

€•, (CHEM)f„ ...† ‡  
 (^ %Š < Lumi nex(€• Ž•• ' )  
 ' " " • \_ \_ ~  
 ™" Š > œ

• ž Ÿ | €™" € α " ¥ | § " ©!

a « ¬

[ - ® " ]

° ...† ‡ ± " ² ³ Ÿ•• ' ' μ„ ' — ¶ · ¶¹ ° » ¼¹ ½¾¿ À Á ½¾ÀÃÄ· ÅÆÇÈÉ" • Á  
 ŸÊCHEMËμİ

[ ...† ‡ Í Î ]

...† Í Đ	Ñμ	...† Í Đ	Ñμ
96ÒÓÔÕÖ×Ø	1	96ÒÓÙÚ	4
ÛÜÝ	2	ÛÜÝ Þ ß Á	1à 20mL
^ á	1	â ã ä å Ä	1à 20mL
f„ æÁA	1à 120çL	f„ Þ ß ÁA	1à 12mL
f„ æÁBÔPE-SAØ	1à 120çL	f„ Þ ß ÁB	1à 12mL
è Á	1à 10mL	é ê ë Á Ô 30à Ø	1à 20mL
™" Š > œ	1		

[ Ì Í Î Ï Ñ Ò...† ]

1. Lumi nex MAGPIXò€ Lumi nex 100ó€ Lumi nex 200ó€ Á Bi o-Radó, Bi o-Pl exòã ã ö Ö ö ö ÷ ™" ø ù ø - ú, û ü ý í f p ý Ü Ø
2. € Á Š μ Á ÷ ñ
3. Þ ß Ý í EP .
4. Á Ž
5. ^
6. è Á ï Î ÷
7. 0.01mol /L Ô Á 1à Ø ä å (PBS) € pH=7.0-7.2
8. ÷
9. Û Ó ÷

[ ...† ‡ ï ñ ® ]

1. i ...t#- ...t! " ...t#Û\$Ä %& Ì ' ( ) £\* +...t#, ' - . / ÛÜÝ, f, æÁA  
f, æÁBOñ%ÒÓ& ¥-201C£Æ2...t' 3¥41C& î " Ì  
2. ™" , i ...t#- 42...t5i " 6...t#Û\$ %i 78& Ì  
( ) -  
...t#Í Û9: ; <£" =>i ? : â @™" A™" , i 42...t#ööBC@=>, 1DEÍ ™" FGÌ H  
ÝI @J KO±ŽÄÏ Û\$LÜ£&M@Í ° âNO&PQ' í Ì

[ Û° i RST& \_ ]

