ƒ ‹ F | Œfia‹ ˙'e›ß• |–M^D‹ ª¤s›p e ƒ¤"G‡ł§i

›p e^ §¡G §O«‹ ›p e

›p e‰ ¸„¡GNSC92-2731-M-038-001-

ıƒ · ¶¡¡G92 ƒ~01 ⁄ °01 ⁄ ØØ 92 ƒ~12 ⁄ °31 ⁄Ø

ıƒ ‡ ƒ ¡G» O ¥´ ˙⁄j ˙

›p e¥ D ø⁄¡HG¶ ¤»» ˚

›p e »P⁄H›ß¡G⁄ Œ…z

‡ł§i^ «‹¡G" °†‡ł§i

‡ B † zŁ¡fG¡¥»›p e¥ i ⁄ ‰ ¶‹ d,

⁄⁄ ¥` Œ 93 ƒ~3 ⁄ °29 ⁄Ø

ƒ ‹F │ Œfia‹ ·'e›ß•│–M^D‹ ª¤s›p ef¤"G‡ŁSi

»O¥_´ ·/j ·¶Q›«» „ƒ@ƒP¤˜¥¸›p„"

/E/Q/Gƒ~« /uS@‡ŁSi

›p e‰s„„¡GNSC91-2731-P038-001
ɪf ·`¶¡¡G92 ƒ~1 /°1 /Øf 92 ƒ~12 /°31 /Ø

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ɪ ƒ ‡ ƒ ¡G¥x ¥_´ ·/j ·
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⁄@¡B†⁄›z¥»ƒ~« ⁄uS@⁄″fie⁄ ¸›«´I

⁄G¡B» „„BS@"‹"p⁄ ¸"A ¨ƒ¤"G

⁄T¡B92 ƒ~« » „"A ¨'œ† "

¥|¡B92 ƒ~« "A ¨¥ ...˘¡Bfi ...˘⁄ ¸¶O¥ ¸† ¸›p„˘

⁄ ›¡B89 ƒ~« ƒ 92 ƒ~« "A ¨¥ ...˘† ¸›p„˘

⁄»¡B89 ƒ~« ƒ 92 ƒ~« "A ¨fi ...˘† ¸›p„˘

⁄C¡B89 ƒ~« ƒ 92 ƒ~« "A ¨¶O¥ ¸† ¸›p„˘

⁄K¡B» „⁄ •'‹ ª¤sƒ¤"G -- o" ‰ ⁄ ‹ ¿ "

⁄E¡B" ¥ ⁄@¡B⁄G

／@¡B†／›z¥»ƒ~« ／uS@／″fie／ ¸›«´I

¥»／ ／ ／500 MHz NMR ¥ H ¡ S » O ¥ _ ´ ›«»j ·¶Q„ ƒ @ ƒ P ¤ ¥ ¸¡¤ ›p„″ ' 88 ·ƒ~« (88 ƒ~8 ／° 1 ／Ø)¥ ¿ ƒ ¡ „ ¥ ¶}¡'Æ‟A ／ « ø ˜ –ŒS‟Œ‹ •| 'w¡A˜ ~ ˜ ɪƒ› ‚p„″¡C

92 ƒ~« ¡A‹ ／ F ¥ [j–¥ ~ ¡A92 ƒ~2 ／°› ¥¿ƒ ‹ ¶ O … — •¡q ƒ ″ ″ ／@¡r¡ A 8 ／°¥ ‹fl3000 ／ fi ／S¤ ¥ ¸¶q¡C‹ ／ F ／…S‟ß／ ¸¥ | ″ ß‚Œ˝S † ¥ ¸ ¥ ‟« S ¡A¥»／ ／ ' 92 ƒ~4 ／° 25¡B26 ／Ø' ¥»fi ` | ¿ ɱfiƒ@fi¶» ƒb¥˝ ‟«´ ·／S †¥ ¸‹ ª Q• |¡n¡A` A†$ARS › .. ¡Aƒ ／ · ƒ ƒ° ¥／[H¡C¥t¥~¡A‹ ／F¯ ¤ ¥ ¸‟ ／ Ł « K xƒ¡sAŒfl2 ƒ~6 ／°ƒV Œ ‹ •·| £ ¥‚¶Q† S ¥ ¡ºA– N ƒ´´ ／§SGI INDY computer system¡A／ fl¯‹ PC computer system¡ F ƒfi' 92 ƒ~10 ／°fi ›ª¡ A 12 ／°／ fl¯S ƒ‚¤¡C¥t¥~¡A‹ ／F¥ › ¿ ¥«¡†A 92 ƒ~10 ／°–Nƒ ‹ ¶ Ω—• · ‰ ／ ¡ q ƒ‟／G¡r¡C

