

€ • , A3(CPA3) f „ ... † ‡  
 (^ % Š < Lumi nex (E • Ž • • ' )  
 ' " " • \_ \_ ~  
 ™ " Š > œ

• ž Ÿ | € ™ " £ ¤ ¥ ¦ § ¨ © !

a « ¬

[ - ® ¯ " ]

° ... † ‡ ± " ² ³ Ÿ • • ' ´ μ „ ´ ¶ ~ · ¸ ¹ º ¹ » ¼ ½ ° ¹ ¾ ¿ À Á Â ¹ ¾ ¿ Ã Ä Å , Æ Ç È É Ê " • Æ  
 Ÿ È CPA3 Ì μ Í

[ ... † ‡ Î Ï ]

... † ð Ñ	Ò μ	... † ð Ñ	Ò μ
96 Ó Ô Õ Ö × Ø Ù	1	96 Ó Ô Ú Û	4
Ü Ý Þ	2	Ü Ý Þ ß à Æ	1 á 20mL
^ â	1	ã ä å æ Æ	1 á 20mL
f „ ç Æ Å	1 á 120èL	f „ ß à Æ Å	1 á 12mL
f „ ç Æ B Õ P E - S A Û	1 á 120èL	f „ ß à Æ B	1 á 12mL
é Æ	1 á 10mL	ê ë ì Æ Õ 30 á Û	1 á 20mL
™ " š > œ	1		

[ í î ï ð ñ ï ò ... † ]

- 1<sup>1</sup> Lumi nex MAGPIX ó £ Lumi nex 100 ó £ Lumi nex
- 200 ó £ Æ Bio-Radó, Bio-Pl ex ó ä ö Õ ö ÷ ö ø ™ " ù ú û - ü , ü ý þ î f ÿ Ý Û
- 2<sup>1</sup> Æ Æ Š μ Æ ø ò
- 3<sup>1</sup> ß à Þ ð È P .
- 4<sup>1</sup> Æ Ž
- 5<sup>1</sup> ^
- 6<sup>1</sup> è Æ ð Ì ø
- 7<sup>1</sup> 0.01mol / L Õ Æ 1 á Û å æ (PBS) £ pH=7.0-7.2
- 8<sup>1</sup> ø
- 9<sup>1</sup> , Ü Õ ø

[ ... † ‡ ð ò ® ]

1<sup>1</sup> ð...†‡- ...†! " ...†#Ü\$Å %& Í ' ( ) £\* +...†‡, ' - . / ÜÝÞ¹ f„ çÃÀ  
¹ f„ çÃÀBOð%ÓÔ& ¥-201C£Ç2...†' 3¥41C& ì " Í  
2<sup>1</sup> ™" , ð...†‡- 42...†5í " 6...†#Ü\$ %ð78& Í  
( ) -  
...†‡Í , Ü9: ; <£" =>í ? : ã @™" A™" , ð42...†‡ö÷BC@=> , 1DEÍ ™" FGÍ H  
PI @J KO†ŽÅðÜ\$LY£&M@Î » ãNO&PQ´ ðÍ

[ Ü° ðRST& \_ ]

