



## Hyaluronan Oligosaccharide 12mer sodium salt (Endotoxin Free)

Code#: CSR-11010

Product Name: Hyaluronan Oligosaccharide 12mer sodium salt

Molecular Weight: 2425.81

Storage: below 4 °C (Freezable)

Storage conditions: To avoid high temperature and high level of humidity and exposure to UV light. Preferably store in the dark.

Note: This product is Endotoxin Free (tested and certified in house). However, it is not sterilized, please use filter (ex. 0.22μm) as you need.

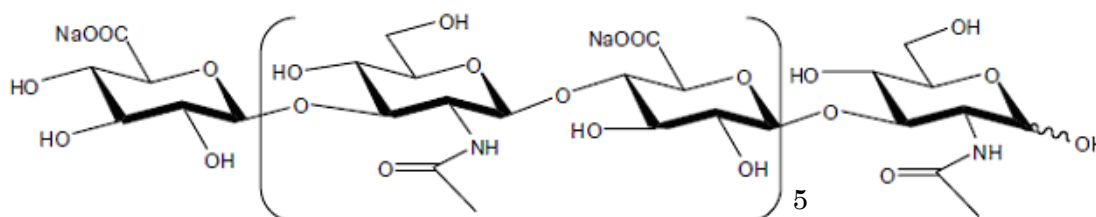
Please pay enough attention to static electricity at the weighing.

Hyaluronan oligosaccharides are known for their various activities depending on the size as reported by Stern R. et al<sup>1)</sup>. Hyaluronan oligosaccharides are made by an enzyme, hyaluronidase, from hyaluronan polymer extracted from rooster comb or isolated from fermentation products of bacteria. There is a difference between the structure of hyaluronan oligosaccharides made by mammalian enzyme and by bacterial enzyme.

Oligosaccharides made by hyaluronidase derived from bacteria are called “unsaturated” oligosaccharides because of the double bond between C-4 and C-5 position of uronic acid at their non-reducing end. On the other hands, oligosaccharides made by hyaluronidase derived from mammalian testis are called “saturated” oligosaccharide because they have no unsaturated bound.

This product is made from hyaluronan polymer purified from fermentation products of streptococcus sp, by digestion with mammalian hyaluronidase derived from ovine testis, and purified by the column chromatography<sup>2)</sup>. The structure of this product is shown in the chart below.

HA Oligosaccharide 12mer: GlcAβ1→3(GlcNAcβ1→4 GlcA)<sub>5</sub>β1→3GlcNAc



### References :

- 1) Stern R, et al.: Eur J Cell Biol, 85, 699 (2006)
- 2) Tawada A, et al.: Glycobiology, 12, 421 (2002)

NOTICE: For R&D use only. Do not use for drug, household, cosmetically and others.



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# Certification of Analysis

Code#: CSR-11010

Product Name: Hyaluronan Oligosaccharide 12mer sodium salt (Endotoxin Free)

Lot No.: 9K73

Size: 1 mg/vial

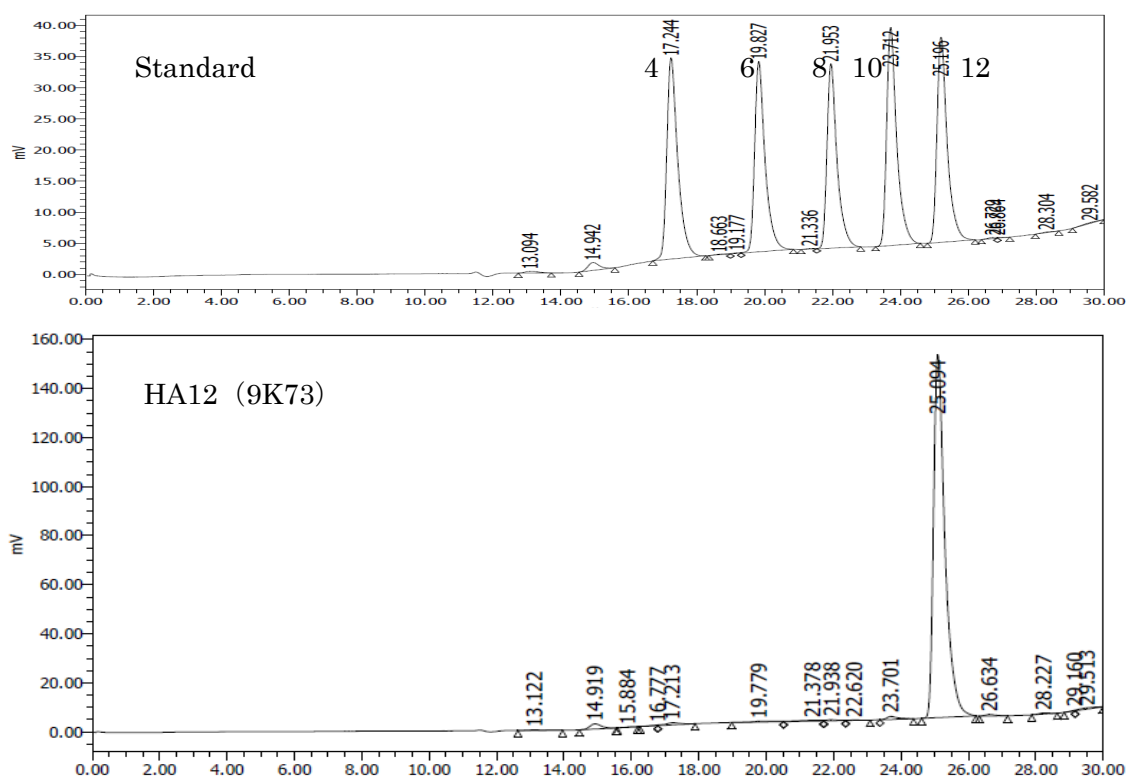
Date: 09/11/17

Item	Result	Specification	Method
Appearance	White lyophilizate	White lyophilizate	
Purity determined by HPLC See the chromatogram below	94.2%	>90.0 %	1)
Endotoxin	0.005 EU/mg NaHA	<0.100EU/mg NaHA	2)

NaHA: Sodium Hyaluronate

1) Tawada A. et al.: Glycobiology, 12, 421 (2002)

2) Seikagaku Biobusiness Corp.: Package Insert of Endospecy<sup>®</sup>



Elution profile of Hyaluronan Oligosaccharide 12mer sodium salt

Manufactured by

**PG**  
Research

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