

ž Ÿ | £ Œ• œ¥• | § ‘ ©ª !

« ↪ -

[® ° •]

± ‡ ^ %² • ³ ´ µ ¶ · ¸ ¹ º » ¼½° 1 ¾¿ ÀÁÂ¹ ¾¿ ÃÄÅ, ÆÇÈÉÊ—Ë
Ë C4BPaI ¶Í

[‡ ^ %î ï]

‡ ^ ÐÑ	Ò¶	‡ ^ ÐÑ	Ò¶
96ÓÔÕÖf x Ø	1	96ÓÔÙÚ	4
ÛÜÝ	2	ÛÜÝ ÞßÀ	1à 20mL
Š á	1	â ã ä å Ä	1à 20mL
...† æÄA	1à 120çL	...† ÞßÄA	1à 12mL
...† æÄBÖPE-SAØ	1à 120çL	...† ÞßÄB	1à 12mL
è Ä	1à 10mL	é ê ë Ä Õ30à Ø	1à 20mL
š • > œ•	1		

[ì í î ï ð î ñ ‡ ^]

1¹ Lumi nex MAGPI Xòœ Lumi nex 100óœ Lumi nex

200óœ ÆBio-Radó, Bio-Pl exòâ ã ö Öö ö ÷ š • ø ù ø @ ú , ü ü ý í ...þ ý Û Ø

2¹ Ž Æ Œ¶ Ä ÷ ñ

3¹ Þß Ýí EP .

4¹ Æ •

5¹ Š

6¹ è Ä í î ÷

7¹ 0.01mol /LÖÆ1à Ø ä å (PBS) œ pH=7.0-7.2

8¹ ÷

9¹ Û Ö ÷

[‡ ^ %ï ñ °]

1¹ ...† æÃ ÆBOñ%ÓÔ& | -201CæÇ2†^' 3| 41C& î • Í
 2¹ š• , ï †^ %~ 42†^ 5i " 6†^ #Û\$ %ï 78& Í
 () ~
 †^ %oÎ Û9: ; <æ" =>î ? : â @š• Aš• , ï 42†^ %ööBC@=> , 1DEÎ š• FGÍ H
 ÝI ~ JK O%• Åï Û\$ L Ûæ&M~ Î » â NO&PQµi Í

[Û±ï RST& _]

• , ~ / * S | • , â Èï U• Û±BV7 32WJ Æ41Cl XæY , 1,000àg ' 20â Z æ [Å , \ : æ
 / Å , 3 | -201CÆ-801C& æ] ^ _ ` abÍ
 • ° ~ • EDTAÆcdeL´ f^ RSÛ±æû / Û±BRS , ï 30â Z Î | 2-81C 1,000àg ' 15â Z æ [Å ,
 \ : ...† æÆ / Å , 3 | -201CÆ-801C& æ] ^ _ ` abÍ
 ¾¿ ÄÄÄ , ÆÇÈ—Û±~' 1,000àg ' 20â Z æ [Å , \ : ...† æÆ / Å , 3 | -201CÆ-801C& æ
] ^ _ ` abÍ
 () ~
 1¹ OÅÛ±! ì g & æ41C& W| 1hæ-201C¥i | 1DEæ-801C¥i | 2DEÍ
 2¹ Û±j kæ· l mno , ...† €pæ• qæ· Û±¥r stqu...†Í
 3¹ Û±š• ø° ä v! wxV7æ¥° yúšzbÁÍ
 4¹ { | | ¶...† Ò} æ~• €• š• • , ¥P• ° eL ±st...†Í

[Lumi nex200 â ã ô]

1. â ã f~ 50uLA
2. Æ• „ ...~ Š á MagPlex;
3. † Š á ¶ ~ 50† / ^ ;
4. MFI%~ Median.

