

D-€• , (D2D)f „ ...† ‡  
 (^ %Š < Lumi nex(€• Ž• • ' )  
 ' " " • \_ \_  
 ~ " ™Š >

œ• , ž Ÿ ~ " | €" €α¥| §!

©<sup>a</sup>

[ « ¬ - " ]

®...† ‡ ~ " ° ±²³´´ μ„ ´ ¬¶· ¸¶¹ º » ¼¹ , ½¾¿ÀÁ , ½¾ÀÃÄ· ÅÆÇÈÉ" • Á, Ê Æ 2DËμl

[ ...† ‡ í î ]

...† í ð	Ñμ	...† í ð	Ñμ
96ÒÓÔÕÖ×Ø	1	96ÒÓÙÚ	4
ÛÜÝ	2	ÛÜÝ ÞßÀ	1à 20mL
^ á	1	â ã ä å Ä	1à 20mL
f „ æÁA	1à 120çL	f „ ÞßÁA	1à 12mL
f „ æÁBÔPE-SAØ	1à 120çL	f „ ÞßÁB	1à 12mL
è Á	1à 10mL	é ê ë ÁÔ30à Ø	1à 20mL
~ " ™Š >	1		

[ ì í î ï ð ñ...† ]

1. Lumi nex MAGPIXò; Lumi nex 100ó; Lumi nex 200ó; ÅBio-Radò, Bio-Pl exòã ã ö Ö ö ò ò ÷ ~ " øùø« ú, ûüýí fþÿÜØ
2. € Å Šμ Á ÷ ñ
3. Þß Ýí EP .
4. Å Ž
5. ^
6. è Á ï î ÷
7. 0.01mol /LÔÅ1à Ø ä å (PBS)í pH=7.0-7.2
8. ÷
9. ÛÓ ÷

[ ...† ‡ ï ñ ¬ ]

1. ...t#Û\$Ä %& Ì ' ( ) j \* +...t#, ' - . / ÛÜÝ, f, æÁA  
f, æÁBOñ%ÒÓ& £-201Cj Æ2...t' 3E41C& î " Ì
2. ~ " , ì ...t#- 42...t5ì " 6...t#Û\$ %i 78& Ì  
( ) -  
...t#Í Û9: ; < j " =>ì ? : â @~ " A~ " , ì 42...t#ööBC@=>, 1DEÍ ~ " FGÌ H  
ÝI ÑJKO±ŽÄÏ Û\$LÛj &M-Í ° âNO&PQ' Ì

[ Û®i RST& \_ ]

1. " 1 - " EDTAÅUVWLXY†RSÛ®j ù / Û®BRS, ì 30âZÍ £2-81C 1,000àg • 15âZj [ Ä·  
 \ : f, j Å/Ä· 3E-201CÄ-801C& j ] ^\_` abÌ  
( ) -
1. OÄÛ®! ì c & j 41C& dE1ej -201CfI 1DEj -801CfI 2DEÌ
2. Û®ghæ¶ij kl , f, mnj • oæ¶Û®cpqrosf, Ì
3. Û®~ " ø- ät! uvw7j ¢- xú~ ybÀÌ
4. zE{ µf, Ñ| j } ~ • €~ " ¶· • ¢P¶¹ WL ®qr f, Ì

[ Luminex200 â ã ô ]

1. â ã , , - 50uLA
2. Š< f, - ^ á MagPlex;
3. ... ^ á µ - 50t / ‡ ;
4. MFI ^ - Median.

