

€ • , f „ ... † ≠ ^ A‰Š (SDHA) < Ⓛ • Ž •

(• ‘ ’ “ Luminex” • — ~ ™)

Š > œ • ž Ÿ

j > Ⓜ Ⓛ ☰

¥ | ^ \$.. © j > ^ a « > - - ® - ° !

± 2 3

[μl>]

• Ž • „ > ^ o ^ — ~ ™ » ¼ Ⓛ » Ÿ ½ ¾ ġ ½ Ā ġ Ā Ā Ā Ā ġ Ä Å Ä Ç È ġ Ä Å É È È ¾ ī ī ī Ⓛ œ • È
~ NSDHA ¼ O

[• Ž • ØO]

• Ž Øx	Ø ¼	• Ž Øx	Ø ¼
96ÙÚÙÜÝPB	1	96ÙÚà á	4
â ã ä	2	â ã ä å æ È	1ç 20mL
• è	1	é ê ë ï È	1ç 20mL
‹ Ⓛí È A	1ç 120î L	‹ Ⓛå æ È A	1ç 12mL
‹ Ⓛí È BÜPE-SAB	1ç 120î L	‹ Ⓛå æ È B	1ç 12mL
ī È	1ç 10mL	Ø ñ ò È Ü 30ç B	1ç 20mL
j > Ⓜ Ⓛ ☰	1		

[ØOÖÖ ÷ ØØ • Ž]

1 ġ Luminex MAGPI Xù^a Luminex 100ú^a Luminex

200ú^a l Bi o-Radù, Bi o-Pl exué ê û Üü y û p i > ý ý ‘ , Ⓛ < ã B

2 ġ " l ‘ ¼ È p ø

3 ġ å æ ä ö EP .

4 ġ l –

5 ġ •

6 ġ ñ È ö Øp

7 ġ 0.01mol/L Ü l 1ç B , è ï (PBS)^a pH=7.0-7.2

8 ġ p

9 ġ ...â Ú p

[• Ž • Ø Ø ! μ]

1. " # \$ Ö • Ž • ž % • Ž & ' • Ž (â) Ě % * + Ø , - . ^ / Ø • Ž • 1 , 234âäää^c \times Øí È A
 - . ž \times Øí È B5Ø96ÙÚ+ -206C^a Í 7 • Ž , 8-46C+ Ø Ø
 2. i > 1 Ø • Ž • ž 97 • Ž : Ø ' ; • Ž (â) % * Ø < = + Ø
 - . ž
 • Ž • Ø...â > ? @ A^a ' BCÓD? é E i > F i > 1 Ø 97 • Ž • üy GHEBC11I J Ø i > KLÓM
 ä NµOP5• - È öâ) Qä^a + RµØ% ÁéST + UV» ØØ

[â· öWXÙ +]

