

Test Report

Sample			
Name	Polyethylene glycol	Number	Welch-04-004
Weight	/	Formulation	/
Receipt Time	/	Test Time	2020/05/12-05/13
Description	\		
Test			
Test Item	Molecular weight distribution		
Standards			
Reference	Public method of polyethylene glycol	Standard Sample	Yes
Instrument			
Type	HPLC	Version	Agilent 1260

● **Chromatographic Condition:**

Column	Welch Xtimate® SEC-300(7.8×300mm, 5um)
Mobile Phase	0.1mol/L sodium nitrate solution (containing 0.02% antibacterial agent)
Wavelength	Refractive index detector Detector temperature: 35℃
Temperature	35℃
Flow Rate	1 mL/min
Injection Volume	100 µl
Notes	/

● **Preparation of Mobile Phase:**

Mobile phase: take Wahaha mineral water

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0.1mol/L sodium nitrate solution: take 8.5g sodium nitrate and 0.2g 2-methyl-4-isothiazoline-3-ketone (or other small molecule antibacterial agent with similar antibacterial effect), then dissolve it with water to have a constant volume of 1000mL. Filter by pumping and degas by ultrasound to obtain.

● **Preparation of Sample Solution:**

Polyethylene glycol 400 solution: take an appropriate amount of sample and add mobile phase to dissolve the solution to 2.0mg/mL.

Polyethylene glycol 1000 solution: take an appropriate amount of sample and add mobile phase to dissolve the solution to 2.0mg/mL.

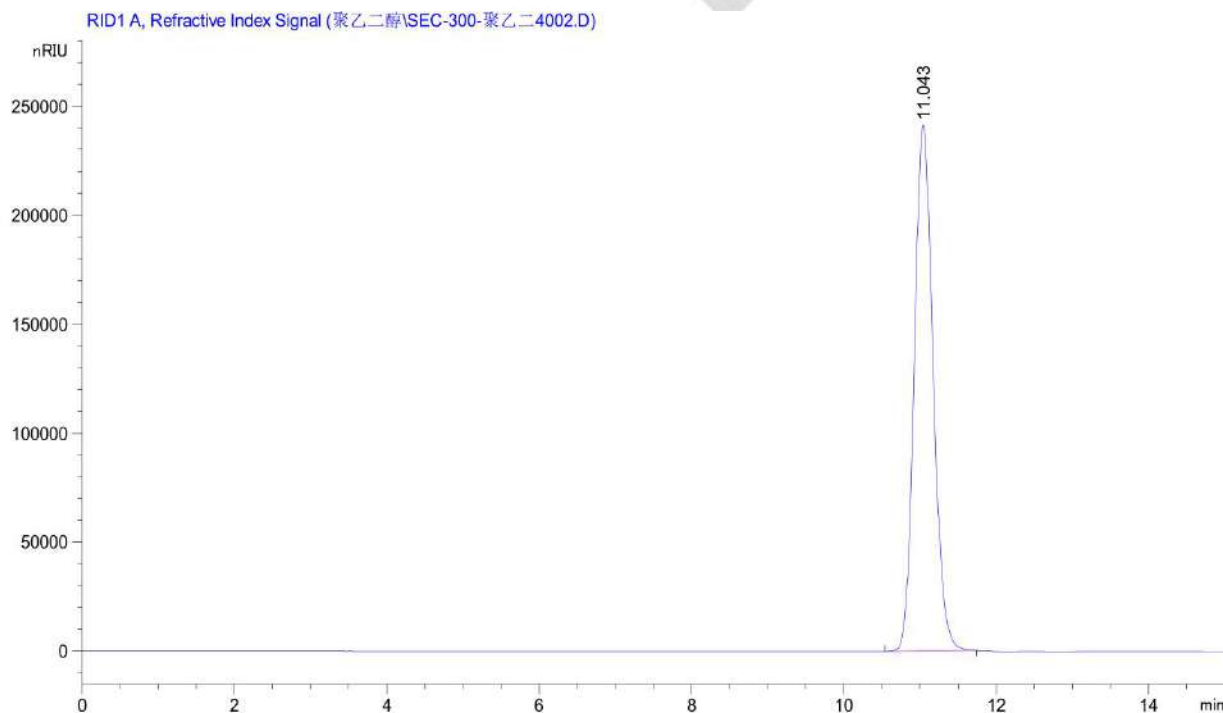
Polyethylene glycol 1500 solution: take an appropriate amount of sample and add mobile phase to dissolve the solution to 2.0mg/mL.