[ ...t Ûi ]

1. ~ " ø / ì ...t pÛ®ät! uvw7Ô18-251CØj %nŠ...t#B©< JKÍ ¢E~ " j ' æ[ g®  
@...> ì ì Û9p...tj ù / 42ì Û9ñ...t" • ´ 9Ž& Ì
2. ÛÜÝ(a·Ý)- • #ÛÜÝx' ÛÜÝpBÁ0.5mLj ' ý, w7" 3{ " 10âZj • J - - - ~ Ô] ^™  
šØj Æé8L5000.0ng/mL Ûî 7DpBÛÜÝi EP j • DEP Êx' 300> Lì ÛÜÝpBÁj %œe %  
• @ž ÝpB 5000.0ng/mL, 1250.0ng/mL, 312.5ng/mL, 78.12ng/mL, 19.53ng/mL, 4.88ng/mL, 1.22ng/mL  
j ÛÜÝpBÁ(0ng/mL)j ¢WL ÖÖÒÌ L &E => mn %oj • @=>' ~ " xï ÛÜÝæÁÌ

item	1	2	3	4	5	6	7	Tube
D2D	5000.0	1250.0	312.5	78.12	19.53	4.88	0	ng/mL

3. f, æÁAñf, æÁB- Detection A ñDetection BB~ " ø' " ¥| Š" Å©ª • « - j O~ - ®B  
- Ä# ' ì Á, ° , + ± Ì x" øâ² Of, pBÁAÁB 1:100pB (%- 10> Lf, æÁA/990> Lf, pB  
ÁA)j ³ â ´ ¼j pBøµ | « ¶· , ýi • @=> ì ì ...µ¹ ³ (100> L/Ø)j =° ¹ ³ J - ¹ ³ 0.1-0.  
2mLÌ
4. éêëÁ- 580mL Ä Ž x' 20mLéëÁÔ30à ØpBv 600mLv » WÁé8Ì  
( ) -
1. ÛÜÝi pB¢Ej ¢BÓÊqr Ì
2. ÛÜÝ' £x" ø15âZÍ ¹ ³ Ì ŠÛÜÝ¼E~ " ©@Ì
3. ÛÜÝ, f, æÁA» WÁ, f, æÁB» WÁ' ~ " È- ì pBÁ¹ ³ j pBÁ¢E' " Ì " Á½- - ¾¿  
³ â ´ ¼j ] ^™š Ì L &E => mnï ÜO%' ~ " Šµ j ùÿÜŠµ Á÷ Ì ' • | ì ì µÀO¹  
³ j - µ¢Á~ " Šµ¹ ³ ì Á' Ô% [ f, æÁAJ j ©@¢ÁdE10> LØj O] ^Ã é8ÄÄÌ

- 4. 'ÆÇ` ~ " ÈÉƆBI ï ÛÜÝ, f, æÁA» WÁƆf, æÁB» WÁÌ
- 5. èëÁÔ30xØÈ% mĒãgĵ ' ¶7Ēvw7ĵ -- ' ¼ĵ v+mĒFÌ æÁÍ qr 1 3 Ĩ
- 6. ...†‡ĒĪ â...†L Āĵ Ĩ ĐĪ 1 3 »WÁ, ~ " ĵ B' 3I ÑĒ: Ą• LÒÓ MµĀĀ MŌŌ; Oñ=>Ē " ÖxØÓ8Āĵ Ā =>mnϕÜOĵ ÛvFÌ ÚĀĪ ' ~ " Ū 1 3 Ĩ

[ Ū®« ~ ]