· , - / \* S¥· , ã ÈðU· Ü° BV7 32¶JÆ41CI WEX, 1,000ág • 20ãY£ZÅ, [ : £  
/ Å, 3¥-201CÆ-801C& £\ ] ^\_` aÍ  
· ° - " EDTAÆbcdL³ e†RSÜ° £ü/Ü° BRS, ð30ãYÍ ¥2-81C 1,000ág • 15ãY£ZÅ,  
[ : f„ £Æ/ Å, 3¥-201CÆ-801C& £\ ] ^\_` aÍ  
» ¼½° - æfghð» ¼i ì ½° ðj ' k æf  
1ÜZ' µ» ¼l £B- mPBSÖ0.01mol/LE pH=7.0-7.2ÜË, è n· Å£½° ùoÑpÍ  
2Ü/ » ¼qr ¶l £! ½ð s 3Bt Åðu vwÅÅâæÃ(xyIS007E⁻ z { | Ü} xð~¾¿´ • €  
• æfghðâæÃ)ð, f! MøËÖŠ¶ð» ¼, ...†‡ÜÍ ÖMµÿ^ %o=1:20-1:50EŠ† - 1mLÅÅâ  
æÃË< s 20-50mg» ¼ ° Í Ü  
3Ü/Æ+ð• ŽÃ• l • ' ' " " • , Í  
4Ü/ i ì pð½° Å10,000ág • 5ãY£-—~ £Å, [ : " ¥f„ Æ3¥-201C™& Í  
¾¿ ÅÃÅ- Bã ä ...>šù£¾¿ í > " O™j ' ' " -  
1Üœ• ¾¿ ⁻ ž " mPBSÿÿ, è £X, " } x, j ££¥1,000ág • 5ãY, \* SÍ Ö• £¾¿ : æ  
l • ¥| \* SÜÍ  
2Ü/ \* S + ð¾¿ " mPBSè3@A  
3Ü/¾¿ " vwÅÅâæÃp• " §8L107D¾¿ /" ©E†ª í ...£¾¿ : O« ¬• ' - ' " " çÃ• , Í  
4Ü/ Ü° ¥2-81C 1,500ág • 10ãY£-—~ £Å, [ : " ¥f„ Æ3¥-201C™& Í  
¾¿ ÅÃÅ, ÆÇÈ " • Ü° - ' 1,000ág • 20ãY£ZÅ, [ : f„ £Æ/ Å, 3¥-201CÆ-801C& £  
\ ] ^\_` aÍ  
( ) -  
1<sup>1</sup> OÅÜ° ! í § & £41C& ¶¥1@£-201Cæ• l 1DE£-801Cæ• l 2DEÍ  
2<sup>1</sup> Ü° ⁻ ° ç· k±²³ , f„ ´ª £• †ç· Ü° æµ« ¬†¶f„ Í  
3<sup>1</sup> Ü° ™" ù⁻ â· ! , " V7£æ⁻ < û™š aÁÍ  
4<sup>1</sup> ¹ ¥—µf„ Ö{ £° » ¼½™" · , ¾æP· ° dL ° « ¬f„ Í

[ Luminex200 ã ä ö ]

- 1. ã ä ÿ^ - 50uLA
- 2. Š< gh- ^ â MagPlex;
- 3. ¿ ^ â µ- 50Å/Å;
- 4. MFI Å- Medi an.

[ ...†ÿì ]

1<sup>1</sup> ™" ù/ ð...†ÿÜ° â· ! , " V7Ö18-251CÙE†ª ž ...†‡B« ÅJKÍ æÄ™" £' • Z⁻ °  
@...> í ð, Ü9ÿ...†£ü/42ð, Ü9ð...†" Å´9Æ& Í

2<sup>1</sup> ÜÝƆ( ÇƆ)– È#ÜÝƆ< sÜÝƆƆàÃ0.5mLEÉƆ, V7Ê3–È10ãYÉfJÿÿÌ Í Õ\]Í  
 Ĩ ÛÉÇê8L50.0ng/mLÍ Ýİ 7DBàÜÝƆðEP ÉÈDEP È< s300DLðÜÝƆƆàÃÉ†Ñ %z  
 @Ò%Ɔàr 50.0ng/mL, 12.5ng/mL, 3.12ng/mL, 0.78ng/mL, 0.2ng/mL, 0.05ng/mL, 0.01ng/mLÉÜÝƆƆ  
 àÃ(0ng/mL)¥| dLÖxÓÍ L&Ó=>´ª %oÉÈ@=>´™" vðÜÝƆÇÃÍ

item	1	2	3	4	5	6	7	Tube
CPA3	50.0	12.5	3.12	0.78	0.2	0.05	0	ng/mL

3<sup>1</sup> f, ÇAAðf, ÇÃB– Detection A òDetection BB™" ù´" ÖÖ™ÆxØ •´" ÉO™ÛÜB  
 •Æ#ÉðÃÿ–^+ ÛÍ|´" ùãÜOf, ƆàÃÆB 1:100Ɔà(†–10DLf, ÇÃA/990DLf, Ɔà  
 ÃA)ÉÿãƆ½ÉƆàùƆ{-oàáƆðÈ@=> í ð¿µâi (100DL/Ó)É=ãâi J´ âi 0.1-0.  
 2mLÍ