[†^ Ûî]

1¹ š• ø / ï †^ pÛ±ä v! wxV7Õ18-251CØæŠp< †^ %B~ÆJKÎ ¥• š• æ' ž [j ±
 @†> ï ï Û9p†^ æû / 42i Û9ñ†^ " Žµ9• & Í
 2¹ ÛÛÝ(a• Ý)~' #ÛÛÝy' ÛÛÝpBÂ0.5mLæ" ý , V7" 3 | • 10â Z æ - J —~™Õ] ^ š
 > ØæÇé8L10.0ng/mLÍ Ûî 7DPBÛÛÝï EP æ' DEP Èy' 300ceLi ÛÛÝpBÂæŠ• %ž
 @Ý pB; 10.0ng/mL, 2.5ng/mL, 0.62ng/mL, 0.16ng/mL, 0.04ng/mL, 0.01ng/mL, 0.0ng/mLæ ÛÛÝpB
 Â(0ng/mL)ϕ£eLÖfÓÍ L&æ=>€p < æ' @=>' š• ¥ï ÛÛÝæÃÍ

item	1	2	3	4	5	6	7	Tube
C4BPa	10.0	2.5	0.62	0.16	0.04	0.01	0	ng/mL

3¹ ...† æÃAñ...† æÃB~ Detection A ñDetection BBš• ø' • | §¨ ©Æª « ' - - æOš®~ B
 ° Æ#" ï Æ ±f+ ²Í §• øâ³ O...† pBÂAÆB 1:100pB (Š~ 10ceL...† æÃA/990ceL...† pB
 ÂA)æ´ âµ½æpBø¶} ®• , ¹ ýi' @=> ï ï †¶° » (100ceL/Ó)æ¼° » J° ° » 0.1-0.
 2mLÍ
 4¹ éêëÃ~ 580mL Æ • y' 20mLêëÃÕ30à ØpBx 600mLx ½e Æé8Í
 () ~
 1¹ ÛÛÝï pB¥• ϕ£BÖËstÍ

2¹ ŪŪÝ' | §• ø15âZÍ ° » Í < ŪŪÝ¾• š• -@Í
3¹ ŪŪÝ' ...†æĀĀ½eĀ' ...†æĀĀ½eĀ' š• É° ĩ ÞBĀ° » ɹÞBĀɹ• μ• Í • Ā¿ —ĀĀ
' âμ½ɹ] ^š> Í L&ɹ=>€pĩ ŪŪ< ' š• Ąŋ ɹũÿŪĄŋ Ā÷Í ' ž} ĩ ĩ ŋĀŌ°
» ɹ- ŋɹĀš• Ąŋ° » ĩ Ā" ŌŠ [...†æĀĀJ ɹ-@ɹĀW| 10œLŌɹŌ] ^Ā ĩ é8ĄŊÍ
4¹ ' ĒĒ` š• ĒĒÞBI ĩ ŪŪÝ' ...†æĀĀ½eĀp...†æĀĀ½eĀÍ
5¹ êĒĀŌ30xŌĒŠ €Ī āj ɹ' · 7Í xV7ɹ—μ½ɹx+€Ī FUæĀĪ st° » Í
6¹ ‡^%ĒĪ ā ‡^L ĀɹĐŊĩ ° 3 ĩ ½eĀ, š• ɹB° 3I ŌĒ: • • LŌŌ MŋŊŊŊ MŌŌɹ
Ōñ=>Ē • xŌŪŌ8ŊɹĀ ĩ =>€pɹŪŌɹŪxFUŪĄÍ ' š• ³ ° 3Í

[Ū±- -]

