

Gracefruit Limited
209 Glasgow Road
Longcroft
Bonnybridge
FK4 1QQ

CERTIFICATE OF ANALYSIS 18-E062132

Product Name: Low Molecular Weight Sodium Hyaluronate Standard: SF/JS ZL-001-19
(HA-TLM)

Batch No.: 1806154
Quantity: 270.638 kg

Production Date: June 15, 2018
Expiry Date: June 15, 2021

Item	Standard	Result
1. Characters	White or almost white powder or granules	Complied
2. Identification		
A. Infrared absorption	Consistent with the <i>reference spectrum</i> <i>of sodium hyaluronate</i>	Complied
B. Reaction of sodium	Positive	Complied
3. pH	6.0~7.5	6.6
4. Transparency	≥99.0%	99.7%
5. Loss on drying	≤10.0%	8.1%
6. Limiting viscosity	<17.3dl/g	17.0dl/g
7. Molecular weight	<1.00MDa	0.98MDa
8. Protein	≤0.05%	0.026%
9. Heavy metals	≤20ppm	<20ppm
10. Glucuronic acid	≥45.0%	46.4%
11. Sodium hyaluronate	≥93.0%	96.0%
12. Bacteria counts	<10cfu/g	Complied
13. Mold & Yeast	<10cfu/g	Complied
14. <i>Staphylococcus aureus</i>	Negative	Negative
15. <i>Pseudomonas aeruginosa</i>	Negative	Negative

Conclusion: up to the standard

Reported by:  2018.6.21