

SEQUENCE LISTING

<110> Agency for Science, Technology and Research
Tan Tock Seng Hospital

<120> AN APTAMER FOR DENGUE VIRUS AND RELATED METHODS AND PRODUCTS

<130> 2000474

<160> 57

<170> PatentIn version 3.5

<210> 1

<211> 352

<212> PRT

<213> Dengue virus

<400> 1

Asp	Ser	Gly	Cys	Val	Ile	Asn	Trp	Lys	Gly	Arg	Glu	Leu	Lys	Cys	Gly
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Ser	Gly	Ile	Phe	Val	Thr	Asn	Glu	Val	His	Thr	Trp	Thr	Glu	Gln	Tyr
			20					25					30		

Lys	Phe	Gln	Ala	Asp	Ser	Pro	Lys	Arg	Leu	Ser	Ala	Ala	Ile	Gly	Lys
		35					40					45			

Ala	Trp	Glu	Glu	Gly	Val	Cys	Gly	Ile	Arg	Ser	Ala	Thr	Arg	Leu	Glu
	50					55					60				

Asn	Ile	Met	Trp	Lys	Gln	Ile	Ser	Asn	Glu	Leu	Asn	His	Ile	Leu	Leu
65					70					75					80

Glu	Asn	Asp	Met	Lys	Phe	Thr	Val	Val	Val	Gly	Asp	Val	Ser	Gly	Ile
				85					90					95	

Leu	Ala	Gln	Gly	Lys	Lys	Met	Ile	Arg	Pro	Gln	Pro	Met	Glu	His	Lys
			100					105					110		

Tyr	Ser	Trp	Lys	Ser	Trp	Gly	Lys	Ala	Lys	Ile	Ile	Gly	Ala	Asp	Val
		115					120					125			

Gln Asn Thr Thr Phe Ile Ile Asp Gly Pro Asn Thr Pro Glu Cys Pro
130 135 140

Asp Asn Gln Arg Ala Trp Asn Ile Trp Glu Val Glu Asp Tyr Gly Phe
145 150 155 160

Gly Ile Phe Thr Thr Asn Ile Trp Leu Lys Leu Arg Asp Ser Tyr Thr
165 170 175

Gln Val Cys Asp His Arg Leu Met Ser Ala Ala Ile Lys Asp Ser Lys
180 185 190

Ala Val His Ala Asp Met Gly Tyr Trp Ile Glu Ser Glu Lys Asn Glu
195 200 205

Thr Trp Lys Leu Ala Arg Ala Ser Phe Ile Glu Val Lys Thr Cys Ile
210 215 220

Trp Pro Lys Ser His Thr Leu Trp Ser Asn Gly Val Leu Glu Ser Glu
225 230 235 240

Met Ile Ile Pro Lys Ile Tyr Gly Gly Pro Ile Ser Gln His Asn Tyr
245 250 255

Arg Pro Gly Tyr Phe Thr Gln Thr Ala Gly Pro Trp His Leu Gly Lys
260 265 270

Leu Glu Leu Asp Phe Asp Leu Cys Glu Gly Thr Thr Val Val Val Asp
275 280 285

Glu His Cys Gly Asn Arg Gly Pro Ser Leu Arg Thr Thr Thr Val Thr
290 295 300

Gly Lys Thr Ile His Glu Trp Cys Cys Arg Ser Cys Thr Leu Pro Pro
305 310 315 320

Leu Arg Phe Lys Gly Glu Asp Gly Cys Trp Tyr Gly Met Glu Ile Arg
325 330 335

Pro Val Lys Glu Lys Glu Glu Asn Leu Val Lys Ser Met Val Ser Ala
340 345 350

<210> 2
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<212> PRT
<213> Dengue virus