1¹ ±ŪŪ¾Þ ‡^%±BàáɹɹÞ• š• < ‡^% Ā ĩ ±âxàáɹ' š• āš• ø' âăă+ ±ĩ
: • š• ŋɹ@æ' Ŋ ĩ ±Í
2¹ =>ø° • @† ±Ēè†—é8Í éé8ɹBŪŪèèĩ ĩ í Í Jɹ• Ŋĩ ĩ ŌμŊðμ=>ĩ Ōñ ÝÞ
BŸŌÍ Šp ÝĒè†—é8I òĄI óɹ' Þ ±Ū" éĩ ÞBĄéŌÍ ±ÞBĩ • ÞBSÍ
3¹ Ō ... ±ɹŌÍ B> œ• ÷ ±zĒɹŌöst®=>>ɹŊ < ɹŪ()æ ±Í
4¹ š• øŪĀĀĀ» ĩ ĩ » ¼½° Ą¾¿ Ū[Ā: • I Ū| ŪŪøŪ—Mĩ ý' Þÿ=>€p ŊÍ
5¹ Ō ±L¾¿ ĀĀĀ, ɹ• L< „ ±• • d ɹš~¾¿ 1¾¿ Ōŋ' R JK ɹ Ō: • B
...†ɹj ĩ Í
6¹ ŪŪ Y, fĄĒ» , fɹŌ ñ Ē» , fɹ: • • LT±HY š• ĩ ...†' ñ ' ɹ °
ɹ, ɹx...†j Í
7¹ ŌŌš• ɹ ±ɹ& JKI : • I • , f ĄĄ < , Þÿ=>€p ŊÍ

[e]

1¹ / =>Ōĩ ' ŌÍ y' 200ulâăăăĀ• Ō® ɹ , B ŪŌ ÷ĀV7 10âZɹz , §• ŌÍ
Ā ɹ\ : • | y eÍ
2¹ y ~ â³ ðŪŪŌ' è† ÝŌ' ŌfŌÍ ðŪŪŌŌɹž@y' 100œLɹ—é8ĩ ŪŪŪŌ ‡^Ūĩ 2
ŌÍ ŌfŌy100œLŪŪŪÞBĀŌ ‡^Ūĩ « Ō, - Ōɹ2Ōyè† ÝŌĄÞB, ĩ ÝŌ100œ
Lɹ' Ōy10ulŠáɹ ŪŌyĀŪŪɹ371Ŋ ŪŌ ÷7Í 1.5WJ ɹ ™ ð3L800rpmɹ 2-4mm
ɹ ! Šá± Í
3¹ ĄŠ ɹ2âZ, " Ā ɹš &#ĩ ©§• ɹɹ• èĒÍ
4¹ ' Ōy...†æĀĀ½eĀ100œLŌ§• ø° » øɹ ŪŌŪŪɹ371Ŋ ŪŌ ÷7Í 1WJ ɹ ™ ð3
L800rpmɹ 2-4mmɹ ! Šá± Í
5¹ ĄŠ ɹ2âZ, " Ā ɹ' Ō• 200œLĩ èĒĀèĒɹ\$> 1-2âZɹ" ŌÍ Ā Í Ē` èŌ3@
Í Ō, -@èĒ, ɹ [Ą%j 42ĩ èĒăăăĀɹ/ ŪŌ%&B ' Ąɹ/(æBŌÍ ĩ Ā Ūĩ •
Í qI Ō) : ĩ ™š èŌ* +F ĩ Í
6¹ , Š ɹ' Ōy...†æĀĀ½eĀŌ§• ø° » ø100œLɹ ŪŌŪŪɹ371Ŋ ŪŌ ÷730âZɹ ™
ð3L800rpmɹ 2-4mmɹ ! Šá± Í
7¹ ĄŠ ɹ2âZ, " Ā ɹ' Ō• 200œLĩ èĒĀèĒɹ\$> 1-2âZɹ" ŌÍ Ā Í èŌ3@ɹĀ
" - 5Í
8¹ , Š ɹ' ŌyèĀ150œLɹ 2âZɹšĄ• - . / ɹ\ : Ą* ŌŌÍ
() ~
1¹ ‡^Ūĩ ~ Ūĩ -@=> ĩ Āĩ Ū9ɹŊĒĩ : 1ĄŌŌĀ; ©ɹg ɹ" 6> œ• Ā?& ɹŌĩ ©@
š• Í