- §A92 ƒ~／S／uS@／″fieƒ†¡G

1. – ¤ fi ／″¡B¥~‟ ″ e·Œe A¨(` ›p‟ A¨‹ ø4000 ／ fi ¡Aƒ ¶O„F216.8 , Ư,)¡B ‟ A ¨ƒ‹ F B†z¸† ¸›p, ŒfiˇŒ J ª ¥C
2. ` ¦ fi ／″– — fi S@ ‰m¡A..W¥[' ¶¡¶ }æ(ƒ ƒ S@)／S•~ ¨¡C
3. 92 ƒ~1 ／°27 ／Ø ¦ ¡§The Orientation for NMR Users of 500 MHz NMR¡ ¤A w„ e œ‟¤″ ¥ ¸‟ ¡A» ¦œ¥»fi 500 MHz NMR ／S» „／ ¶—¡B ƒ p ƒ W‰ux„B eœ‟ ` • N ˇ¡B, Œ fifšœe／Ł‟k ¥¡C¤ˆ¥ †jXWIN-NMR ／S† ñØ¤ ¥ ¸—— ¡A¥ … ¤ ·`„#F¤ L fl ¨ˇƒŒCƒL
4. 92 ƒ~2 ／°1 ／Ø› §Cƒ ‹ ¶ O ¡ q ƒ／@¡r¡A¤ˆ„Œ‹ I¡C
5. 92 ƒ~4 ／°26¡B27 ／Ø ¦ ¥ Œ' °¡§The Biotechnological Applications of

Nuclear Magnetic Resonance¡ ¤ ‹ ª Q • | ¡ A £ ⁄ F ‡ ¥ ⁄¿S⁄¶†—¥~

⁄ ″ ¥ ~ ƒ U ‹ ª ¤ s , g ¯¥ ‹y»P⁄ ¤ ¡C

6. ' w · ` « Oi¡»A¤ˇ„S« O « ø ‡ ¤ ¸¡'C°fl
7. , Œˇ⁄S‡ ¥ »P ⁄s¡C
8. 92 ƒ~10 ⁄ ° ‰ ⁄ ƒ ‹ ¶ O ¡ q ¡ƒA¤"ˆ"Œ‹¡Cr
9. 92 ƒ~12 ⁄°¡AS „ ƒ ¤ı₱C computer ⁄ fl ¯ ⁄ ¸ ‹ ˆ ⁄S‡ƒ¥ w¯Ø fl¯ ı

ƒ ¡C

⁄ ¢B» „„BS@"‹"p⁄ ¸"A ¨ƒ¤"G

1. „BS@"‹"p¡G

¥»» „‡] ‡'85 ƒ~12 ⁄ ° , ¸ 86ƒ~1 ⁄°¯ ƒ‹¡A86 ƒ~3 ⁄°¥ ¿ ƒ ¡ ¡A¯ ' » O ¥ _ ´ ⁄j» ˙ ƒ„@ƒP ⁄ '"¡A‡]ƒ ‡@NMR ¿ , ¢ ›ßA‡ƒ¤›ßƒ‡‡\ ⁄ , – ¥ ¶ ¡'Bi ›ß » æ ¯'¡eB›ßL † Q fl'¡eB›ßı ‹ ‰'e¸¶ß ` n " F ¢ ›ßNMR¡C «˙' ¤ ' w §‡W¸ƒw¶ O … – •‹¿ ¥ , ' eß˜• |‡• «˜¡‡A¥B¿ , ¢ ›ß •¥|»» „⁄§¿ , ⁄ ⁄ ¡A £ "•NMR « ⁄§„BS@¡A¥ H £⁄"A ¨« ~ ‰¥¡A¤ˆƒ‡ ‡¥ ¸¿ , ⁄§¥ fl ¡C

