



Hyaluronan Oligosaccharide assortment (HA4, HA6, HA8, HA10, HA12)

Code#: CSR-93001

Product Name: Hyaluronan Oligosaccharide assortment

Size: 3mg/vial (HA4, HA6, HA8, HA10), 1mg/vial (HA12)

Molecular Weight: 820.61(HA4), 1221.91(HA6), 1623.21 (HA8), 2024.51(HA10),
2425.81 (HA12)

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 not sterilized, please use filter (ex. 0.22μm) as you need.

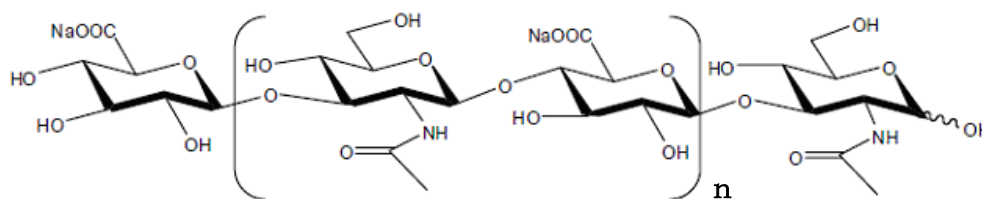
Please pay enough attention to static electricity at the weighing.

Hyaluronan oligosaccharides are known for their various activities depending on the size as reported by Stern R. et al¹⁾. 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 chromatography²⁾. The structure of this product is shown in the chart below.

HA Oligosaccharide: GlcAβ1→3(GlcNAcβ1→4 GlcA)_nβ1→3GlcNAc



(n=1~5)

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-11001

Product Name: Hyaluronan Oligosaccharide 4mer sodium salt

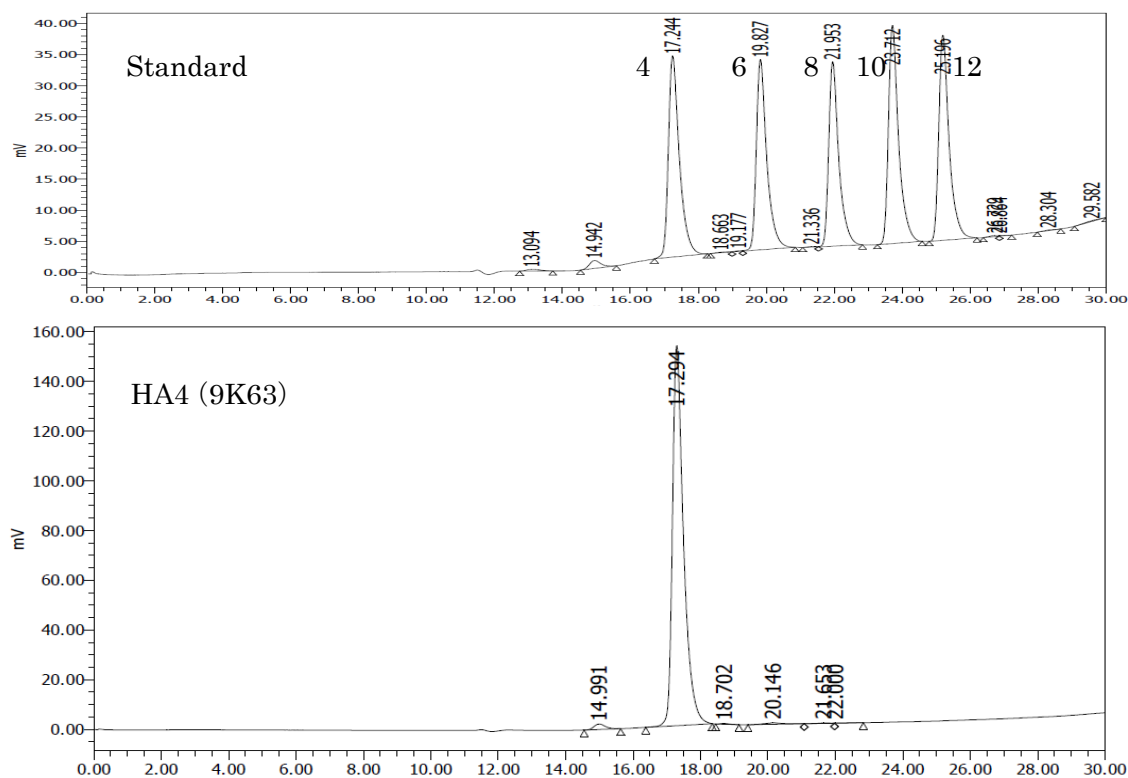
Lot No.: 9K63

Size: 3 mg/vial

Date: 09/11/16

Item	Result	Specification	Method
Appearance	White lyophilizate	White lyophilizate	
Purity determined by HPLC See the chromatogram below	97.5%	>90.0 %	1)