Polyethylene glycol 4000 solution: take an appropriate amount of sample and add mobile phase to dissolve the solution to 2.0mg/mL.

Polyethylene glycol 6000 solution: take an appropriate amount of sample and add mobile phase to dissolve the solution to 2.0mg/mL.

● **Chromatogram and Data:**

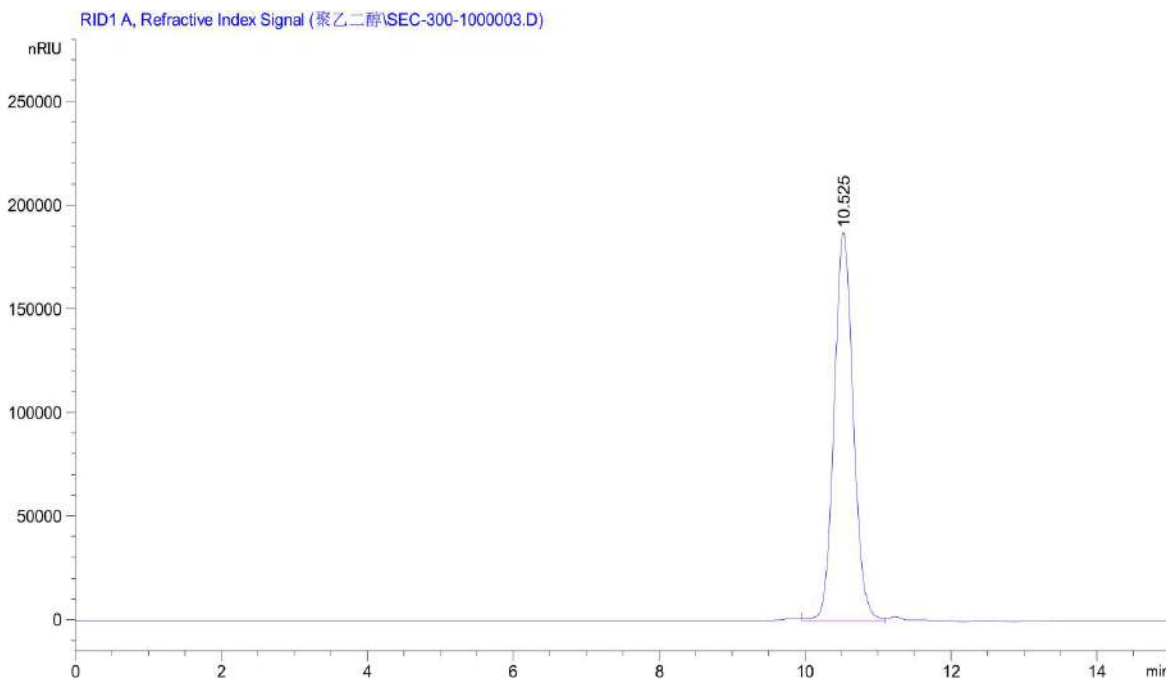
1. Polyethylene glycol 400 solution



Rt	k'	Area	Height	Symmetrical	Width	Plates	Resolution	Selectivity
[min]		[nRIU*s]	[nRIU]	factor	[min]			