NMR «˙,uƒ‡` ¿ fi v fl ¯,ES@›ß⁄ †Q.. z ƒfi¡vA– M ¢d §@» „" [" ß @¤¡C y „BS@⁄Wƒ‡¡ §x¥ _ ´ ˙⁄DRX-500 fi "˘ƒ@fi¶» fi "¤¥ "¸ †z‡W« h¤¡B ¡ §x ¥ _ ´ ˙⁄DRX-500 fi "˘ƒ@fi¶» fi ¥~¤˘¥ "¸ †z‡W« h¤ ⁄ ¸¡§DRX-500 fi "˘ƒ@ fi¶» ¤˘¥ ¸¥ ‰"¡¤ ¥‡W‰d¡A‹ G £‰fi ⁄"¥~…¸«~¡A‹ ¥ i ¶ ¶ §¶¡C

92 ƒ~« „BS@•§"p¡Gƒhƒ~""„BS@¤˘– o § ›ƒ‡¥ R , ¸ "⁄H¸⁄Q¯ ⁄ ·'¡C¥»» „' 92 ƒ~· ¶¡⁄§„BS@¥¿– `¡A¥B–N» „⁄§„BS@¥R⁄ o·¡SA¤C⁄°¥ §¡fi ⁄"‹ø27 ¥ ¡B‹ø78 ⁄ p fi¡fF¥~‹ø87 ¥ ¡B254 ⁄ p fi¡fF¥~¤˘¥ ¸¶ q ⁄ w W„L˘¥`¸¶q""75%¡A "A ¨⁄§„E¯ «˙‹ø30 › ¡Afi ¥~⁄§„E¯ «˙⁄ æ ¶ WL50%¡F¥ «e¥»» „""¤˘¥ ¸¶q ⁄w¥R⁄ o·¡SC‹ ⁄ F W¥"[A ¨ E • |¶ Q«» „⁄§¤˘¥ ¸" ¡A¥»⁄ ⁄ ¥HCD ⁄ø⁄§,E fi˘‡˘¥ "A ¨› ¥¿‹ §K¶O¡A¥»⁄ ⁄ "",Efi˘¥i‡˘ƒs⁄@ƒ~¥ ¡C

• ¥»» „ o¥˝"‹"pfi ¡A¥»⁄ ⁄ ‡˘ƒ‡ ‡¯ ⁄p† ¡A¤ ƒ¤›ß £ƒ‡¥»⁄ ⁄ ⁄§¶ »¤ » ° ¥¥¡B⁄ †Q.. z ¿fi¡vB‡ fl ¿ • –§⁄ ¸‡h\ ⁄ – – ´¥~¡A¥tƒ‡¤˘ ¨† – i · …e¡F ¥˝ ƒb" ß@.. t ⁄Ł«hƒ‡› t.§¶¶fi a ¥¥¡˝B–i E· ¥¥¡˝B§ı' œ » ¥ ⁄¥¸˝ƒ › »˝¥ ¥˝ ¥⁄ u{fiv‹ ‡¯ ⁄p† "˝⁄ u{–M›ß¡A¥ H‡" « "‹"p⁄ ·'¡C