- 1. ®ÜÝ¼Ɔ...†‡®Ɔàáĵ ϕƆ• ~ " Š...†‡ Ā Ĩ ®āÖàáĵ ' ~ " ā~ " ø³ āāā+ ®Ī : Ą~ " µĵ «æ³ çĪ ®Ī
- 2. =>ø- ¶« „ ®Ēè„ • é8Ī éé8ϕBŪŪèëĪ Ĩ í Ĩ Jĵ " ĐĪ Ĩ O' ĄĊ' =>Ĩ Ĩ ñ ÝƆ BžÑĪ %n ÝĒè„ • é8Ī òĀĪ óĵ ' Ɔ ®ü' éĪ ƆBĀéôĪ ®ƆƆĪ " ƆBSĪ
- 3. õ f ®ϕöĒB™š> ÷ ®yĒĵ õöqr«=>>ĒĒ %ĵ ū()æ ®Ī
- 4. ~ " øùĵ ĀĀ³ Ĩ Ĩ ° »¼¹ Ā½¾ù[ Ā: ĄĪ úĒŪŪøŪ• MĪ ý' Ɔÿ=>mn ĀĪ
- 5. õ ®L½¾ĀĀĀ• ĵ • LŠf ®• • V ĵ %– ½¾ , ½¾Ñµ, R JK ĵ O: Ą B f, ϕgĪ Ĩ
- 6. ūŪ ÖĀÇ° Öĵ ö ñ Ç° Öĵ : Ą• LT®HÝ ~ " Ĩ f, X, ñ X, ϕ 1 ĵ • ϕxf, gĪ
- 7. õö~ " x ®ĵ & JKĪ : ĄĪ • Ö ĀĀ %• Ɔÿ=>mn ĀĪ

[ W ]

- 1. ÓĪ • DŌĒx' 200çLāããæĀqr« Ĩ B–¥ĀBw7'' –~ Ó10âZĪ ĵ • ŌĪ Ā, ĵ \: " Ēx WĪ
- 2. O' ƆBŪŪÝ, ŌŌƆ ÝĪ ŌĪ ŪĪ 6DŌWLŪŪÝ 8ĵ 1DŌWLŌŌĪ ā² x' 50> LƆƆĪ ŪŪ ÝŌ" 6...†³Ī 2Ø, ŌŌƆ Ý+' éĪ ŌĒĵ • Ōx' 10> L' áĵ , «' Ĩ ^ áĪ , \ • ŌĒx' 50> Lf, ...†ĀĪ ' Ā' ŽĀãŪ' ŪĪ B371Ci ÷ĀO800rpmĪ 8! Ē60âZĵ " L2-4mmĵ O] ^ ^ á° Ĩ
- 3. /Ó B^ Ā^ 2minĵ # • ŌĪ Ā, Ĩ • Ōx' 200çL 1àèëĀĵ " 31-2âZĵ \$±• # ŌĒ 4 2Ī Ā, ĵ %è3@Ī Ĩ , @@èè, ĵ &Ī gĀ' ( #42Ī èèääĀĪ ) DI Ñ: O&Ī ^ ÓĪ ~ • è\*+, rĪ WI ÑĒĒĒ ~ ^ áĪ
- 4. [ " ^ ĵ • Ōx' 100> Lf, ...†B» WÁĵ ' Ā' ŽĀãŪ' Ūĵ B- 800rpmĵ " 2-4mmĪ ÷Ā37 1C! Ē30minĪ
- 5. /Ó B^ Ā2minĵ # • ŌĪ Ā, Ĩ • Ōx' 200çL 1àèëĀĵ " 31-2âZĪ % 3 . ĵ ...%èè3 @Ī
- 6. [ " ^ ĵ • Ōx' 100> LèĀĵ 2âZĵ ~ ^ á/Oĵ , ~ r\* ÷1ÑĪ () –
- 1. ...†ŪĪ – ŪĪ @@=> Ĩ ĀĪ Ū9ĵ ĄÇĪ : 2ŠŌÓĀ; " ĵ c ĵ " 6™š> Ā?& ĵ OĪ " @ ~ " Ī
- 2. x –=> WĒ' ~ " @@%Ī 34 ĵ ] ^ŌŌĪ x J() ϕĀ 5šH" ĵ / ÝxĒ ŪÓ±Ī ĵ - µϕ6ñŌ- ĵ --7~ ' ¼Ī T\_– ...†x' © ĵ x Ĩ ĒĒ" ©DŌTI , ©DŌx JKk8- µđŌ©9: ³ B10âZŌĪ Øĵ %n; { ĵ /Ī Ɔÿϕ• Ĩ << 7Ē=JKĵ 2• š>?j k+, µ^ Ĩ Ū O%ñÇ` %Ī L@, ^ Ĩ ŪO%ĵ • €đ3` Ōqr=>Ī
- 3. 7Ē–LAB Ý Ąĵ =>J' /xĀ' ĀŪŪĪ ŪÓ3Ē ‡Ī ĵ O] ^Ā, Ąĵ èÓ, --. qr " Wĵ DEJFN- ] ^ ŪÓ«Ē• G ĵ • J- HI JKĪ Ĩ 7ĒJKƆ78Ī