4<sup>1</sup> èèi Ã– 580mL Æ Ž < s20mLèi ÃÖ30á ÛƆà" 600mL" ädÃè8Í  
 ()–

1<sup>1</sup> ÜÝƆðƆà ¢Ã¥| BÔÈ«–Í

2<sup>1</sup> ÜÝƆ' ¥|´" ù15ãYÍ âi Í žÜÝƆãÃ™" «@Í

3<sup>1</sup> ÜÝƆ¹ f, ÇÃAäDÃ¹ f, ÇÃBäDÃ¹™" É´ðƆàÃâi ÉƆàÃ¢ÃƆ" Í´" ÃæÿÿÇè  
 ÝãƆ½É\]ÍÍÍ L&Ó=>´ª ðÿO%o'™" Šµ Éü ÝŠµ ÃóÍ' z{ í ðµéOâ  
 i É-µ¢...™" Šµâi ðj´ Ö† Zf, ÇÃAJ É«@¢...¶¥10DLÛÉO\] èr è8èi Í

4<sup>1</sup> ´ í p\_™" î • ƆàI ðÜÝƆ¹ f, ÇÃAäDÃÿf, ÇÃBäDÃÍ

5<sup>1</sup> èi ÃÖ30xÛÈ† ´İ ä´É' o7ð" V7ÉÿÿƆ½É" +´İ FUÇÃñ«–âi Í

6<sup>1</sup> ...†‡Èðã...†L ÃÉóóí â3rädÃ,™" ÉBâ3I ðÈ: Ä•Lö÷ Mµi Æ MøùÉ  
 Oð=>È " úûü÷8i Éêr =>´ª ¢ÿOEý" FUpèÍ´™" ² à3Í

[ Ü°´" ]

1<sup>1</sup> °ÿ å ...†‡° É¢•™" ž...†‡ èrð °|ú É´™"™" ùÿã + °ð  
 :Ã™" µÉ- Ý ð °Í

2<sup>1</sup> =>ù´o-´" °È´"•è8Í è8¢BÜÝ ð ÍJÉ" ò O´Ç´=>ð³ ƆƆ  
 àÒÓÍ†ª ƆÈ´"•è8I ÆI É´ °ÿ´ ðƆàÆè Í °Ɔàí" PBSÍ

3<sup>1</sup> f´ ¢ Ì Bš>æ ° šÈÉö÷«–=>>ÓÇ %Éü() °Í

4<sup>1</sup>™" Ç ÃÃÃi İ ð»¼½°Æ¾¿úZÃ: Äk ¥ Ç •Mð s ! =>´ª" ÌÍ

5<sup>1</sup> °L¾¿ÃÃÃ, É•Lžg °Ç#•c\$ É†–¾¿%&¹¾¿ Òµ¹R JK' É O: Ä B  
 f, ¢´ð()Í

6<sup>1</sup> \*X}xÆp»}xÉ +, - ò. -p»}xÉ: Ä•LT°HP™" ðf, ³ÿò/O³ÿ¢1â  
 É¾¿¢Øf,´Í

7<sup>1</sup> ö÷™" vw °É&JKI 2: Äk•}x3ÃÆ4%¾¿ ! =>´ª" ÌÍ

[ 5d67 ]

1<sup>1</sup> / => ÒðÈÓÍ < s200ulãäåæÃ" O-8É 9, B, ÜÔ øÃV7: 10ãYÉš, ÒÇÓÍ  
 ÃÿÉ[: " ¥< 5dÍ

2<sup>1</sup> < –ãÜñÜÝÓ¹´" ƆÓ¹ ÖxÓÍ ñÜÝÓ7ÓÉz@< s100DL¢f è8ðÜÝƆÖ; ...†ÿİ 2  
 ÛÍ ÖxÓ< 100DLÛÜÝƆƆàÃÖ; ...†ÿİª <6³, « ÛÉ2Ó<´" ƆÖÆƆà, ð ƆÛ100Ð  
 LEÈÓ< 10ul^âÉ, ÜÔ< ÁÛÜÉ371Ç, ÜÔ ø7ð1¶JÉ Í =>ñ3L800rpmÉ ?2-4mmÉ  
 @A^â–3Í