¶. - / \* S¥¶. â Êi U¶Û° BV7 32—J Å41CI WEX, 1,000àg • 20âY£ZÄ. [ : £  
/ Ä. 3¥-201CÅ-801C& £\ ] ^\_` aÌ  
¶¹ - " EDTAÄb, cL³ d†RSÛ° £û/Û° BRS, i 30âYÍ ¥2-81C 1,000àg • 15âY£ZÄ.  
[ : f, £Ä/Ä. 3¥-201CÅ-801C& £\ ] ^\_` aÌ  
° » ¼¹ - æefgi ° » hî ¼¹ i i ' j æe  
1ØZ' µ° » k£B- I PBSÔ0.01mol/LE pH=7.0-7.2ØÊ. ê m¶Á£¼¹ ønÐoÌ  
2Ø/° » pq—k£! ¼i r 3BsÄi t uv¿ ÄäâÁ(wxIS007E⁻ yz { Û| Öi } ½¾´ ~ •  
€æefgi äâÁ)i • , ! M÷ÊÔŠ—i ° » f, ...tØÏ ÔMµÿ±^ =1:20-1:50£%...— 1mL¿ Ää  
âÁÊŠr 20-50mg° » ° Ì Ø  
3Ø/< +i £• ÄŽI • • ' ' " " . Ì  
4Ø/hî ýi ¼¹ Á10,000àg • 5âY£• ——£Ä. [ : " ¥f, Å3¥-201C~ & Ì  
½¾¿ ÄÄ—Bâã ...>™Ø£½¾¿i š" O~ i ' ' ' -  
1Ø> æ½¾⁻ • " I PBSž ž. ê £X, " ÿ| Ö • £¥1,000àg • 5âY, \* SÌ Ô£j ½¾: £  
I • £æ\* SØÌ  
2Ø/ \* S+i ½¾" I PBSê 3@A  
3Ø/ ½¾" uv¿ ÄäâÁo£" ¥8L107D½¾¿/| §£...'' Ì , £½¾: O©ª • • « ' ' " æÁ" . Ì  
4Ø/Û° ¥2-81C 1,500àg • 10âY£• ——£Ä. [ : " ¥f, Å3¥-201C~ & Ì  
½¾ÄÄÄ. ÅÆÇ" • Û° -' 1,000àg • 20âY£ZÄ. [ : f, £Ä/Ä. 3¥-201CÅ-801C& £  
\ ] ^\_` aÌ  
( ) -  
1. OÄÛ° ! Ì ¥ & £41C& —¥1—£-201Cæ • I 1DE£-801Cæ • I 2DEÌ  
2. Û° - @æ¶j ⁻ ° ±, f, ² " £• tæ¶Û° æ³ ©ª t' f, Ì  
3. Û° ™" ø⁻ äµ! ¶" V7£æ⁻ Šú™™aÄÌ  
4. • ¥, µf, Ñz £¹ ° » ¼™" ¶. ½æP¶¹ cL ° ©ª f, Ì

[ Luminex200 äãô ]

- 1. äãÿ±—50uLA
- 2. Š<fg—^ áMagPlex;
- 3. ¾^ áµ—50¿ /Ä;
- 4. MFIÁ—Median.

[ ...tÛi ]

1. ™" ø/ i ...tþÛ° äµ! ¶" V7Ô18-251CØ£...'' • ...t±B« ÄJKÍ æÄ™" £' • Z - °  
@...> Ì Ì Û9þ...t£û/42i Û9ñ...t" Ä´9Å& Ì

2. ŪŪÝ( ĀÉŸ)– Ç# ŪŪÝŠr ŪŪÝƆBÁ0.5mLEÈý, V7É3, Ê10âYĒeJžžÈÌÔ\]Í  
 Î ØEĀé8L50.0ng/mL Ūî 7DPBŪŪÝİ EP EÇDEP ÊŠr 300İ Lİ ŪŪÝƆBÁE...Đ %y  
 @Ñ^ ƆBq50.0ng/mL, 12.5ng/mL, 3.12ng/mL, 0.78ng/mL, 0.2ng/mL, 0.05ng/mL, 0.01ng/mL E ŪŪÝƆ  
 BÁ(0ng/mL) E Ąc L ŌŌŌİ L &Ō=>² ˆ ˆ %EÇ@=>'™" uİ ŪŪÝæĀİ

item	1	2	3	4	5	6	7	Tube
CHEM	50.0	12.5	3.12	0.78	0.2	0.05	0	ng/mL

3. f, æĀĀñf, æĀB– Detection A ñDetection B™" ø' " ÓŌŌ~ ĀŌx • ' ' EŌ™ØŪB  
 œĀ#Èİ ĀŸ– †+ Ūİ | " øâ ŪŌf, ƆBĀĀĀB 1:100ƆB(...– 10İ Lf, æĀĀ/990İ Lf, ƆB  
 ĀĀ)EŪâŸ¼EƆBøƆz - nBàýİ Ç@=> İ İ ¾μáh(100İ L/Ō)E=âáhJ Ā áh0.1-0.  
 2mLİ