®...t‡" Éf, D2Dj Éf, TÆÇÈ{ • M | š > } ~\_- Ì  
úÉ• +vwñ ®+€i z³ j Φ: ÆF ÈÉÅÈ{ • M } ~\_- f, j • o®...t‡ : ÆT Éf  
„ ĩ ÆÇ• M } ~\_- Ì

[ Àc8 ]

Àc8" Ý„ ´^ ĩ x• ÑCVT%Ì CVÔ%Ø = SD/meanà 100  
, Í Å-[ • , @...t‡Pó, Ê, ò^´´ ®qr´µf„ j • f ®X„ „ ´20  
@j â². „ Φ• é8 ®ĩ S! ^ñSD^ Ì  
, KÅ- ...[ 3DΦ• , @ĩ ...t‡â² Pó, Ê, ò^´´ ®qr´µ„ ´j • D ®~ " • ©...t‡Ç` „  
´8@j â². „ Φ• é8 ®ĩ S! ^ñSD^ Ì  
, Í Å- CV<10%  
, KÅ- CV<12%

[ Q´ %o ]

É„ ´j ...t‡B -Í tî " • €78& j ‡% ó^ /dÉ5%Ì  
L%dzĪ • VP...t‡Š< ø, f„ ^ ĩ j k j =>wĩ Æ• 9ŽĪ - µ&Ž ©ÿ j • ÆP=>wÍ 78,  
8ñ7Ē9ŽĪ Æ@ú• ©=>• +qr W: %o' ' LÄÄĪ

[ =>" Ñ ]

1, =>øÛÜÝ„ ...tñ ®Ûî A  
2, x ÔÛÜÝÄ ®Ø50> Lj x^ á10> Lj xf„ æÁA50> Lj 371C ÛÓ ÷! È60âZA  
3, ^ éÓ3@A  
4, xf„ æÁB100> Lj 371C ~! È30âZA  
5, ^ éÓ3@A  
6, xèÁ100> Lj " 2âZ, 1ÑĪ

[ ™š ]

1, úÉh 9Žñ• ùvw S-ΦÆP• -~ ù• ĩ ™qrĪ Ûĩ š´Tâã j ®HÝ: Æ B©  
´ ĩ Mµvw> æĪ  
2, l • ĩ =>mnT...tĪ %„ =>ãĩ ÈÉ WOñ=>Æ• cžÈÉ j ' tî Ûî ³ ç ĩ Û®î fĪ  
3, Φ• , @ĩ • ©HÝ: Æi ' ÝÄ² j %-f„ z „ j 8j ' • | ...t‡Í ™š> qr=> Wj ΦÉα  
Ž<sup>a</sup> ™š> æWyä Ī  
4, ®...t‡¹ ¥...tĪ ĩ ¹ ¥~ " j ΦÆ´ " Æj ³ Ä~ ĩ HÝĪ ¼ HI JK®...t‡Ī =>™šSi " + Ī  
ñĩ f„ mnĪ  
5, B ñ7ĒĪ ÑĒ] ^/...t©<sup>a</sup> B« -ĒĪ ...t#´ ĩ ' - OAB CpŠ" • ÔÕj • L Ö Ä  
ĩ • /pÿ„ ^ ΦÛOĪ  
6, ® ĩ ° ÓÓÒÈ: Æi ' Ý • Mj oLQNh± j Φi P=>mnĀ DEj kĪ ÛÓB~ " Ī  
J 2ö²³ ´ [ gj ' ÆÛø[ gĪ  
7, úÉ WāΦOP, WµÄÄÜÄ..." 1ÑôÑ¶ N : ÆpÿÜÄmnĩ H" Ī =>ø' • ½, 1™š  
> ù¹ ...ó÷ Ī  
8, B ®³ ĩ Oñ Wi • DI ÑĒĩ øN: ÆpÿΦ• ĩ =>mnj OL@ùò=>mnĩ : Ç` %oj =  
> ĩ • © WNĩ ÁHI : ³ Ī