- 3<sup>1</sup> Å^ £2āY, – Åÿ£^ &Bð%&™ÖÇE¤" èi Í
- 4<sup>1</sup> ÈÓ< f„ çÃÄä dÃ100ÐLÖ| " ùai ÛE, ÜÔÛÛE371C, ÜÔ ø7ð1¶J £ Í =>ñ3 L800rpm£ ?2-4mm£@A^ â–3Í
- 5<sup>1</sup> Å^ £2āY, – Åÿ£ÈÓ" 200ÐLðèi Åèi £CÍ 1-2āY£– ÓÍ ÅÿÍ p\_èÖ3@ Í³, «@èi, £ ZÆD¯ 42ðèi àæÅ£/, ÜÔDEB FÅ£/G BÓÍ ðÅÿUð Ç Í ‡I ò„ : î Í ^ èÔHI Fr Í
- 6<sup>1</sup> n^ £ÈÓ< f„ çÃBä dÃÖ| " ùai Û100ÐLE, ÜÔÛÛE371C, ÜÔ ø730āY£ Í =>ñ3L800rpm£ ?2-4mm£@A^ â–3Í
- 7<sup>1</sup> Å^ £2āY, – Åÿ£ÈÓ" 200ÐLðèi Åèi £CÍ 1-2āY£– ÓÍ ÅÿÍ èÖ3@Ej ' f 675Í
- 8<sup>1</sup> n^ £ÈÓ< éÃ150ÐLE : 2āY£™Š< J • £%&£[ : ÅHKÒÍ  
( ) –
- 1<sup>1</sup> ...†ÿi –ÿi «@=> í ...ð, Ü9EÇÈð: LŠÓÔÅ; ™EŞ £" 6š> œ...? & £Oì ™@ ™" Í
- 2<sup>1</sup> < –=>5dË' ™" «@%ðMN £\] øùÍ < J( ) ¤... OÍ H" £/ Þ< ¥, ÜÔÛð £- µ¤PðÓ• £ÿÿQÍ Þ½Í T ^ - ...†< s« £< I ðËª «DÓT³, «DÓ< JKKR- µ¶Ö«STi B10āYOÍ Û£†ª U–£/k ! ¤f ðV- 7ðWJ K£L¾» XY±² +„ µÃðÿ O%ðp\_%Í LZ„ ÅðÿO%£¼½ñ3\_Ó« –=>Í
- 3<sup>1</sup> 7ð–L@A Þ [ £=>J' /< ÅÉÆÚÛð, ÜÔ3¥8†Í £O\] Åÿ [ £èÖ, - - . « - ™65d£\] J ^ N¯ \], ÜÔ' ¥Ç\_%&£f J¯ ` abcd´ ð7ðJKÿ78Í
- 4<sup>1</sup> èi –ÿāèi ef p...£BÈ@èi I ðË£N.../èi ÅFUÖÇÍ †ª ™" î Í èÔHE' Bgh™" , ñ" ¥i j =>I ðËÍ
- 5<sup>1</sup> †ª =>VÍ 88 ¥60%£¼½™" < 8øú 88 kÍ

[ =>, " ]

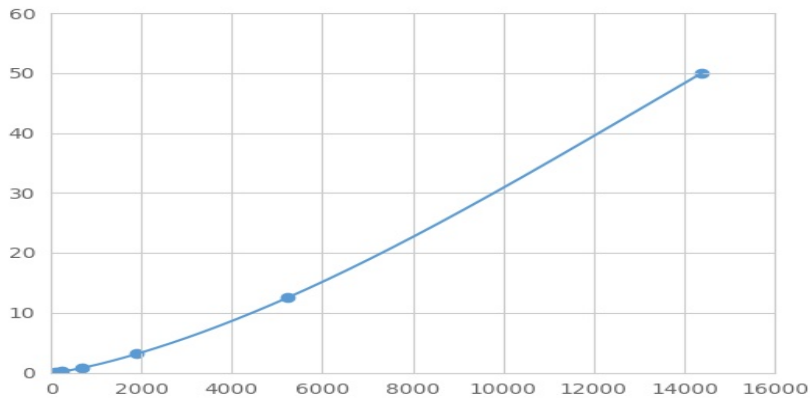
/CPA3³ ÿ Ø¥^ %Š< I m£i r nÉoÿ£pŠ< ÈãÜ< sÜÿÞÆÜ° £ÇÈCPA3Tq; ¥nÉoÿ Åð³ ÿ´ r £X, < s" • c ÇðCPA3³ ÿEB/ ´ r ð" • c Ç³ ÿè÷, £< sPEÛsðt ÿc £PEØ u[, £B{ MFIÃÖMedian Fluorescence IntensityÜð–¶ÿ ÞÈðCPA3è8Ji ÉÉÍ " Lumi nexã ä ò „ ´ £àá Þè8Í

