                                      | 99.89 %   |
| Carbon by Elemental Analysis(anhydrous)   | 41.6-42.6 (%)                                   | 41.61 %   |
| Specific Rotation [a] <sub>20</sub> /D(9.00-11.00 mg/ml H <sub>2</sub> O)           | 24-30 (°)                                       | 28.80°  |
| Appearance (G120948)  | White to Off-White Powder or Lyophilized Powder | White to Off-White Powder or Lyophilized Powder |
| Solubility in H <sub>2</sub> O , Colorless,Clear to Slightly Hazy(49.00-51.00mg/ml) | pass  | Pass  |
| D <sub>2</sub> O NMR spectrum   | Conforms to Structure                           | Conforms to Structure                           |



John Su  
QA & QC Manager