



# Certificate of Analysis

## D-(+)- Trehalose Dihydrate

Catalog No. TDH033

Lot No. 61821T0905

Expiration Date: 05 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%	9.29%
Optical rotation	+174° to + 182° (C=7)	181.91°
Purity by HPLC using pulsed Amperometric detection	> 99%	99.7%
pH of 10% solution	5.0 – 6.7	6.6
RNase in 1M solution	Equivalent to $\leq 0.005$ units/L of RNase 1A	Pass
DNase in 1M solution	Equivalent to $\leq 0.05$ units/ml of DNase 1	Pass
Endotoxin	$\leq 0.25$ EU/mL of 1.0 M solution	<0.03 EU/mL of 1M solution
Residue on ignition	$\leq 0.02\%$	< 0.02%
Trace Metal content:		
Iron	$\leq 1$ ppm	0.29 ppm
Copper	$\leq 1$ ppm	0.0048 ppm
Nickel	$\leq 1$ ppm	0.0083 ppm
Zinc	$\leq 1$ ppm	0.088 ppm
Cobalt	$\leq 1$ ppm	0.004 ppm
Cadmium	$\leq 1$ ppm	<0.0007 ppm
Manganese	$\leq 1$ ppm	0.0135 ppm
Arsenic	$\leq 1$ ppm	<0.0076 ppm
Lead	$\leq 1$ ppm	0.0019 ppm
Barium	$\leq 1$ ppm	0.0048 ppm
Calcium	< 10 ppm	3.49 ppm
Bacteria, viable counts	$\leq 25$ CFU / gram	< 10 CFU per gram
Yeast & mold	$\leq 25$ CFU / gram	< 10CFU per gm
Shelf-life:	3 years from date of assay.	

Approved by: \_\_\_\_\_  
Quality Control

Date: \_\_\_\_\_

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