4. éëĒĀ– 580mL Ā Ž Šr 20mLēĒĀŌ30à ØƆB" 600mL" ācĀé8İ  
 () –

1. ŪŪÝİ ƆB ĄĀE ĄBŌĒĒ Ą Ā İ

2. ŪŪÝ' ¥İ " ø15âYÍ áhİ • ŪŪÝäĀ™" « @İ

3. ŪŪÝ, f, æĀĀācĀ, f, æĀBācĀ'™" È Āİ ƆBĀáhEƆBĀĄĀŸ" İ " Āāžžæç  
 ŪāŸ¼E\]Íİİ L&Ō=>² ˆ ˆ İ ŪŌ%Ō'™" Šμ EūÿŪŠμ Ā÷İ ' yz İ İ μèŌá  
 hE- μĄ,™" Šμáhİ İ ' Ō... Zf, æĀĀJ E« @Ą, –¥10İ LØEŌ\] éqé8ēēİ

4. ' İ Ō\_™" İ ŽƆBİ İ ŪŪÝ, f, æĀĀācĀƆf, æĀBācĀİ

5. ēĒĀŌ30xØĒ... ² İ ā - E' n7İ " V7EžžŸ¼E" +² İ FŪæĀðĒĒ áhİ

6. ...††Ēñā...†L ĀEòŌİ á3qācĀ,™" EBá3İ ŌĒ: Ā• LŌö MμĒĀ M÷øE  
 Ōñ=>Ē " ūúŭö8ēÉéq=>² ˆ ˆ ĄŪŌEŭ" FŪýēİ '™" ² á3İ

[ Ū° ' ' ]

1. ° Ɔÿä ...††° EĄ •™" •...†† éqİ ° ŭ E'™"™" øŪā + ° İ  
 : Ā™" μE- Ū İ ° İ

2. =>ø̄n- „ ° Ē „ •é8İ é8ĄBŪŪ İ ÍJ E" ó Ō'Ē '=>İ ± ŸƆ  
 BÑÑİ ... ŸĒ „ •é8İ Āİ E' ° ŭ' İ ƆBĀé İ ° ƆBİ " ƆBİ

3. f ° Ą ĒBš>æ °™ĒEĒŌŌĒĒ - =>>ŌĒ %Eŭ() ° İ

4.™" • ĄĀĀhİ İ ° »¼¹ Ā½¾ŭZĀ: Āj ¥ • •Mi r =>² ˆ ˆ Ēİ

5. ° L½¾ĀĀĀĀ• E•L•f °Ē" • , # E...– ½¾\$%, ½¾Ñμ, R JK&E Ō: Ā B  
 f, Ą- İ ' (İ

6. ) X| ŌĀŌ° | ŌE \*+, ñ-, Ō° | ŌE: Ā• LT° HŸ™" İ f, ³ Ÿñ. /³ ŸĄŌá  
 E½Ąx f, - İ

7. Ōö™" uv ° E& JKI 1: Āj • | Ō2ĀĀ3%½ =>² ˆ ˆ Ēİ

[ 4c56 ]

1. /=>Ōİ ÇŌİ Šr 200ulāāāāĀ" Ō- 7E 8, B ŪŌ ÷ĀV79 10âYĒ™, ŌĒŌİ  
 ĀŸE[ : " ¥Š 4cİ

2. Š – āŪðŪŪŌ, „ ŸŌ, ŌŌŌİ ðŪŪŌ7ŌEŸ@Šr 100İ LĄēé8İ ŪŪÝŌ: ...† Ūİ 2  
 Ōİ ŌŌŌŠ100İ LŪŪÝƆBĀŌ: ...† Ūİ ª ; 5±, « ØE2ŌŠ „ ŸŌĀƆB, İ ŸŌ100İ  
 LEÇŌŠ10ul^ áE ŪŌŠĀŪŪE371Ō ŪŌ ÷7İ 1.5—J E İ <=ð3L800rpmE >2-4mm  
 E?@^ á– 2İ