' 92 ƒ~· ¶¡¡Aƒ] „ q , £ ¤ t ¡¥"X˘†›{yw"–a • l ƒ •›P¤¡A,g‰ U´⁄u

{ fi v ¤ § U ⁄ U ¡ A † { ⁄ w › ·_§„ƒ¤¡A„B§@¥¿–`¡C

' 92 ƒ~6 ⁄ ° · £ ¥ X ¡ y „ q , £ ‡ n w ¯ Ø ¡A¯¡z⁄•§Pl¥[´„w"Œfi•|ƒ M

‡B' 92 ƒ~10 ⁄°fi …•38 , Ʊ¡A¥ t t X¥fi›fi.•18 , Ʊ¡A¤ˇ¥ fi 500 MHz NMR

⁄ § „ q , ‡n–w¯Ø ¶¶§Ql¯¡A¤^' 92 ƒ~12 ⁄°§ ƒ¤, ¸ ¯ ¡Ø¥ «e⁄§' ° fl"‹

" p » P ˘ F –«–§¡‹Dƒ¡I

2. " A¨ƒ¤" ¢¡G

	fi ⁄"	fi ¥~	` ›p
¥ …˘	319	1042	1361
fi …˘(⁄pfi)	933.5	3045	3978.5
ƒ‹¶O(⁄,)	69897	2098085	2167982

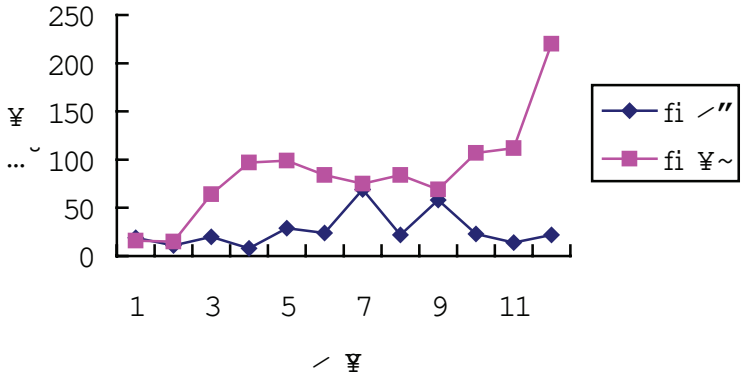
ø¡G, † ‰ 92ƒƒ~« » „" A¨'œ† "

⁄T¡B92 ƒ~« » „"A ¨'œt "

⁄ ¥	¤ ˘ ¥ ⁄¿H	fi¸ ⁄ ¤ˇ fi …˘	¥i¿ ⁄ ¤ˇ ¥ …˘	¥ ¿Œ ‹ ♦¤ fi …˘	˘¥Œ¿ ‹ ♦¤ ¥ …˘	˘fi¥ ¿ ⁄ ƒ‹	¶O Œ ‹ ♦ƒ‹ ¶O
1	35	53	19	79	16	2213	74320
2	26	49.5	11	64.5	15	1777	35550
3	84	173	20	286.5	64	8517	183300
4	105	28	8	227	97	1166	150390
5	138	143	29	608	99	7254	318700
6	108	56	24	390.5	84	2200	261100
7	144	203	69	311	75	8072	172200
8	106	35.5	22	300	84	1324	180200
9	127	124.5	58	80.5	69	4824	56400
10	130	29.5	23	148.5	107	14050	150950
11	126	27.5	14	194	112	14100	194650
12	242	11	22	355.5	220	4400	320325
` ›p	1371	933.5	319	3045	1042	69897	2098085

¥|¡B92 ƒ~« "A ¨¥ …˘fi …˘¶O¥ ¸† ¸›p„˘

1. fi ⁄ " ¥ ~ ¤ ˘ ¥ ¥¸ …˘⁄æ‚ß"