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



Elution profile of Hyaluronan Oligosaccharide 4mer sodium salt

Manufactured by

PG
Research

Signature :

S. Miyauchi

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Certification of Analysis

Code#: CSR-11002

Product Name: Hyaluronan Oligosaccharide 6mer sodium salt

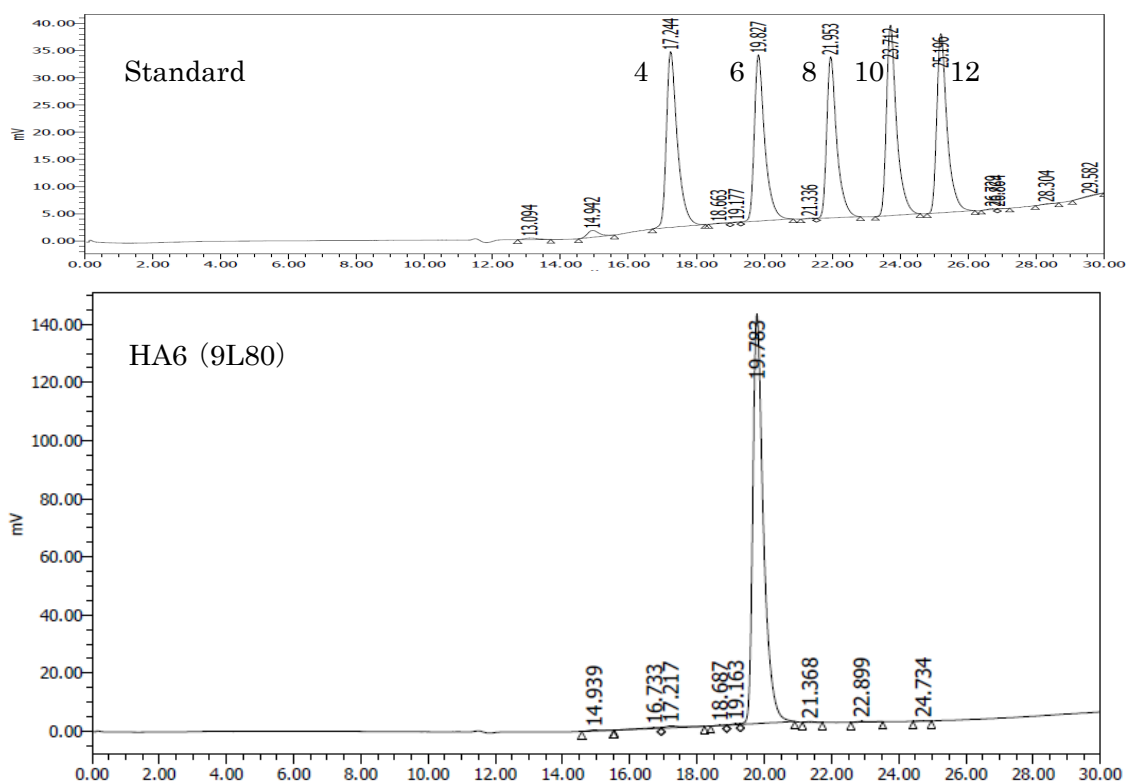
Lot No.: 9L80

Size: 3 mg/vial

Date: 10/03/10

Item	Result	Specification	Method
Appearance	White lyophilizate	White lyophilizate	
Purity determined by HPLC See the chromatogram below	98.2 %	>90.0 %	1)