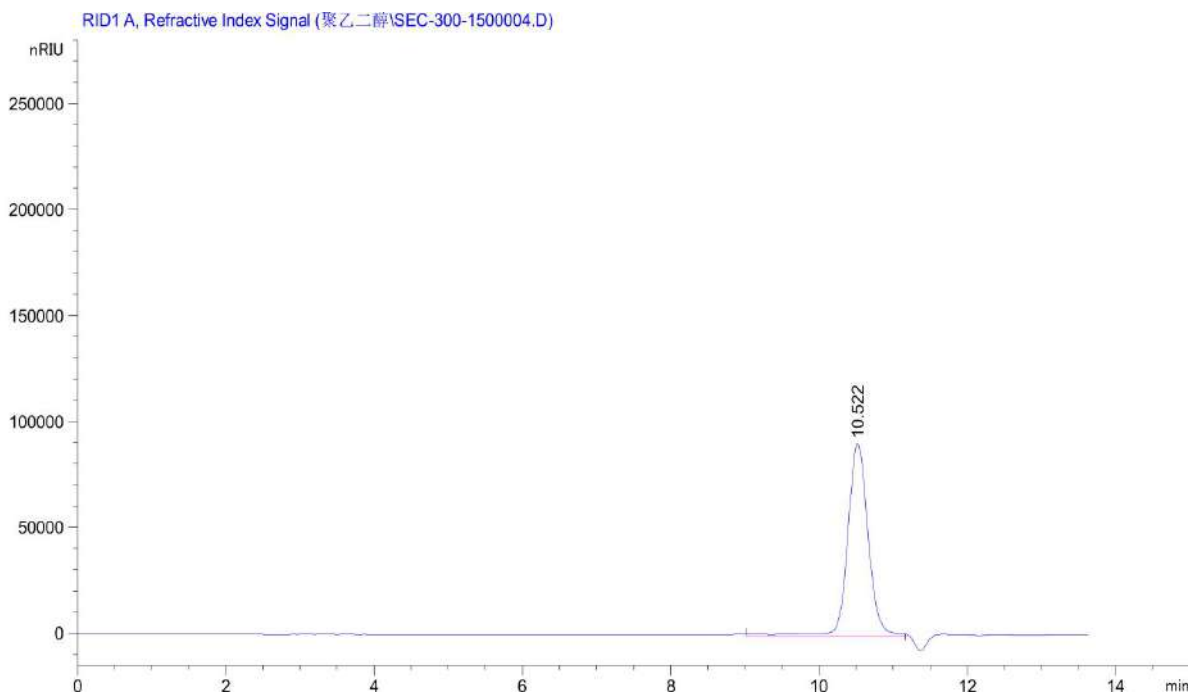
11.043 - 4.14189e6 2.41282e5 0.85 0.2640 9697 - -

2. Polyethylene glycol 1000 solution



Rt [min]	k'	Area [nRIU*s]	Height [nRIU]	Symmetrical factor	Width [min]	Plates	Resolution	Selectivity
10.525	-	3.40507e6	1.87072e5	0.91	0.2777	7960	-	-