ÁÄÄÀž « Z [\ öÄÄ] öÄÄÖ ^ TM _ % « Z
 1B` š ¼ÄÄa^a G` b PBSÛ0.01mol/L^a pH=7.0-7.2B Ñ¾ñ c ½È^a ÄÄýd x e Ø
 2B 4ÄÄf gÙa^a & Äö h 8Gi Èöj k l AEçëì È(mn)S007^a ¶opqâr Ýö%oÄÅ» s t
 u « Z [\ öëì È)övw&RþÑÛ' ÝöÄÄxyz { BÓÛR ¼^ | } =1:20-1:50^a ~z ž 1mLAEçë
 i ÈÑ• h 20-50mgÄÄ . ØØ
 3B 4€OÖ• , ÈfN „ ...†‡ ^ %o¾Ø
 4B 4] ö öÄÄÈ 10,000çg ~ 5éÙ^a < Ø• a È¾Ž? > - < Øí 8-206C+ + Ø
 ÄÅÆÇÈž Géê• C• ý^a ÄÅö' > 5• ^ TM†‡ž
 1B' " ÄÅ¶" > b PBS• • ¾ñ^a - 1 > -r Ý... ~ TM^a ~ 1,000çg ~ 5éÙ1 / XØÛ• šÄÅ? >
 N ~ ø• / XØØ
 2B 4/ XØÖÄÅ> b PBSñ3E F
 3B 4ÄÅ> k l AEçëì Èe • ^ ž = Q107I ÄÅ/Ù^a z i Øy^a ÄÅ? 5¢E, ...ø†‡ ^ í È%o¾Ø
 4B 4â• -2-86C 1,500çg ~ 10éÙ^a < Ø• a È¾Ž? > - < Øí 8-206C+ + Ø
 ÄÅÉÈ È¾ì Í î ø• â• ž , 1,000çg ~ 20éÙ^a ^ È¾Ž? < Ø^a l 4È¾8-206C -806C+ a
 ¥ | §† .. ©Ø
 - . ž
 1. 5Èâ• & öž \$ + a 46C+ Ø -1^a a -206C^a, N1I J a -806C^a, N2I J Ø
 2. â• « -í ½-- ®- 1 < Ø° i a • { í ½â• « ± ØE{ ² < ØØ
 3. â• i > ý¶ë³ & ^ µ< a « ¶• i • ©Ø
 4. ØÙ ¼< ØØp^a . , ¹° i > ½¾» « U½À½Q . ØE < ØØ

[Lumi nex200 é ê Ù]

1. é ê ^ | ž 50uLF
2. ' " [\ ž • è MagPlex;
3. ½• è ¼ž 50¾/ž ;
4. MFI Äž Medi an.

[• Ž ã Ø]

1. i > ý 4% ö• Ž â• ë³ & ^ µ< Ø18-256CØ^a z i " • Ž • G² ÁOPÔ« Å i > a , ¥` « .
 E • C%öö...â > • Ž a 497ö...â > Ø• Ž ' Å » > Ä+ Ø
 2. âäää (Åä) ž AE(âäää • häääåæ È 0.5mL^a Ç 1 µ< È 8¶ È 10éÙ^a Z Ø • • È ÈÙ¥ | l
 Í Ø^a l Ø = Q20.0ng/mL Ø 7I å æâäåö EP a AEI EP Ñ• h 300l Løäääåæ È a z l %* Ø
 E Ø} å æg 20.0ng/mL, 5.0ng/mL, 1.25ng/mL, 0.31ng/mL, 0.08ng/mL, 0.02ng/mL, 0.0ng/mL åäääåæ
 È (0ng/mL)œ• ¼QÜÝÙØQ+ ÑBC° i ! ' a AEBC, i > k öäääí È Ø

item	1	2	3	4	5	6	7	Tube
SDHA	20.0	5.0	1.25	0.31	0.08	0.02	0	ng/mL

3. $\text{E} \times \text{A} / \text{E} = \text{SDHA}$ (Detection A / Detection BG) = $\frac{\text{E}}{\text{E} + \text{BG}}$ (1:100 dilution factor) $\times \frac{20.0}{20.0 + 100} \times 100\% = 17.8\%$

4. $\text{E} = \text{SDHA} \times \text{Dilution Factor} \times \text{Concentration}$ = $17.8\% \times 100 \times 500 \text{ ng/mL} = 8900 \text{ ng/mL}$

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[4]

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[5]