[ àá ]

vÜÿÞð ° MFIÃEnÖxÓMFIÃ, dÑÖwxÑÛ£†ñ3\_Ó£y¯ ZÇk! Åàáí OÜÿÞðè8 Lz{ ÜÖÆ Ò{ ÜÛEMFIÃL | { ÜÖÆ Ò{ ÜÛ£} - Üÿ Ö³ j öj - z ~• j òàáðR2Å I´ £OR2Ã€•, ¥1LÞÜÍ ¼½™" f„ i d ...Æ« -ãã£†curve expert 1.30£B{ ÞMFIÃ£ Üÿ †¯ É¯ ðè8E†OBàÒÒAÆ" Üÿ• ðè8TMFIÃàá¯ Üÿ ð~• j öj £/ Þð MFIÃ^ sj öj £àá¯ Þè8Eñ†OBàÒÒ£[ L Þð=ãè8Í

[ %hÖ{ ]

LZŠ¥àá£- è8Lî 4µ¾MFIÃL• 4µ£° » } ÑJ 5R" ÜÿÞðMFIÃdL | { ÜÖX< Ü£Üÿ Þðè8Lz{ ÜÖÿ< ÜÍ f J LZ...>´ª ð¥£%£ÑËúž ðP, • Ö{¾e ÒÃÍ ¼½™" ÒÃö ŽÜÿ ÑÍ ¥=>5d9Æð¤f Ö†5d ¹ Å••¹ èÖ••ÿ789Æ' Ü£Üÿ ðMFIÃk ì´Í úžðÜÿ •ž´ £=> í ...B{ î î ð=>öŽÜÿ Í



(€• , A3)f„ ...† ‡ ÜÝ

[ f„ ]

0.05-50ng/mL.

[ 3 f„ ]

‡ ÂL20DÖx ÞÖ[ ÜÝÞBàÂÛ„ ´ ðk! Â< <ÖÜÝì - ðê8Í

[ ' ‰ ]

° ...† ‡" †f„ CPA3E• f„ TÇÈÉ" • M• > X— —^ - Í

‡~ +••ò ° I™ð" i £x: ÄFr ÉÊÆÉ" • M— —^ - f„ £• ‡° ...† ‡ : ÄT • f„ ðÇÈ• M — —^ - Í

[ é§8 ]

é§8" Þ„ ´ Âð4' š ÒCVI %Í CVÖ%Ü = SD/meaná 100

> Íì - Zf> @...† ‡ 1 È1 Â´ Â ° « ¬´ µf„ £Èæ ° q• „ ´ 20

@£ãÜàáxfê8 ° ðk! ÂðSDÁÍ

> Kì - €Z3Dxf> @ð...† ‡ãÜ 1 È1 Â´ Â ° « ¬´ µ„ ´ £ÈD °™" f« ...† ‡p„

´ 8@£ãÜàáxfê8 ° ðk! ÂðSDÁÍ

> Íì - CV<10%

> Kì - CV<12%

[ Q´ ‰ ]

• „ ´ £...† ‡B ®Í ž " ¼½78& £Ý%3 >/¶¥5Í

L ¶ ò•c ...† ‡; Çù, f„ Âð±² £=>Vð£x9Æí - µ&B«! £¥ÇP=>VÍ 78' 8

8ð7ð9Æí Ç@ f« =>| I « ¬5d: §" Lèì Í

[ =>©Ö ]

1¹ =>ùÜÝÞ¹ ...† ò ° Ýì A

2¹ < ÖÜÝÞÆ ° Û100ÐLE< ^ â £371 C, ÜÖ øª ð1¶J A

3¹ ^ ÖÇE< f„ ÇÄA100ÐLE371 C, ÜÖ øª ð1¶J A

4<sup>1</sup> ^ ëÔ3@A  
 5<sup>1</sup> < f „ Ç ÃB100ÐLE371C Í<sup>a</sup> ð30ãYA  
 6<sup>1</sup> ^ ëÔ3@A  
 7<sup>1</sup> < éÃ150ÐLE : 2ãY, KÒÍ

[ Š> ]