<400> 2

Asp Ser Gly Cys Val Val Ser Trp Lys Asn Lys Glu Leu Lys Cys Gly
1 5 10 15

Ser Gly Ile Phe Ile Thr Asp Asn Val His Thr Trp Thr Glu Gln Tyr
20 25 30

Lys Phe Gln Pro Glu Ser Pro Ser Lys Leu Ala Ser Ala Ile Gln Lys
35 40 45

Ala His Glu Glu Gly Ile Cys Gly Ile Arg Ser Val Thr Arg Leu Glu
50 55 60

Asn Leu Met Trp Lys Gln Ile Thr Pro Glu Leu Asn His Ile Leu Ser
65 70 75 80

Glu Asn Glu Val Lys Leu Thr Ile Met Thr Gly Asp Ile Lys Gly Ile
85 90 95

Met Gln Ala Gly Lys Arg Ser Leu Arg Pro Gln Pro Thr Glu Leu Lys
100 105 110

Tyr Ser Trp Lys Thr Trp Gly Lys Ala Lys Met Leu Ser Thr Glu Ser
115 120 125

His Asn Gln Thr Phe Leu Ile Asp Gly Pro Glu Thr Ala Glu Cys Pro
130 135 140

Asn Thr Asn Arg Ala Trp Asn Ser Leu Glu Val Glu Asp Tyr Gly Phe
145 150 155 160

Gly Val Phe Thr Thr Asn Ile Trp Leu Lys Leu Lys Glu Lys Gln Asp
165 170 175

Val Phe Cys Asp Ser Lys Leu Met Ser Ala Ala Ile Lys Asp Asn Arg
180 185 190

Ala Val His Ala Asp Met Gly Tyr Trp Ile Glu Ser Ala Leu Asn Asp
195 200 205

Thr Trp Lys Ile Glu Lys Ala Ser Phe Ile Glu Val Lys Asn Cys His
210 215 220

Trp Pro Lys Ser His Thr Leu Trp Ser Asn Gly Val Leu Glu Ser Glu
225 230 235 240

Met Ile Ile Pro Lys Asn Leu Ala Gly Pro Val Ser Gln His Asn Tyr
245 250 255

Arg Pro Gly Tyr His Thr Gln Ile Thr Gly Pro Trp His Leu Gly Lys
260 265 270

Leu Glu Met Asp Phe Asp Phe Cys Asp Gly Thr Thr Val Val Val Thr
275 280 285

Glu Asp Cys Gly Asn Arg Gly Pro Ser Leu Arg Thr Thr Thr Ala Ser
290 295 300

Gly Lys Leu Ile Thr Glu Trp Cys Cys Arg Ser Cys Thr Leu Pro Pro
305 310 315 320

Leu Arg Tyr Arg Gly Glu Asp Gly Cys Trp Tyr Gly Met Glu Ile Arg
325 330 335

Pro Leu Lys Glu Lys Glu Glu Asn Leu Val Asn Ser Leu Val Thr Ala

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345

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<210> 3

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<212> PRT

<213> Dengue virus

<400> 3

Asp Met Gly Cys Val Ile Asn Trp Lys Gly Lys Glu Leu Lys Cys Gly
 1 5 10 15

Ser Gly Ile Phe Val Thr Asn Glu Val His Thr Trp Thr Glu Gln Tyr
 20 25 30

Lys Phe Gln Ala Asp Ser Pro Lys Arg Leu Ala Thr Ala Ile Ala Gly
 35 40 45

Ala Trp Glu Asn Gly Val Cys Gly Ile Arg Ser Thr Thr Arg Met Glu
 50 55 60

Asn Leu Leu Trp Lys Gln Ile Ala Asn Glu Leu Asn Tyr Ile Leu Trp
 65 70 75 80

Glu Asn Asn Ile Lys Leu Thr Val Val Val Gly Asp Thr Leu Gly Val
 85 90 95

Leu Glu Gln Gly Lys Arg Thr Leu Thr Pro Gln Pro Met Glu Leu Lys
 100 105 110

Tyr Ser Trp Lys Thr Trp Gly Lys Ala Lys Ile Val Thr Ala Glu Thr
 115 120 125

Gln Asn Ser Ser Phe Ile Ile Asp Gly Pro Asn Thr Pro Glu Cys Pro
 130 135 140

Ser Ala Ser Arg Ala Trp Asn Val Trp Glu Val Glu Asp Tyr Gly Phe
 145 150 155 160

Gly Val Phe Thr Thr Asn Ile Trp Leu Lys Leu Arg Glu Val Tyr Thr
165 170 175

Gln Leu Cys Asp His Arg Leu Met Ser Ala Ala Val Lys Asp Glu Arg
180 185 190

Ala Val His Ala Asp Met Gly Tyr Trp Ile Glu Ser Gln Lys Asn Gly
195 200 205

Ser Trp Lys Leu Glu Lys Ala Ser Leu Ile Glu Val Lys Thr Cys Thr
210 215 220

Trp Pro Lys Ser His Thr Leu Trp Thr Asn Gly Val Leu Glu Ser Asp
225 230 235 240

Met Ile Ile Pro Lys Ser Leu Ala Gly Pro Ile Ser Gln His Asn Tyr