3. Ä^ £2âY, • ÁÿÉ^ &Ai \$%~ ÔÆEα" èèÌ
4. ÇÒŠf, æÁAãcÁ100İ LÔ| " øáhØE ÛÓÛÚÉ371C ÛÓ ÷7İ 1-J £ Ì <=ð3 L800rpm£ >2-4mm£?@^ á-2Ì
5. Ä^ £2âY, • ÁÿÉÇÒ" 200İ Lİ èèÁèèEBİ 1-2âY£• Òİ Áÿİ o\_eÓ3@ Ì ±, «@èè, £ ZÁC- 42İ èèääÁ£/ ÛÓCDB EÄ£/F BÒİ İ ÁÿUñ Æ Ì †İ ôf: í Ì ^ èÓGHFqÌ
6. m^ £ÇÒŠf, æÁBãcÁÔ| " øáhØ100İ LE ÛÓÛÚÉ371C ÛÓ ÷730âY£ Ì <=ð3L800rpm£ >2-4mm£?@^ á-2Ì
7. Ä^ £2âY, • ÁÿÉÇÒ" 200İ Lİ èèÁèèEBİ 1-2âY£• Òİ Áÿİ eÓ3@Eİ ' e565Ì
8. m^ £ÇÒŠèÁ150İ LE 9 2âY£™Š< I Æj \$%£[: ÄGJ Ñİ  
( ) -
1. ...† Üİ - Üİ «@=> İ „ İ Û9EÆÇİ : KŠÒÓÄ; ~ E¥ E" 6š> æ„ ?& EOİ ~ @™" ]
2. Š - => 4cÊ' ™" «@%İ LM £\ ] ÷øÌ Š J( ) α„ Nİ H" £/ ÝŠ¥ ÛÓÛñ £- μαOñÒæ£žžPİ Ý¼Ì T^ ~ ...† Šr« £Š İ ôÊª «DÒT±, «DÒŠ JKKQ- μ-Ô«RShB10âYOİ ØE... T, £/j æeİ U- 7İ VJKEK½» WX° + „ μÁİ Û O%ño\_%Ì LY, Áİ ÛO%£» ¼ð3\_Òª =>Ì
3. 7İ -L?@ Ý ZE=>J' /ŠÄÈÅÛÛİ ÛÓ3¥7‡Í £O\ ] Áÿ ZEèÓ, - - . ©ª ~ 54c£[ \J ] N^ \ ] ÛÓ' ¥Æ^ \$%£eJ ^ \_` abc ´ İ 7İ JKp78Ì
4. èè-Üâèèdeo, £BÇ@èèİ ôÊEN, /èèÁFUÔÆİ ... ™" í Ì èÓGE' Bfg™" , ð" ¥hi =>İ ôÊÌ
5. ... =>VÍ 78 ¥60%£» ¼™" Š7÷ù 78 j Ì

[ =>+ ' ]

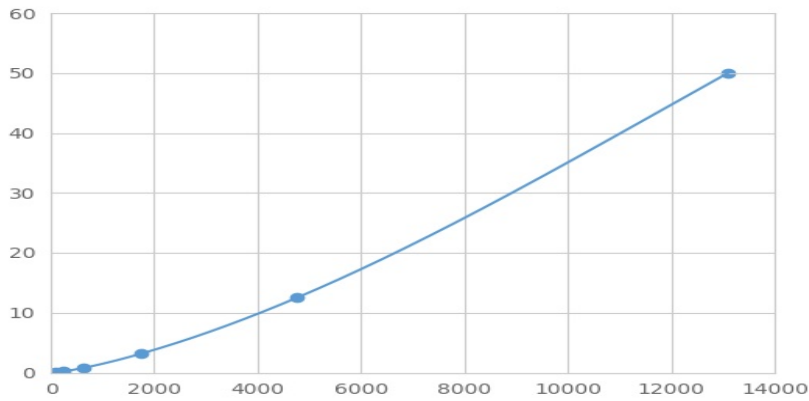
/CHEM³ ÿ x¥^ %Š< kl £hqmÈnÿ£oŠ< ÊâÛŠr ÛÛÝÅÛ° £ÆÊCHEMTpα¥mÈnÿ Äİ ³ ÿ² q£X, Šr " • , • İ CHEM³ ÿEB/ ² qİ " • , • ³ ÿèö, £Šr PEÛr İ sp, £PExtZ, £Pz MFIÁÔMedian Fluorescence IntensityØİ -p ÝÊİ CHEMé8İ hÈÈÌ " LumineXããô „ ´ £Bà Ýé8Ì