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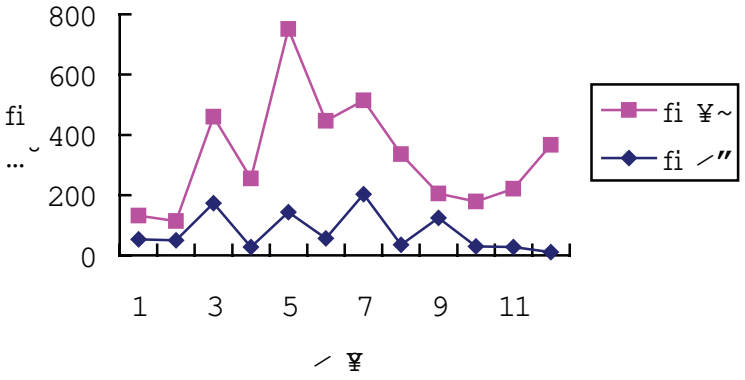
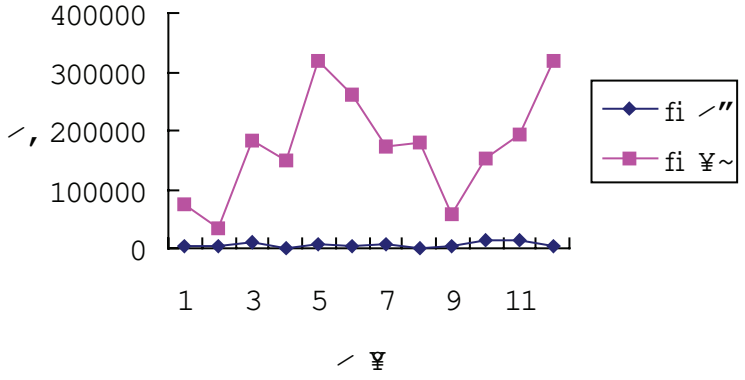
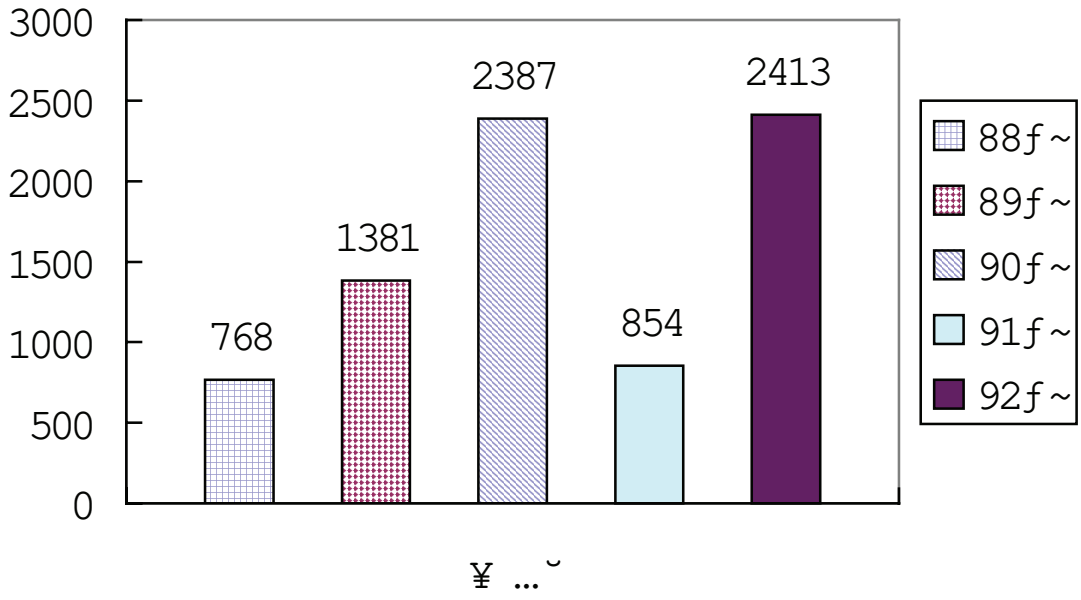


3. fi ⁄ " ¥¤¶O¥¸ ¸ ⁄ æß"



