

# BIOSPECTRA

100 Majestic Way, Bangor, PA 18013 / [www.biospectra.us](http://www.biospectra.us)

Effective Date:	06 Apr 2021	06 Apr 2024	: Date of Next Review
Prepared By:	Jared L Lobb	19-002872 v.3.0	: Supersedes
QA/QC Approval:	Carissa McCollian	Wendy Santay	: Management Approval
Reason for Revision:	See Revision History in ensur.		

## CERTIFICATE OF ANALYSIS

### D-GALACTOSE, PLANT DERIVED

### BIO EXCIPIENT GRADE / GALP-3251-27

(HISTORICAL CODE GA3251-K025)

### LOT: GALP-0123-00110

$C_6H_{12}O_6$   $\Delta$  F.W. 180.16 g/mol.  $\Delta$  CAS# 59-23-4

Manufacturing Date: 11/16/23      Retest Date: 11/30/25

Manufacturing Site: 100 Majestic Way, Bangor PA, 18013

Packaging Date: 12/21/23      Packaging Site: 100 Majestic Way, Bangor PA, 18013

#### EP COMPENDIA

ANALYSIS	SPECIFICATION	TEST RESULT
<sup>2</sup> Acidity or Alkalinity	Passes Test	Passes Test
Appearance	White to almost white, crystalline or finely granulated powder	White to almost white, crystalline or finely granulated powder
<sup>2</sup> Appearance of Solution	Passes Test	Passes Test
<sup>1</sup> Assay	<sup>3</sup> 98.0%-102.0%	99.7%
<sup>2</sup> Identification A	Conforms to Reference	Conforms to Reference
<sup>1</sup> Identification B	Passes Test	Passes Test
<sup>2</sup> Identification C	Passes Test	Passes Test
<sup>2</sup> Microbial Content	TAMC $\leq 100$ CFU/g	$<10$ CFU/g
Proteins	$\leq 0.1$ mg/mL	$<0.1$ mg/mL
	Sum of Impurities A and B	$\leq 1.0\%$ 0.05%
<sup>1</sup> Related Substances	Unspecified Impurities	$\leq 0.3\%$ $<0.05\%$
	Total Impurities	$\leq 2.0\%$ 0.13%
Sulfated Ash	$\leq 0.1\%$	$<0.1\%$
<sup>2</sup> Water	$\leq 1.0\%$	0.2%

## NF COMPENDIA

ANALYSIS	SPECIFICATION	TEST RESULT
<sup>2</sup> Acidity	Passes Test	Passes Test
<sup>2</sup> Appearance of Solution	Passes Test	Passes Test
<sup>1</sup> Assay	98.0 – 102.0%	99.7%
Barium	Passes Test	Passes Test
<sup>2</sup> Identification A	Conforms to Reference	Conforms to Reference
<sup>1</sup> Identification B	Passes Test	Passes Test
<sup>2</sup> Identification C	Passes Test	Passes Test
<sup>1</sup> Limit of Lead	≤ 0.5 ppm	<0.005 ppm
	<i>Escherichia coli</i>	Absent
	<i>Pseudomonas aeruginosa</i>	Absent
<sup>2</sup> Microbial	<i>Salmonella species</i>	Absent
Content	<i>Staphylococcus aureus</i>	Absent
	TAMC	<sup>3</sup> ≤ 100 CFU/g
	TYMC	≤ 100 CFU/g
	Lactose and 1,6-galactosyl-galactose	≤ 0.6%
	Galacturonic Acid	≤ 0.6%
	Dextrose	≤ 0.6%
<sup>1</sup> Related	Tagatose	≤ 0.6%
Substances	Dulcitol	≤ 0.6%
	Arabinose	≤ 0.6%
	Any Unspecified Impurity	≤ 0.2%
	Total Impurities	≤ 1.0%
Residue on Ignition	≤ 0.1%	<0.1 %
Optical Rotation, Specific Rotation @ 20°C	+78.0° to +81.5°	+80.6°
<sup>2</sup> Water	≤ 1.0%	0.2%

## ADDITIONAL ANALYSES

ANALYSIS	SPECIFICATION	TEST RESULT
Endotoxins	$\leq 2.5$ EU/g	1.6 EU/g
<sup>1</sup> Glucose	$\leq 0.1\%$	<0.05%
Aluminum (Al)	$\leq 400$ ppb	<400 ppb
Cadmium (Cd)	$\leq 10$ ppb	<6 ppb
Cobalt (Co)	$\leq 50$ ppb	<5 ppb
Chromium (Cr)	$\leq 50$ ppb	<50 ppb
Copper (Cu)	$\leq 25$ ppb	<25 ppb
Iron (Fe)	$\leq 200$ ppb	<200 ppb
Trace Metals		
Manganese (Mn)	$\leq 25$ ppb	<25 ppb
Molybdenum (Mo)	$\leq 50$ ppb	<50 ppb
Nickel (Ni)	$\leq 50$ ppb	<20 ppb
Selenium (Se)	$\leq 50$ ppb	<50 ppb
Vanadium (V)	$\leq 50$ ppb	<10 ppb
Zinc (Zn)	$\leq 200$ ppb	<200 ppb
<sup>1</sup> Residual Ethanol	$\leq 500$ ppm	<240 ppm
<sup>1</sup> Residual Isopropanol	$\leq 5000$ ppm	<2550 ppm
<sup>1</sup> Residual Methanol	$\leq 100$ ppm	<80 ppm
<sup>1</sup> Residual Methyl Isobutyl Ketone	$\leq 500$ ppm	<250 ppm

COUNTRY OF ORIGIN: U.S.A.

TEST METHOD REFERENCE: DCN: 18-002374

<sup>1</sup>Alternate Validated Method

<sup>2</sup>Analyses are Harmonized

<sup>3</sup>Specification is more stringent than Compendia Monograph

INTENDED USE: Material represented by this Certificate of Analysis is suitable for use as an excipient. It is manufactured in accordance with the ICH Q7 Good Manufacturing Practice Guide. The material represented by this Certificate of Analysis is not suitable to be used as an Active Pharmaceutical Ingredient, Drug Product or Household Item.

Prepared by: Zaive Ragin Date: 1/29/24 Job Title: QA Tech 1

Reviewed by: Janet Bligh Date: 1/29/24 Job Title: QA Mater. Disp. Supervisor