- 9, ...t ‡ Bg° ø! ÉI HI Mfj » úÉˉ ¼9Žñ] =>w9ŽÅxj : Æi Ã =>mnTg° mnϕ©  
 ýÅϕ• , @...t ‡, KÅ½{ ĭ ĭ
- 10, ®...t ‡ TÆ| ° ¾• f...t ‡ Åϕ• Ā' f„ • ©¿ ĭ • ĭ HÝÜÞÿj OϕÀ#f„ mnϕ©ÿ ĭ
- 11, " É³ ĭ ...t ‡ ÊX, ĭ ^Á &NLÇ° Öj » úÉĭ Ç° Ö ...[ ĭ Ā< , TĀ• Ā, ØøĀR  
 ] ϕ• j O} ~| ' &EŠ...t ‡: " ÉÆ| ÜÝÇ° Ö ĭ f„ j &N} ~Åϕōö~ " ...t ‡ f„ Ç  
 ° Öĭ
- 12, ' «Æ ÝÊè„ • ĭ é8j Āãð• «=>O' Ýf„ é8ĭ ) ĭ «-: OAB ®Êèf• Ęµf  
 g...t ‡ f„ ĭ ĭ ĭ
- 13, Š...t ‡: Æϕ' " É©ü=>®ß %ϕO' ĭ ðÇ=> Ý ĭ f„ j Ę% ĭ z • É#=> ĭ
- 14, ® W™š• ' " É48T...t ‡ ĭ
- 15, Š...t ‡ œ• Ÿ ~ " j %/Æ" É¤¥j ŠÅDEÆ| " Êj } ÜÝ/ϕÞ• oH" ĭ Êĭ àáj ĭ ϕĭ  
 ĭ DE' ĐáDĭ

[ Èĭ ĀÑ ]

Èĭ	: Æ •	ÀÒĀÓ
ÛÜëëĀ	ÛÜÝÜ ĭ ϕQO	qr QO ĭ ÛÜÝ 8PB
	[ ñëëϕ³ á	³ á ĭ [ ñëë
	ĀϕĀO	fnpÿQ Ā÷
Āc8ó	^ áëëϕ³ á	" ™š> Ā?³ á" ëëpÔš
	ˆ ¼ϕ³ áÞ [ ...t ϕç	³ á ˆ ¼p [ ...t
	ç` Ō" , ĭ ÷ ÞÜÜ	~ " x ÷ ĀÖx¤ ĭ , ~ "
	x ϕĀO	fnpÿQ Ā÷
MFI ^ ó	• Öx ĭ ...t µϕĀO	ÿQ Ā÷j ĀOx' ...t
	7ËJKϕQO	&É³ ç ĭ 7ËJK
	7Ë78ϕQO	...t ĀSuvw7ú&ÉÜO ĭ 7 Ë78
	PEÛY• µ	Öx...t
	PEÛY• Þßž ŃϕÞ	" 6™š> => W
	f g 1 ŃJ K 1 Ń	B™š> • € ĭ 1 ŃJ K ĭ 1 Ń
® ^	ϕQO ĭ ® ĀR	QO ® ĭ ~ " ¤ ®qr =>
	ϕQO ĭ ®* Sp« -Ā'	R[ QO ĭ ®* Sp« -Ā'
	è„ • MB ®ÊËµó	~ " ¤ ® ĭ ç` =>