ノ›¡B88ƒ~« ƒ 92ƒ~« "A ¨¥ …˘†¸›p„ˇ



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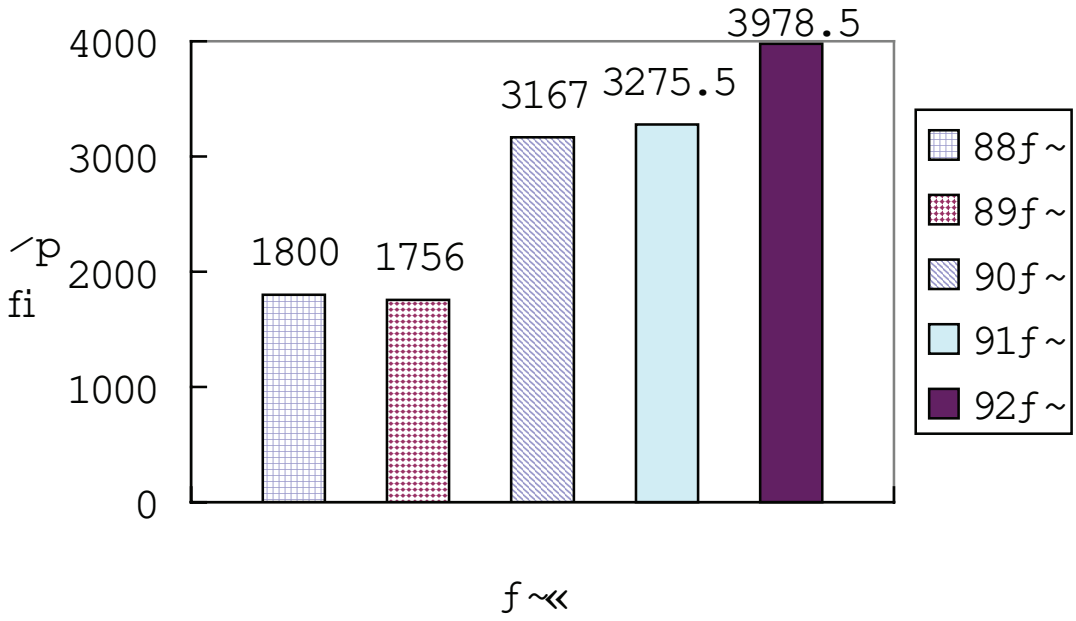

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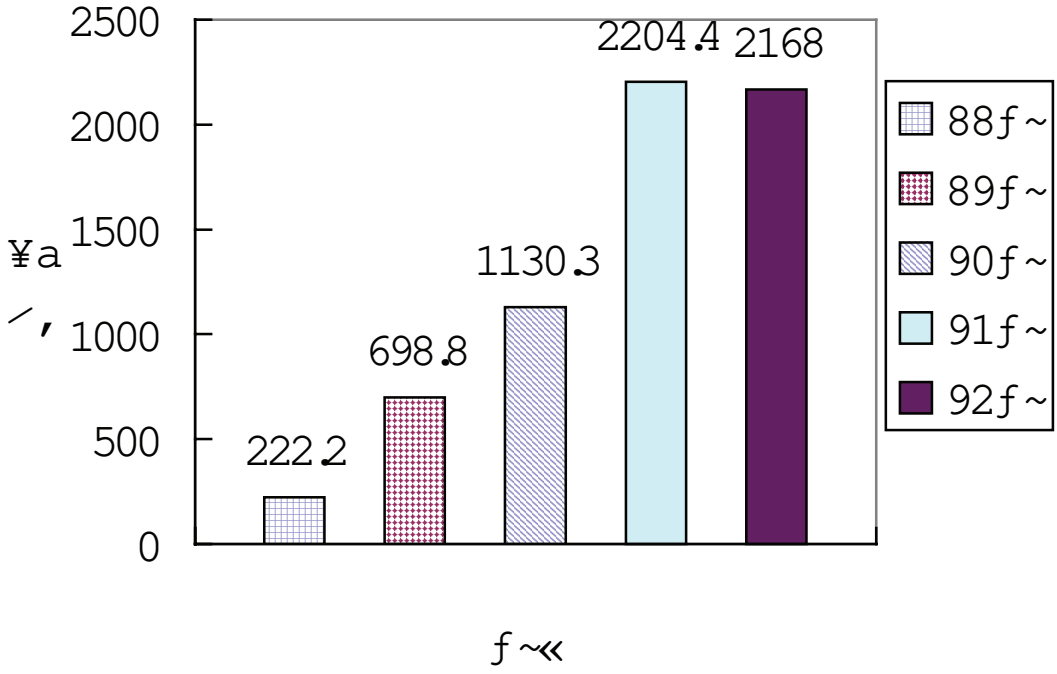

⁄K¡B» „⁄ • '< ª¤sƒ¤"G -- o" ‰ ⁄ < ¿ " (1998-2003)

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