1<sup>1</sup> ¥° 9Æð« •• k-æÄ žx-úžð , ®«-Umð´´TãäÉ°HP: Ä B«  
 ´ðMµ••°±Í  
 2<sup>1</sup> ³² ð=>´ªT...†ð %¹=> ðÉÉ5dOð=>ÉæŞqÉÉÉ'ž ÝiÝ ðÜ°iæÍ  
 3<sup>1</sup> æf> @ðf«HP: Äk Ş³ì ÜÉ†-f„ " ¹´µ8É'z{...††Íš>æ«-=>5dÉ¶· ,  
 Ž-š>æ•d´Í  
 4<sup>1</sup> °...††â¹...† â¹™"ÉæÄP"Ç°iê-ðHPÍâ`abc°...††ð=>š>»k(É+³  
 ðf„´ªÍ  
 5<sup>1</sup> B ò7ðI ðË\] /...†¼½B¾¿ÉÍ ...†#É ÉÀO@A [ÿŠ"•øùÉ•L}xÁ  
 , ðÇ#/!„ÅæÝOÍ  
 6<sup>1</sup> Á Ãð, ÃÖÖÖË: Äk Ş³ •ME†Li f° ÄÉæk =>´ªêr\]±²Í, ÜÖB™"  
 JL uÅÆZ´É'íúùZ´Í  
 7<sup>1</sup> ¥5d ægh¹5dÇèÆpè€"KÒððÈ'N : Ä !pè´ªðH"Í=>ù'É¾ÉKš>  
 æüË...ðøÍ  
 8<sup>1</sup> B °iïOð5dðËDI ðËð4ÇN: Ä !æfð=>´ªÉ OLZú =>´ªð: p\_%É=  
 >ðË«65dNí...`aTiÍ  
 9<sup>1</sup> ...††B´ìù!•l`aMfÉÍ ¥±Í 9Æðv=>V9Æi´É: Äkêr=>´ªT´ì´ªæ«  
 !Ææf>@...††>Kìÿ—ð()Í  
 10<sup>1</sup> °...††TÇ°ìÐfg...††Ææfj´f„f«|ð•ðHPý %É OæÑnf„´ªæ«!ð  
 ()Í  
 11<sup>1</sup> " ¥iï...††Ë³Ýð]Ò, æfLp»}xÉÍ ¥i p»}x €ZðÓÃ¹I ÒšÖ¹öÇj j´  
 v æfÉ O°»•´&Óž...††: " ¥Ç°ÿ p»}xðf„Éæf°»„æö÷™" ...††f„p  
 »}xÍ  
 12<sup>1</sup> ' - Ö PË „•ðê8ÉÆ ñà-=>O´ P f„ê8Íx ð'": O@A °Ë f•ìµ•  
 ´...††f„Í  
 13<sup>1</sup> ž...††: Äæ' " ¥« =>° %æO´ð Ø=> Pðf„ÉŠ†É¹•Ün=>'Í  
 14<sup>1</sup> ° 5dš>f´" ¥48T...††Í  
 15<sup>1</sup> ž...††•ž; Ç™"É†/Ç" ¥|Ş" ©Æ\]Ç°" ÚÉ°ÿ /æ •†H" ðÜÜ ÉÝæP  
 B\]´à\Í

[ ÛÜÁá ]

ÛÜ	: Ä, •	Áaj ā
ÜÝ ì	ÜÝPÝi xi O	«-i OðÜÝPä8Bà
	Zòèi æÝā	Ýāð Zòèi
	ÅæéO	f†ý i Åø

é§8	^ âëì ¨Ýã	" š > œ...?Ýã: èì ýCí
	Þ½¨Ýãý Z...†¨	ÝãÞ½ý Z...†
	ρ_> " 1 ĩ øýÚÛ	™" < ø...åævð 1 ™" vđĩ øýÚÛ
	< ¨éO	f†ý i Åø
MFİÃ	ËÓ< ð...†μ¨éO	i Åø£éO< s...†
	7ðJK¨i O	&ÓÝ ð7ðJK
	7ð78¨i O	...†...k „ V7ü&ÓÝOð7 ð78
	PEÛs • Ç	åæ...†
	PEÛs • BâÒÒ¨	" 6š > œ= > 5d
	• ¨ KÒJ K KÒ	Bš > œ¼½ðKÒJ KÎ KÒ
° Å	¨i Oð ° j j	i O ° £™" vw ° « ¬ =>
	¨i Oð ° *Sÿ' " j '	RZi Oð ° *Sÿ' " j '
	„ • MB ° Èì μ	™" vw ° £ρ_ =>