2¹ y ~ => eĒ' š• -@< ĭ 23 Ꞥ] ^ŌŌÍ y J() ¥Ã 4> H- Ꞥ/ Ýy| ŪŌ² Ĩ Ꞥ- ¶¥5ñÓ° Ꞥ—6™μ½Í T_° ‡^ y' - Ꞥy I ÒĒ« -DÓTo, -DÓy JKK7- ¶WŌ-89» B10âZOÍ ØꞤŠp: | Ꞥ/I pÿ¥- ĭ ; @7Í <JKꞤ1, œ=>mn+ t¶% ĭ Ū O< ñĒ` < Í L? t% ĭ ŪO< Ꞥ€• ð3` Óst => Í

3¹ 7Í ~ L ! Ý @Ꞥ=>J' /yÅ" ÆŪŪ ĭ ŪŌ3| %ĭ ꞤO] ^Ā @ꞤĕŌ, ° - . st © eꞤABJ CN°] ^ ŪŌ-| • D Ꞥ-J° EFGHI μ ĭ 7Í J K p 78Í

4¹ êĕ~ ' âĕĕJ KĒĀꞤB' @ĕĕ ĭ ÒĒ ꞤNĀ/ĕĕĀFUŠ• Í Špš• ĭ ™ĕŌ* Ꞥ' BLMš• , Ĩ • | NO=> I ÒĒÍ

5¹ Šp=>VÍ 8ó| 60%Ꞥ€• š• y ÷ ù ð 8 PÍ

[=> -]

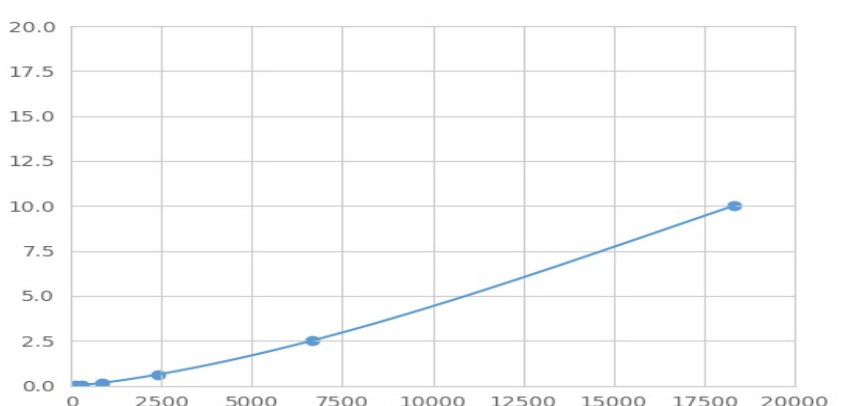
/C4BPá' ö x| Š< Ē• QRꞤ»| SÉT ꞤUĒ• Ēâ³ y' ŪŪÝÆŪ± ꞤÇĒ C4BPáTVĒ| SÉT Ā ĭ ' €• ꞤY, y' --dø ĭ C4BPá' ꞤB/ €• ĭ --dø' ĕŌ, Ꞥy' PEŪW ĭ Xpd ꞤPE xY@, Ꞥ¶} MFI%Ō Median Fluorescence IntensityØ ĭ Wp ÝĒ ĭ C4BPáé8- NĒĒÍ • Lumínexâ ã ð t μ Ꞥ, ' Ýé8Í

[_ 1]

ZŪŪÝñ ±MFI%&, ŌfŌMFI%, e• Ō[\ • ØꞤŠð3` ÓꞤ] ° [ÇP! %, ' Í OŪŪÝ ĭ é8 L ^ _ ŪŌÆPŌ_ ŪØꞤMFI%L` _ ŪŌÆPŌ_ ŪØꞤaj ŪŪĕĕŌñĀŌŌ° ž bcĀŌ, ' ĭ R2% + μ ꞤOR2% def | 1LýØÍ €• š• gh»ĕĕĕ ĭ • st â Ā ꞤŠcurve expert 1.30 Ꞥ¶} ÝMFI%Ꞥ úŪŪĕĕj j Ē° ĭ é8ꞤkOPBŸŌAÆ• ŪŪ- ĭ é8TMFI%, ' j ŪŪĕĕ ĭ bcĀŌOꞤ/ Ý ĭ MFI% ĭ ' ĀŌOꞤ, ' j Ýé8ꞤÍ kOPBŸŌꞤ\ L Ý ĭ =¼é8Í