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5_z Ě• ^a 2éŠ1< Ě[^] ^a AEÙ> 200† LÖñòÈñò^a CÍ 1-2éŠ^a < ÙÔ% Ě[^] Öe†ñÚ3E
 Ø⁻ 1² Eñò1^a ` I D« 97Öñòëì È^a 4...â ÜDEG F Ě^a 4G GUÖöÈ[^] i ñ Å
 Ö{ Nôx? ôĒ• ñÚHI KgÓ
 6_z C• ^a AEÙ• < Æí ÈBâ ¼ÈÙ- > ýà] B100† L^a ...â Úà á^a 376C...â Ú p < 30éŠ^a Ě
 => ÷ 8Q800rpm^a ? 2-4mm^a @A• èŒ3Ó
 7_z Ě• ^a 2éŠ1< Ě[^] ^a AEÙ> 200† LÖñòÈñò^a CÍ 1-2éŠ^a < ÙÔ% Ě[^] ÖñÚ3E^a ^
 ™Z 675Ó
 8_z C• ^a AEÙ• i È150† L^a : 2éŠ^a j ' " J • š%&^a Ž? EHKOÓ
 - . ž
 1_z • Žäöžäö² EBC%óyö...â >^a í î ö?L' ÙÚÈ@• ^a ž\$^a ' ; ÇE¤yD+ ^a 5ö• E
 i > Ó
 2_z • ž BC5¼Ñ, j > ² E' öMN ^a ¥| ÷ øÓ• O- . « y OÍ Mœ^a 4 ä• -...â ÚÙñ
^a 2¼« PøÙ" ^a • • QÆÜÄÓY§¶• Ž• h² ^a • NôÑ±² I ÙY⁻ 1² I Ù• OPPR2
 ¼ÝÙ² ST] G10éŠ5ÖB^a z i U¶^a 4_ « ZÖV['] <î WOP^a L » EXY- ®OŒ¼Àöä
 T' øe†' ÓQZŒÀöäT' ^a 1^o ÷ 8†Ù¢EBCÓ
 3_z <î ž Q@A ä [^a BCO, 4• ĚÇl àáö...â Ú8-8• Ö^a 5¥| È[^] [^a ñÚ1¶23¢E
 • 65¼^a \] O^S¶¥| ...â Út-Å%&^a ZO¶` abcd» ö<î OP <=Ó
 4_z ñòž Ùéñòefey^a GÆEñòNôÑ^a Sy 4ñòÈKí ÓÅÓz i i > ôÈñÚH^a, Ggh i >
 1ð> -i j BCNôÑÓ
 5_z z i BCµÖ8= -60%^a 1^o i > • 8p 8= kÓ

[BC, ‡]

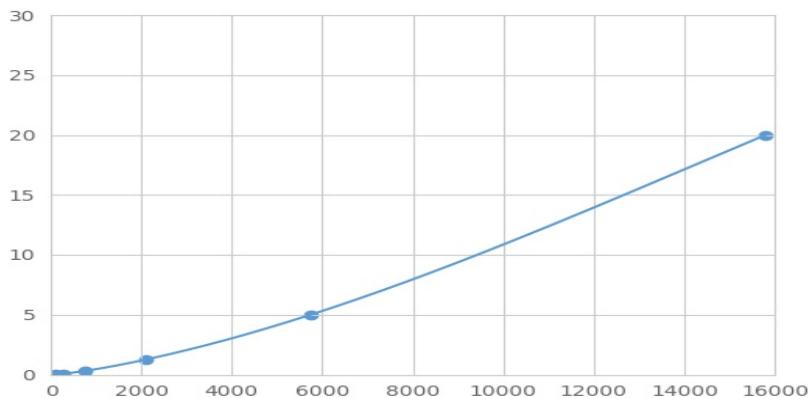
4SDHA^o ^ P-• ' ' ' | m^a] gnï o[^] ^a p' " ÑéÚ• hâääì â. ^a í NSDHAYq• -nï o[^]
 Èö^o ^ ° ‡^a - 1 • hœ• #™ÖSDHA^o ^ ^a G4" ° ‡öœ• #™o ^ ñö1^a • hPEärös #^a PEP
 t [1^a ÝpMFIÀÙMedian Fluorescence IntensityÞÖ¶Ý ä ÑöSDHAÖ=J i Í ĐÓ> Luminexé êÙ
 E»^a Pß äö=Ó