[ Bâ ]

uÛÛÝñ ° MFIÁDmÖÖÒMFIÁ, cÐÔvwÐØE...ð3\_ÒEx^ ZÆj ! ÁBàÌ OÛÛÝİ é8 Lyz ÛÓÅ Ñz ÛØEMFIÁL{ z ÛÓÅ Ñz ÛØE| - ÛÛ Ô± İ ôİ ^ y} ~İ ôBàİ R2Á H´ £OR2Á• €€¥1LýØİ » ¼™" • , hc fÁªªã£...curve expert 1.30£Pz ÝMFIÁ£ ÛÛ „ - È^- İ é8E...OPBÑÑÁ" ÛÛ• İ é8TMFIÁBà- ÛÛ İ } ~İ ôİ £/ Ýİ MFIÁ†ri ôİ £Bà- Ýé8Eð...OPBÑÑE[ L Ýİ =ãé8Ì

[ ‡gÑz ]

LY^ ¥Bà£- é8LÍ 3μ½MFIÁL• 3μ£¹ ° | ÐJ 5R" ÛÛÝİ MFIÁcL{ z ÛÓX%ØEÛÛ Ýİ é8Lyz ÛÓY%Øİ eJLY...>² İ EŠ%£ÐÈùžİ P+< Ñz ½d ÑÁÌ » ¼™" ÑÁö ÆÛÛ ÐÌ ¥=>4c9Áİ æeÓ...4c , Á• Ž , èÓ• Žp789Á&ØEÛÛ İ MFIÁj è• Ì ùžİ ÛÛ • ž• £=> İ „ Pz í İ =>ðÆÛÛ Ì



(€• , )f„ ...† ‡ ŪŪ

[ f„ ]

0.05-50ng/mL.

[ ± f„ ]

† ÁL 20DÖÖ ÝÔ [ ŪŪÝ ÞBÁØ„ † j ! ÁŠ; ÑŪŪë - i é 8]

[ • % ]

° ...† ‡ " ¥f„ CHEMÉŽf„ TÆÇÈ' • M" > W" • ^ - Ì

¥- + • Žň ° H- i ' hÉx: ĀFq ÈÉĀÈ' • M" • ^ - f„ É• † ° ...† ‡ : ĀT Žf„ i ÆÇ• M " • ^ - Ì

[ è¥8 ]

è¥8" Ý„ † Ái 3• ~ ÑCVk %Ì CVÖ%Ø = SD/meanà 100

™Í è- Ze™@...† ‡ „ Ê„ Á' Á ° ©ª † μf„ ÉÇŠ ° p> „ † 20

@ÉâŪBàæeé8 ° i j ! ÁñSDĀÌ

™Kë- • Z3Dæe™@i ...† ‡ âŪ „ Ê„ Á' Á ° ©ª † μ„ † ÉÇD ° ™" e«...† ‡ o„

† 8@ÉâŪBàæeé8 ° i j ! ÁñSDĀÌ

™Í è- CV<10%

™Kë- CV<12%

[ Q' % ]

Ž„ † É...† ‡ B ®Í œ " » ¼78& É• %2 = / - ¥5%

Lž- ñ• , ...† ‡ Ý ø, f„ Ái - ° É=>Vĩ j † 9ĀÌ - μ&A« ÉÉÆP=>VÍ 78„ 7

8ñ7i 9ĀÌ Æ@ e«=>æH©ª 4c: ž¥| LéëÌ

[ =>ŠÔ ]