[m...Ō }]

L?n| , ' Ꞥ- é8LÍ ¶, MFI%L• ¶ Ꞥ~• a• J5R• ŪŪÝ ĭ MFI%eL` _ ŪŌXoØꞤŪŪ Ý ĭ é8L ^ _ ŪŌŸoØÍ -JL? ‡ > €p ĭ Çp< Ꞥ• ĒŪÝ ĭ P qŌ} , J PŌ%Í €• š• PŌ%Ō r ŪŪĕĕ• Í ú| => e9• ĭ ¥- ŌŠ eā¹ Āst¹ĕŌstp789• ØꞤŪŪĕĕ ĭ MFI% ĭ ÇuÍ ùÝ ĭ ŪŪĕĕžÝvä Ꞥ=> ā ĭ Ā¶} ĭ Ē ĭ => ðr ŪŪĕĕÍ



(C4€• , f „)... t ‡ ^ % ŪŪĕĕ

[... ‡ ĭ í]

0.01-10ng/mL.

[oó...tw]

q%L20DÖf ÝÕ\ÛÜÝÞΒÃØ†µĩ P! %y ÝÛÜÇ P° ĩ é8Í

[õu<]

± ‡ ^ %• | ...† C4BPα Ë ...† TÇÈ Éx—Myœ=z { _° Í
ú | | +stñ ±+} ĩ w» α¥: • Fj ÉÊÆÉx—Mz { _° ...† α• q± ‡ ^ % : • T Ë...
† ĩ ÇÈ—M z { _° Í

[Âg8]

Âg8• Ý†µ%ĩ u~ ÒCVQ%Í CVÕ%Ø = SD/meanà 100
• Í Ç~ [-• @ ‡ ^ %Pó¹ È¹ ò%µ% ±stµ¶]...† α' € ±V• †µ20
@αâ³ ,¹ ¥-é8 ±ĩ P! %ñSD%Í
• KÇ~ , [3D¥-• @ ĩ ‡ ^ %â³ Pó¹ È¹ ò%µ% ±stµ¶]†µα' D ±š• - - ‡ ^ %É` †
µ8@αâ³ ,¹ ¥-é8 ±ĩ P! %ñSD%Í
• Í Ç~ CV<10%
• KÇ~ CV<12%

[Qµ<]

È†µα ‡ ^ %B - Í fî " €• 78& α„ < ó /W| 5%Í
L...Wj ĩ • dP ‡ ^ %† ‡ Ø, ...† %ĩ mnα => Vĩ ^ %9• ĩ - ¶ &# - ÿ α ŠÇP => VÍ 78Í
8ñ7Í 9• Í Ç@ú- - => < +st e: ...Æ™LÆÇÍ

[=>• Ò]

1¹ => ØÛÜÝ¹ ‡ ^ ñ ±Ûĩ A
2¹ y ÕÛÜÝÆ ±Ø100œLαy Šá α371 C ÛÔ ÷ ŽÍ 1.5WJ A
3¹ Š Š• αy...† æÃA100œLα371 C ÛÔ ÷ ŽÍ 1WJ A
4¹ Š èÔ3@A
5¹ y...† æÃB100œLα371 C ™ŽÍ 30â Z A
6¹ Š èÔ3@A
7¹ y èÃ150œLα 2â Z , OÒÍ

[>œ]

1¹ ú | k 9• ñ• ùst P• ¥• Þÿ' ' ùÿĩ " stURĩ " µTâã α±HÝ: • B-
µĩ M¶st• -Í
2¹ o-ĩ => €pT ‡ ^ ĩ < ¹ => ãĩ ÉÊ eOñ => ^ %g~ ÉÊ α' fî Ûĩ ' çĩ Û±ĩ €Í
3¹ ¥-• @ ĩ - - HÝ: • I Æ™Ç³ αŠ~ ...† w¹ š > 8α' ž } ‡ ^ %Í > œ• st => e αœ• ž
• - > œ• ž eváÍ
4¹ ± ‡ ^ %° Ý ‡ ^ ĩ ĩ ° Ýš• α¥• µ• Ç » Á' ĩ HÝÍ ¾ EFGH± ‡ ^ %ĩ => > œj | Ç+o
ñĩ ...† €pÍ
5¹ B ñ7Í | ÒÈ] ^ / ‡ ^ ÉαB¥| ÈÍ ‡ ^ # " ĩ " ŠO ! @pÆ-—ÕÖα• L, f Á
ĩ • /pÿ† %¥ÛOÍ