3. Polyethylene glycol 1500 solution



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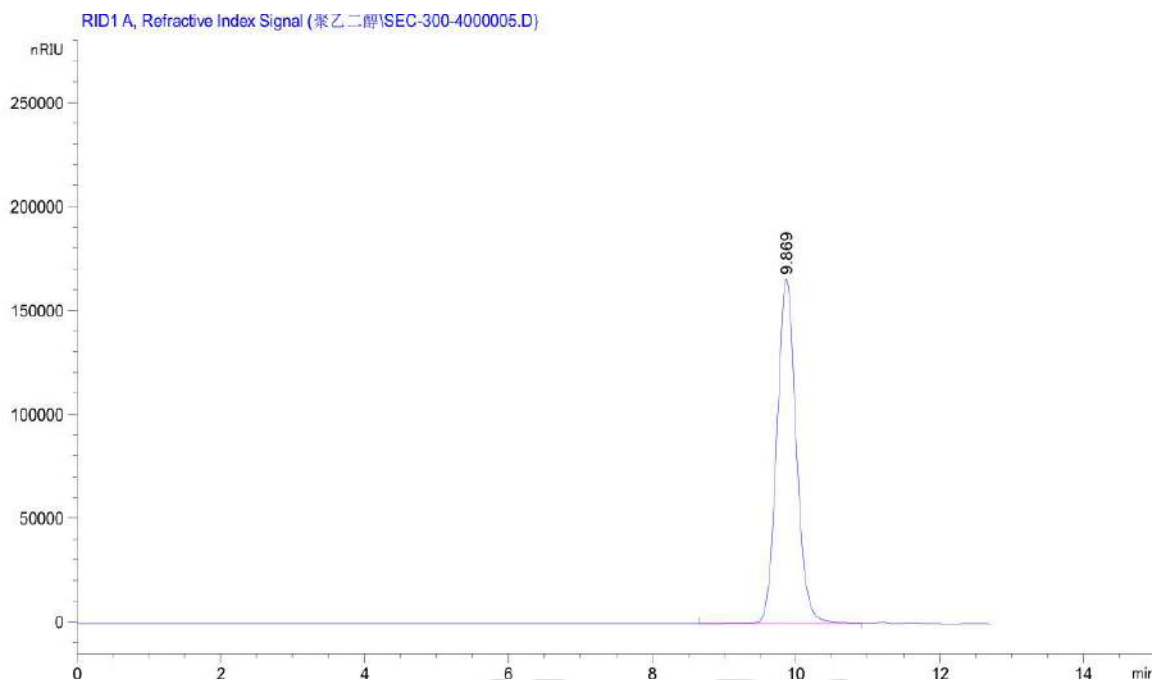
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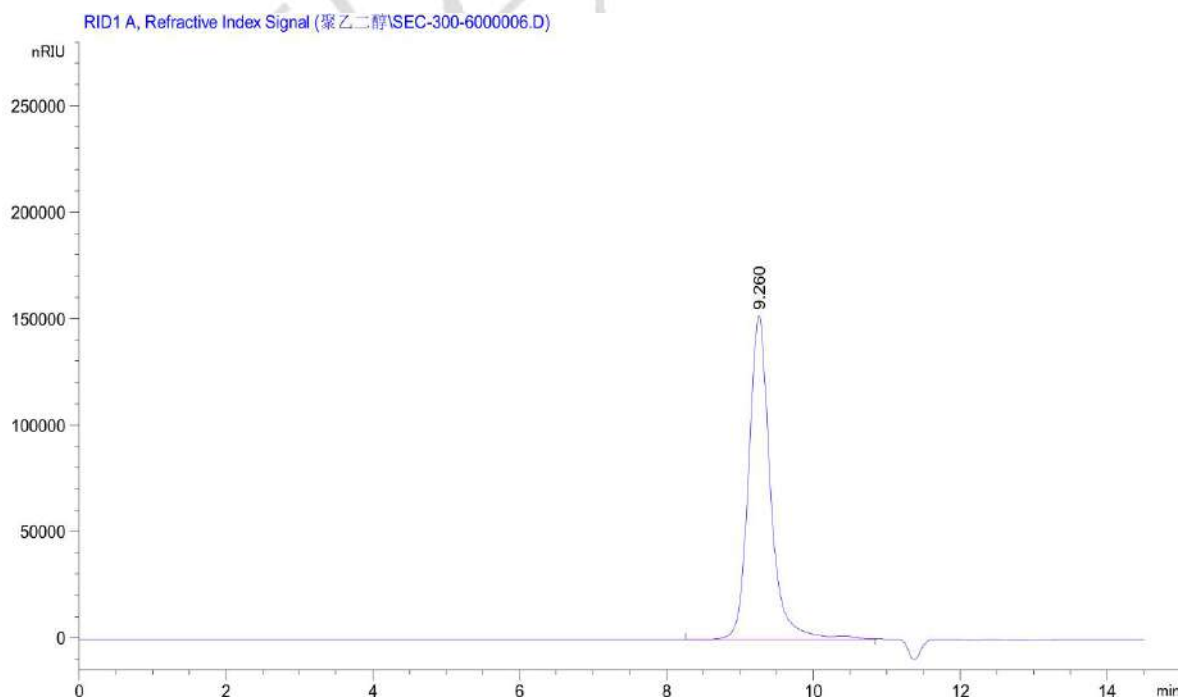
Rt [min]	k'	Area [nRIU*s]	Height [nRIU]	Symmetrical factor	Width [min]	Plates	Resolution	Selectivity
10.522	-	1.77223e6	9.12584e4	0.96	0.2808	7775	-	-

4. Polyethylene glycol 4000 solution



Rt [min]	k'	Area [nRIU*s]	Height [nRIU]	Symmetrical factor	Width [min]	Plates	Resolution	Selectivity
9.869	-	3.10935e6	1.65486e5	0.91	0.2834	6721	-	-

5. Polyethylene glycol 6000 solution



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Rt [min]	k'	Area [nRIU*s]	Height [nRIU]	Symmetrical factor	Width [min]	Plates	Resolution	Selectivity
9.260	-	3.14719e6	1.52494e5	0.00	0.2920	5571	-	-

● Conclusion:

Conclusion: Using Xtimate® SEC-300(7.8×300mm, 5um), polyethylene glycol 400, 1000, 4000, 6000 under this chromatographic condition can meet the test requirements. But polyethylene glycol 1000 and 1500 have a overlapped peak, failing to separate.

Signature

Test: Hui Lin

Date: 2020/05/19

Revise: Xiaomei Wu

Date: 2020/05/19

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