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



Elution profile of Hyaluronan Oligosaccharide 6mer sodium salt

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Certification of Analysis

Code#: CSR-11003

Product Name: Hyaluronan Oligosaccharide 8mer sodium salt

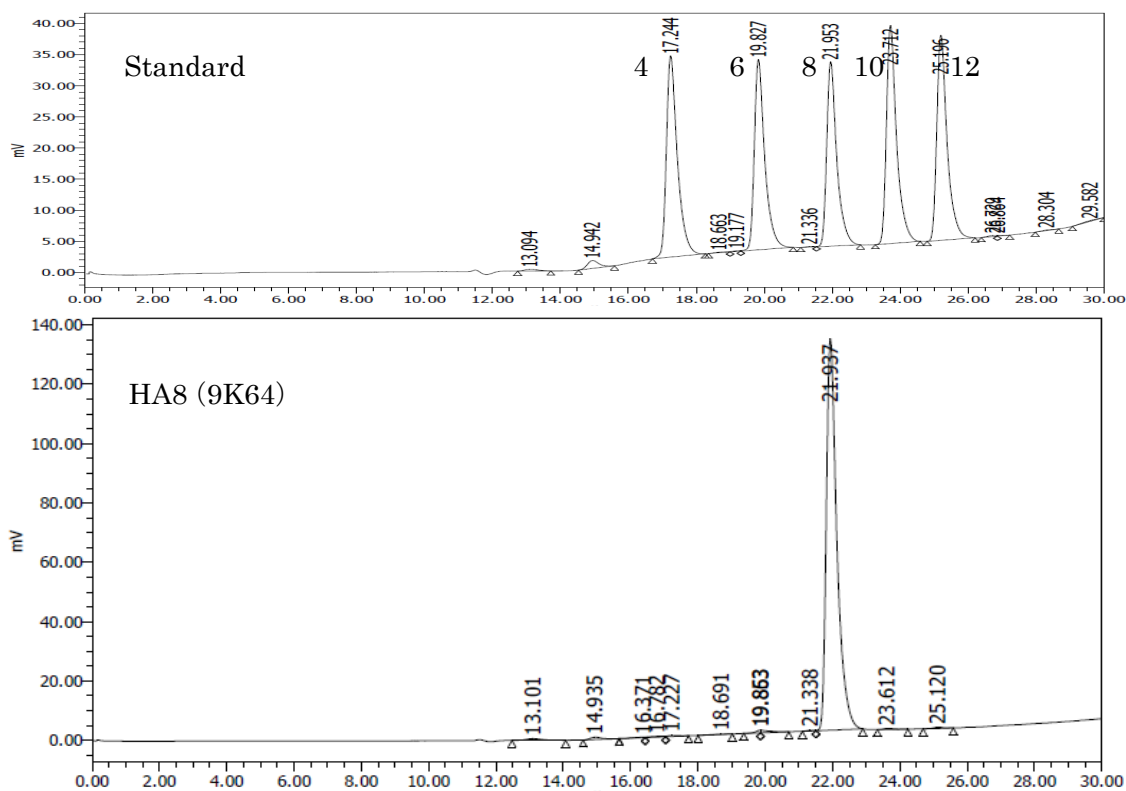
Lot No.: 9K64

Size: 3 mg/vial

Date: 09/11/16

Item	Result	Specification	Method
Appearance	White lyophilizate	White lyophilizate	
Purity determined by HPLC See the chromatogram below	96.6%	>90.0 %	1)