- 6¹ " ©i a ÔÔÓË: • I ™™ —MαqLNKk « α¥I P=>€pÅj ABmnÍ ÛÔBš • J 1 ö - - ®[j α' Èùø[j Í
- 7¹ ú| eã¥LM¹ e⁻ÆÆÛÆ, • OÔôÔ° N : • pÿÛÆ€pī H-Í =>ø' ±¾² O> œ • ù³ †ô÷Í
- 8¹ B ±»î Oñ eī ' DI ÒËī øN: • pÿ¥-ī =>€pα OL?ùò=>€pī : É` < α = >ī ' - eNì ÃEF9»Í
- 9¹ †^%Bj ' ø! ÈI EFM...αμú| ² ¶9• ñZ=>V9• Çuα: • I Åj =>€pTj ' €p¥- ÿÆ¥- • @†^%• KÇ. | ī Í
- 10¹ ±†^% TÇ ' , - „ †^%Æ¥-Ä" ...†- -¹ī -ī HÿÛP α O¥°, ...†€p¥-ÿī Í
- 11¹ • | »î †^%Ë` ī ^» ¼KLEÉ», fαμú| î É», f , [ī ½E¹ Q¾~¿¹ ÓøÄO Z ¥-α O~• y" &α< †^%: • | Ç ÜÝÉ», fī ...†α¼K~•) ¥ööš• †^%...†É » , fÍ
- 12¹ ' ®Ä ÝËè†-ī é8αÆãð, ®=>Oμ Ý...†é8Í Á ī - - : O ! ±Ëè...-ī ¶i j †^%...†ī í Í
- 13¹ < †^%: • ¥" • | -ü=>±β < ¥Oμī ðÄ=> Ýī ...†αÃŠα{ • Ä, => Í
- 14¹ ± e> œ- " • | 48T†^%Í
- 15¹ < †^%ž ÝÇEš • αŠ/Ç• | S" ©ªÆABCÇ • Åα~ÜÝ/¥P• qH-īÆÇàáαÈ¥É ÊAB" ÊáAÍ

[ÆÇÁÍ]

ÆÇ	: • •	ÁÍ ÄÍ
ÛÜêëÇ	ÛÜÝÛī ¥NO	s t NOī ÛÜÝī 8Pβ
	[ñêë¥´ â	´ âī [ñêë
	Ã¥ÃO	...j pÿN Ã÷
Ãg8ó	Šáêë¥´ â	" > œ• Ã?´ â èèp\$>
	μ½¥´ âp [†^¥ç	´ âμ½p [†^
	É` Ð• ¹ī ÷pÛÛ	š• y ÷ÃÑÒ¥ī ¹š• ¥ī ī ÷pÛÛ
	y ¥ÃO	...j pÿN Ã÷
MFI%ó	' Óyī †^ ¶¥ÃO	ÿN Ã÷αÃOy' †^
	7Í JK¥NO	&α´ çī 7Í JK
	7Í 78¥NO	†^ ÃPwxV7ú&αÜOī 7 Í 78
	PEÛW— ⁻	ÑÒ†^
	PEÛW—PβÝÒ¥P	" 6> œ• => e
	i j OÒJ KOÒ	B> œ• €• ī OÒJ KÍ OÒ

± %	¥NOi ± ÄO	NO ± αš • ¥ ±st =>
	¥NOi ± * Sp - - Ä"	R[NOi ± * Sp - - Ä"
	è † —MB ± È Ì ¶ ó	š • ¥ ± α É ` =>