[Pß]

uâäääø . MFIÀE c ÜÝÙMFIÀ 1¼í Üvwí B^a z ÷ 8†Ù^a x¶` í k&ÀPßÖ5âääöö= =
 QyzâÙì ØzâB^a MFIÀQ{ zâÙì ØzâB^a | «âää Ü- ^öj ¶o} ~ ^öPßÖR2À
 I »^a 5R2À• €• -1Q BÖ1^o i > , f] ¼ „ Ä¢Eéê^a z curve expert 1.30^a Ýp äMFIÀ^a
 âää ...« Í ¶öö= ^a † 5åæDØF l > âää • öö= YMFIÀPß« âää ö} ~ ^öj ^a 4 äö
 MFIÀ ‡h ^öj ^a Pß« äö= ^a öö= † 5åæDØ^a ŽQ äöBáö=Ó

[^ \ Øp]

QZ %œ- Pß^a 2 ö=Qö 4¼» MFIÀQ• 4¼^a . . | Í O: W> âäääöMFIÀ¼Q{ zâÙXß^a âää
 äööö= QyzâÙYßÖZ ØQZ• C° i öœ['] ^a Í Ñ | öU, œØp» e ØÀÖ1^o i > ØÀü
 • âää Í Ö -BC5¼> Äö« Z Üz 5¼ _z ÈŽ• _z ñÚŽ• <=> Ä' B^a âää öMFIÀ_
 %œ• Ö% | öâää ¥| ' ^a BC öyÝpöì öBCü• âää Ó



(€• , f „ ... † ≠ ^ A‰Š) < CE• Ž • â ā

[CE]

0.02-20ng/mL.

[- < CE']

{ ÅQ20I ÜÝ ä ÜŽââäå å æÈBCE» ök &À• <Ðââê% ¶öð=Ó

[• ']

• Ž • > - < CESDHA^a f < CEYÍ Í Í " • R" EX• - §¶Ó
-OŽ• ø . I ~ ö'] ^a « ?ÂKg% Í ÐÍ Í " • R• - §¶ < CE^a • { . • Ž • ?ÂY" f <
CEÖÍ Í • R • - §¶Ó

[CZ =]

ç Ž => ä CE» Åö 4• ™ØCVI * ØCVÜ%β = SD/meanç 100

š Ôež` ZSE• Ž• ï Ñ ï Å» Å . ÇE» ¼< CE^a AE> . qœCE» 20

E^a é ÚPß« Zð= . ök &ÀøSDÀÓ

š Pêž t` 3I « ZSEö• Ž• éÚ ï Ñ ï Å» Å . ÇE» ¼CE» ^a AEI . i > Z² • Ž• e t CE
» 8E^a é ÚPß« Zð= . ök &ÀøSDÀÓ

š Ôež CV<10%

š Pêž CV<12%

[V»']

fCE»^a • Ž• G ! µÖ• ' 1° <=+ ^a ž' 3 > 4 Ý - 5%Ó

QÝÝŠñ• # • Ž• i ý 1 < CEÀö- ®^a BCµöÇE> Äö 2¼ + B² ^a xí UBCµÖ< = ï 8
= Ø < ï > ÄÖÍ E Z² BC¥I ÇE 5¼? Ý | §Qé êÓ

[BC ° Ô]

1 ï BCÿââäë• Žø . äÖF

2 ï • Üââäì . B100Î L^a • • è^a 376C...â Ú þ©î 1Ý OF

3 ï • ÖÅ^a • < CEí ÈA100Î L^a 376C...â Ú þ©î 1Ý OF

4_č • ñÚ3EF
 5_č • <ŒÍ ÈB100† L^a 376C È©† 30éŠF
 6_č • ñÚ3EF
 7_č • ī È150† L^a : 2éŠ1KØO

[ŒE]