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



Elution profile of Hyaluronan Oligosaccharide 8mer sodium salt

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Certification of Analysis

Code#: CSR-11004

Product Name: Hyaluronan Oligosaccharide 10mer sodium salt

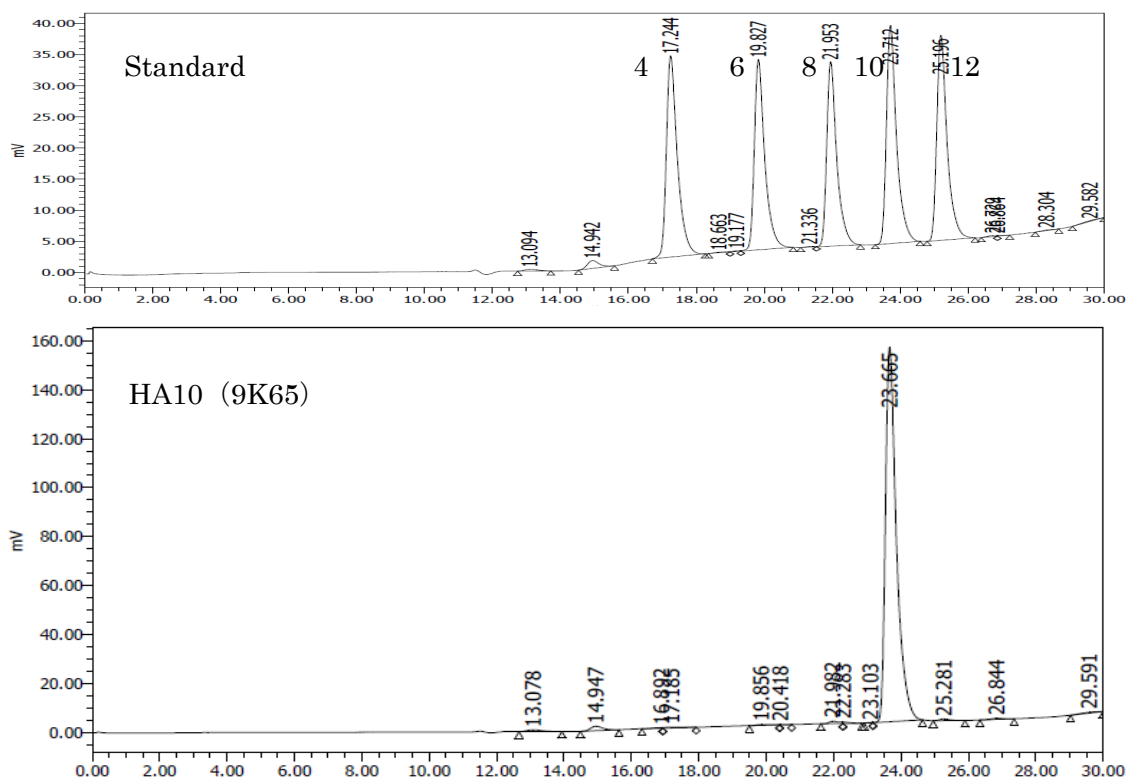
Lot No.: 9K65

Size: 3 mg/vial

Date: 09/11/16

Item	Result	Specification	Method
Appearance	White lyophilizate	White lyophilizate	
Purity determined by HPLC See the chromatogram below	95.6%	>90.0 %	1)

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



Elution profile of Hyaluronan Oligosaccharide 10mer sodium salt

Manufactured by

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Certification of Analysis

Code#: CSR-11005

Product Name: Hyaluronan Oligosaccharide 12mer sodium salt

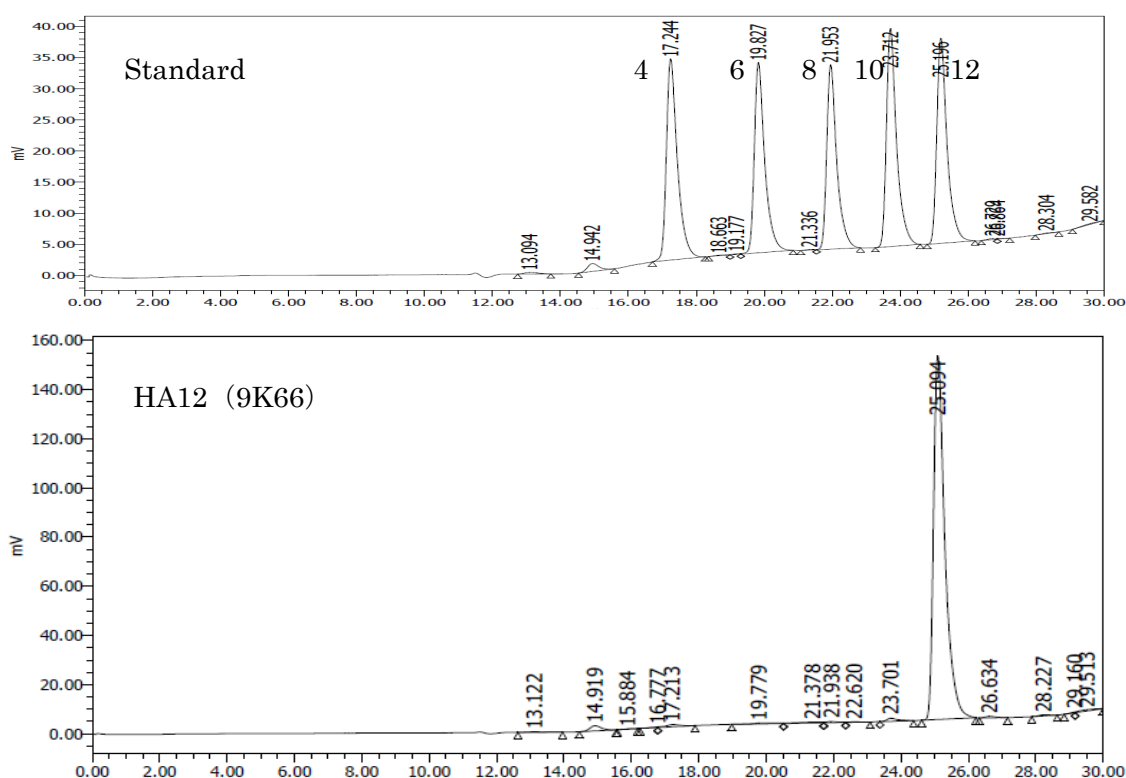
Lot No.: 9K66

Size: 1 mg/vial

Date: 09/11/16

Item	Result	Specification	Method
Appearance	White lyophilizate	White lyophilizate	
Purity determined by HPLC See the chromatogram below	94.2%	>90.0 %	1)

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



Elution profile of Hyaluronan Oligosaccharide 12mer sodium salt

Manufactured by **PG**
Research

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