1„ =>øŪŪÝ„ ...† ‡ ñ ° Ūi A

2„ Š ŌŪŪÝĀ ° Ø100İ LEŠ^ á É371C ŪÓ ÷" i 1.5—J A

3„ ^ ŌÆÉŠf„ æĀA100İ LE371C ŪÓ ÷" i 1—J A

- 4, ^ êÓ3@A
- 5, Šf, æÁB100í LE371C Ì " i 30âYA
- 6, ^ êÓ3@A
- 7, ŠèÁ150í LE 9 2âY, J Ñì

[ Š> ]

- 1, ¥® 9Āñ© • Ž j<sup>a</sup> xĀ žw«ùžì + - ©<sup>a</sup> UI ï - ' TâãÉ° HÝ: Ā B«  
' i Mµ• Ž®<sup>-</sup> Ì
- 2, ±° ï =>² " T...tï %<sub>o</sub> => ï ÈÉ4cOñ=>| Ç¥pÈÉÉ' æ Üî Ü ï Û° î šÌ
- 3, æe™@ï e«HÝ: Āj ¥±ëÛÉ...-f, ' , ²³ 8É' yz...t†Í š> æ©<sup>a</sup> =>4cÉ' µ¶  
Ž-š> æ• c• Ì
- 4, ° ...t†á• ...t á• ™" ÉxĀÝ" Ā, hé«ï HÝÌ ä \_` ab° ...t†ï =>š>¹ j < + ±  
ï f, ² " Ì
- 5, B ñ7i | ôÊ\ ] / ...t° » B¼½ÊÌ ...t#È È¼O?@ ZpŠ" • ÷øÉ• L | Ö À  
ï Ā" / , ĀxÜOÌ
- 6, ĸ Āi ÁÓÓÔÊ: Āj ¥± • MEtLhe®ĀÉxj =>² " éq[ \ - ° Ì ÚÓB™"  
JK tĀĀZ-É' ï ùøZ-Ì
- 7, ¥4c xfg, 4cĀêĀýê• " JÑôôĀ&N : Ā ýê² " i H" Ì =>ø' Ç½ËJ š>  
æÛÉ...ô÷Ì
- 8, B ° hí Oñ4cï ÇDI ôÊi 3• N: Ā æei =>² " É OLYù =>² " i : o\_%oÉ=  
>ï Ç«54cNì , \_` ShÌ
- 9, ...t†B-Êø! ŽI \_` MfÉË ¥±Ì 9Āñu=>V9Āë• É: Āj éq=>² " T-Ê² " x«  
Āæe™@...t†™Këí , i ' ( Ì
- 10, ° ...t† TĀ, ÊÌ ef...t†Āæei ' f, e«{ i • i HÝü ^ É Oxī mf, ² " x« i  
' ( Ì
- 11, " ¥hî ...t†Ê³Ýi ] Ð+ÇeLo° | ÖÉË ¥i o° | Ö • Zi ÑĀ, kÔ~ Ó, õ• i i &  
u æeÉ O¹ ° " ' &Ö• ...t†: " ¥Ā, pÿo° | Öi f, ÉÇe¹ ° f xöö™" ...t†f, o  
° | Öi
- 12, ' - Ó ÝÊ , • i é8ÉĀ ðB- =>O' Ýf, é8Ì Ö i ' ' : O?@ ° Ê f• Ēµ•  
- ...t†f, Ì
- 13, • ...t†: Āx' " ¥« =>° %o xO' i Ö=> Ýi f, É%o...É• • xm=>&Ì
- 14, ° 4cš> e ' " ¥48T...t†Ì
- 15, • ...t†• ž; Ç™" É.../Ā" ¥| Š" ©Ā[ \Ā, " ØE¹ pÿ/ x • tH" i ÛÚ ÉÛxÜ  
Ý[ \ ' P [ Ì

[ ÛÚĀß ]

ÛÚ	: Ā+•	Ààì á
ÛÜ ë	ÛÜÝÛî xhO	© <sup>a</sup> hOì ÛÜÝâ8Pß
	ZñëëxÜâ	Üaï Zñëë
	ĀxèO	f, pÿh Ā÷