1_č - - >Äø^a Ž• k« « Ä | m- | ö% % , - œEi mö®» Yéê^a · Mä? Ä G²
 » ÖR½Ž• - ° Ø
 2_č - ±öBC° ; Y• Žö ! ' œBC öi Đ5½5øBCœžfī Đ^a , • äöÜ öâ· ö> Ø
 3_č « ZŠEÖZ² Mä? Ä_ | ² èÚ^a zž<Œ' ŷ³ ' =^a , op• Ž• ÖœEœœBC5½^a µ¶·
 - ³ œEœ¥½' Ø
 4_č . • Ž• à, • Ž à, i > ^a « ÄÜ> ī¹] è-öMäÖä ` abc. • Ž• öBCœE° _€O-
 ö<Œ° i Ø
 5_č G ø<† NôÑ¥| 4• Ž » ½G½¾ÑÓ% • Ž(Ç Ç_č 5@A [' œ• ÷ø^a • Qr Y Ç
 ...öÅ" 4 œÀ« äTØ
 6_č Ä#Äö...ÄÚÚÙÑ? Ä_ | ² • R^a { Qi f -Ä^a « _ BC° ; èg\] - ®Ø...äÙGj >
 OL j ÄÅ` «^a , è ÿ` « Ø
 7_č - 5½ « gh_č 5½Æéł ýét> KØùöÇ' S ? Ä yé° ; öMœÖBCÿ, ÈÄÉKœE
 œ È• ûþØ
 8_č G .] ö5ø5½öÆI NôÑö 4™S? Ä « ZöBC° ; ^a %5QZ BC° ; ö? e†' ^a B
 CöÆ² 65½Söy` aT] Ø
 9_č • Ž• G« Eÿ&fN` aR< ^a l - , ī >ÄøuBCµ>Äê• ^a ? Ä_ ègBC° ; Y« E° ; «²
 l « ZŠE• Ž• šPēł ¶ö() Ø
 10_č . • Ž• " Yí¹ Èł Z[• Ž• l « Z[^]™<ŒZ² qö• öMä } ^a %5 « Đc<Œ° ; «² ö
 () Ø
 11_č > -] ö• Ž• Ñ^o ^ ö ; Ñ, > f QeÄr Y^a l - öeÄr Y%t` öÒÄ_č I Ö™ö_č ö™^j ' u « Z^a %5. , " ™+Ñ" • Ž• ? > -í¹ þyeÄr Yö<Œ^a > f . , x « üý ; > • Ž• <Œe Är YØ
 12_č , ' Ö äÑ œ• öð= ^a l ÷þ' BCT» ä<Œð=ÖÖ ö†‡? 5@A . Ñ < • Ö½,
 « • Ž• <Œ Ø
 13_č " • Ž• ? Ä« Š> -² BC! ' « T» ö xBC äö<Œ^a ~z^a Š• ØcBC' Ø
 14_č . 5½œEz Š> -48T• Ž• Ø
 15_č " • Ž• ¥| .. œj > ^a z 4í > - - ®- ° l \] ī¹ > Ù^a . þy 4« • { MœöÙÙ ^a Ü« Y
 þ\] ™ß \ Ø

[ÜÜÇà]

ÜÜ	? Ä, •	Çá ^ â
	âääääõ« i T	œEi Töääää=åæ
âää	` øñò« Üé	Üéö ` øñò
ê	È« çT	< ... i Èþ


Cloud-Clone Corp.

ç Ž =	• è ñ ò « Üé	' Ç E ø y D Üé: ñ ò C Í
	Ü Ä « Üé ` • Ž «	Üé Ü Ä ` • Ž
	e t' > ç Öp à á	i > • þ y ä å k ö ç i > k ö Öp à á
	• « ç T	< ... i È p
MFIÄ	Æ Ü • ö • Ž ¼ « ç T	i È p ^a ç T • h • Ž
	< ^ OP « i T	+ Ñ Ü ö < ^ OP
	< ^ < = « i T	• Ž y k ^ μ < + Ñ ä T ö < ^ < =
	P E ä r • A E!	ä å • Ž
	P E ä r • å æ Ð Ø «	' ; Ç E ø B C 5 ¼
	" « K Ø O P K Ø	G Ç E ø 1 ° Ö K Ø O P Ö K Ø
· Å	« i T ö . ^ j	i T . ^ a i > k l . Ç E B C
	« i T ö . / X † ≠ ^ ™	W` i T ö . / X † ≠ ^ ™
	Œ • R G . Ñ Ò ¼	i > k l . ^ a e t B C