



Certificate of Analysis

D-(+)- Trehalose Dihydrate

Catalog No. TDH033

Lot No. 40901T1107

Expiration Date: 04 Sept., 2014

CAS No. 6138-23-4

Formula: $C_{12}H_{22}O_{11} \cdot 2H_2O$

Formula Weight: 378.3

Life Sciences Advanced Technologies' molecular biology grade trehalose is a high molecular-weight, non-reducing disaccharide produced from cassava starch through a proprietary bioconversion process. This highly purified preparation is uniquely suitable for use as a buffer component in many molecular biology applications, including isothermal and temperature-cycled nucleic acid amplification. It also imparts physical and chemical stability to nucleic acid modifying enzymes, other biomolecules, and intact cellular structures while at ambient or ultra-cold temperatures as well as when freeze-dried.

There are no ingredients or reagents of animal origin used in the bioconversion or purification of this product.

TEST	SPECIFICATION	RESULTS
Appearance	White crystalline powder	Conforms
Solubility	Clear, colorless solution @ 50mg/ml water	Conforms
Water (Karl Fischer)	9% - 11%	9.12
Optical rotation	+174° to +182° (C=7)	181.39°
Purity by HPLC using pulsed Amperometric detection	> 99%	99.8%
pH of 10% solution	5.0 – 6.7	5.9
RNase in 1M solution	Equivalent to ≤ 0.005 units/L of RNase 1A	Negative
DNase in 1M solution	Equivalent to ≤ 0.05 units/ml of DNase 1	Negative
Endotoxin	≤ 0.25 EU/mL of 1.0 M solution	0.03125 EU/mL of 1M solution
Residue on ignition	$\leq 0.02\%$	$< 0.02\%$
Trace Metal content:		
Iron	≤ 1 ppm	0.356 ppm
Copper	≤ 1 ppm	< 0.007 ppm
Nickel	≤ 1 ppm	< 0.016 ppm
Zinc	≤ 1 ppm	< 0.08 ppm
Cobalt	≤ 1 ppm	0.0047 ppm
Cadmium	≤ 1 ppm	0.0006 ppm
Manganese	≤ 1 ppm	0.0057 ppm
Arsenic	≤ 1 ppm	0.0108 ppm
Lead	≤ 1 ppm	0.0013 ppm
Barium	≤ 1 ppm	0.0038 ppm
Calcium	< 10 ppm	< 2.4 ppm
Bacteria, viable counts	≤ 25 CFU / gram	< 10 CFU per gram
Yeast & mold	≤ 25 CFU / gram	< 10 CFU per gm
Shelf-life:	3 years from date of assay.	

Approved by: _____

Quality Control

Date: _____

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