



## Certificate of Analysis:

### Biotech hyaluronic acid (AH100A)

Hyaluronic acid Powder Min. 95% Food grade 800,000~1,500,000 Da				
Product Code :			1201173	
Certificate of Analysis				
Version SDS	Date	Conclusion	Written by	Sign
002	2016-11-16	Conform	C.CHANE-LAW Quality Manager	
			Validated by	Sign
			M.LEVESQUE Quality Insurance	
Manufacturing**				
Chemical name	Hyaluronic acid Na Salt			
Molecular Formula	(C14H20NO11Na)n (401.3)n			
Source	Streptococcus zooepidemicus (NCTC 7023)			
Process	Bacterial fermentation in a solution including peptone, yeast powder and glucose.			
Additives / Carrier	None			
Batch number	O-1201173-161105	Manufacture Date	2016-11	
		Best Before Date	2018-11	
Properties	Specifications		Results**	
Organoleptic				
Appearance	White powder		Complies	
Odor & taste	Characteristic taste - No aroma		Complies	
Physical and Chemical **				
pH	6.0 ~ 7.5		6.2	
Transparency (in 0.1% aq.sol)	> 99.0%		99.8%	
Ash*	≤ 13.0%		Not done	
Loss on drying	≤ 10.0%		6.6%	
Particle size	≥ 80mesh		Complies	
Stake density	≥ 0.2g/cm <sup>3</sup>		0.47 g/cm <sup>3</sup>	
Molecular weight	(0. 8~1.5)×10 <sup>6</sup> Da		0.91 x 10 <sup>6</sup> Da	
Assay**				
Hyaluronic acid (on dry basis)	≥ 95.0%		97.3%	
Glucuronic acid	≥ 46.0%		47.0%	
Microbiological **				
Total Plate Count	< 10 CFU/g		Complies	
Yeast and Mold	< 10 CFU/g		Complies	
E.coli	Negative (10g)		Complies	
S.aureus	Negative (10g)		Complies	
Salmonella	Negative (10g)		Complies	
Contaminants*/**				
Heavy metals (Pb)	≤ 10ppm		Complies	
Cadmium	≤ 0.5ppm		Complies	
Lead	≤ 2ppm		Complies	
Mercury	≤ 0.1 ppm		Complies	
Arsenic	≤ 1ppm		Complies	
Chloride	≤ 0.5%		Complies	
Shelf Life	2 years			
Allergens**	Certified in compliance with Regulation 1169/2011/EC			
Ionisation**	Certified in compliance with Regulation 1999/2/CE & 1999/3/EC.			
TSE/BSE**	Certified in compliance with Regulation 999/2001/EC			
Nanomaterials**	Certified in compliance with Decree 2012/232 & Decree dated August 6th, 2012			
GMO**	Certified in compliance with Regulation 1829/2003/EC & 1830/2003/EC			