245 250 255

Arg Pro Gly Tyr His Thr Gln Thr Ala Gly Pro Trp His Leu Gly Lys
260 265 270

Leu Glu Leu Asp Phe Asn Tyr Cys Glu Gly Thr Thr Val Val Ile Thr
275 280 285

Glu Ser Cys Gly Thr Arg Gly Pro Ser Leu Arg Thr Thr Thr Val Ser
290 295 300

Gly Lys Leu Ile His Glu Trp Cys Cys Arg Ser Cys Thr Leu Pro Pro
305 310 315 320

Leu Arg Tyr Met Gly Glu Asp Gly Cys Trp Tyr Gly Met Glu Ile Arg
325 330 335

Pro Ile Ser Glu Lys Glu Glu Asn Met Val Lys Ser Leu Val Ser Ala
340 345 350

<210> 4
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<212> PRT

<213> Dengue virus

<400> 4

Asp Met Gly Cys Val Ala Ser Trp Ser Gly Lys Glu Leu Lys Cys Gly
1 5 10 15

Ser Gly Ile Phe Val Val Asp Asn Val His Thr Trp Thr Glu Gln Tyr
20 25 30

Lys Phe Gln Pro Glu Ser Pro Ala Arg Leu Ala Ser Ala Ile Leu Asn
35 40 45

Ala His Lys Asp Gly Val Cys Gly Ile Arg Ser Thr Thr Arg Leu Glu
50 55 60

Asn Val Met Trp Lys Gln Ile Thr Asn Glu Leu Asn Tyr Val Leu Trp
65 70 75 80

Glu Gly Gly His Asp Leu Thr Val Val Ala Gly Asp Val Lys Gly Val
85 90 95

Leu Thr Lys Gly Lys Arg Ala Leu Thr Pro Pro Val Ser Asp Leu Lys
100 105 110

Tyr Ser Trp Lys Thr Trp Gly Lys Ala Lys Ile Phe Thr Pro Glu Ala
115 120 125

Arg Asn Ser Thr Phe Leu Ile Asp Gly Pro Asp Thr Ser Glu Cys Pro
130 135 140

Asn Glu Arg Arg Ala Trp Asn Ser Leu Glu Val Glu Asp Tyr Gly Phe
145 150 155 160

Gly Met Phe Thr Thr Asn Ile Trp Met Lys Phe Arg Glu Gly Ser Ser
165 170 175

Glu Val Cys Asp His Arg Leu Met Ser Ala Ala Ile Lys Asp Gln Lys

180	185	190															
Ala	Val	His	Ala	Asp	Met	Gly	Tyr	Trp	Ile	Glu	Ser	Ser	Lys	Asn	Gln		
	195						200					205					
Thr	Trp	Gln	Ile	Glu	Lys	Ala	Ser	Leu	Ile	Glu	Val	Lys	Thr	Cys	Leu		
	210					215					220						
Trp	Pro	Lys	Thr	His	Thr	Leu	Trp	Ser	Asn	Gly	Val	Leu	Glu	Ser	Gln		
225					230					235					240		
Met	Leu	Ile	Pro	Lys	Ser	Tyr	Ala	Gly	Pro	Phe	Ser	Gln	His	Asn	Tyr		
				245					250					255			
Arg	Gln	Gly	Tyr	Ala	Thr	Gln	Thr	Val	Gly	Pro	Trp	His	Leu	Gly	Lys		
			260					265					270				
Leu	Glu	Ile	Asp	Phe	Gly	Glu	Cys	Pro	Gly	Thr	Thr	Val	Thr	Ile	Gln		
		275					280					285					
Glu	Asp	Cys	Asp	His	Arg	Gly	Pro	Ser	Leu	Arg	Thr	Thr	Thr	Ala	Ser		
	290					295					300						
Gly	Lys	Leu	Val	Thr	Gln	Trp	Cys	Cys	Arg	Ser	Cys	Thr	Met	Pro	Pro		
305					310					315					320		
Leu	Arg	Phe	Leu	Gly	Glu	Asp	Gly	Cys	Trp	Tyr	Gly	Met	Glu	Ile	Arg		
				325					330					335			
Pro	Leu	Ser	Glu	Lys	Glu	Glu	Asn	Met	Val	Lys	Ser	Gln	Val	Thr	Ala		
			340					345					350				

<210> 5
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 <213> Dengue virus

 <400> 5

Asp Ser Gly Cys Val Ile Asn Trp Lys Gly Arg Glu Leu Lys Cys Gly
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Ser Gly Ile Phe Val Thr Asn Glu Val His Thr Trp Thr Glu Gln Tyr
20 25 30

Lys Phe Gln Ala Asp Ser Pro Lys Arg Leu Ser Ala Ala Ile Gly Lys
35 40 45

Ala Trp Glu Glu Gly Val Cys Gly Ile Arg Ser Ala Thr Arg Leu Glu
50 55 60

Asn Ile Met Trp Lys Gln Ile Ser Asn Glu Leu Asn His Ile Leu Leu
65 70 75 80

Glu Asn Asp Met Lys Phe Thr Val Val Val Gly Asp Ala Asn Gly Ile
85 90 95

Leu Thr Gln Gly Lys Lys Met Ile Arg Pro Gln Pro Met Glu His Lys
100 105 110

Tyr Ser Trp Lys Ser Trp Gly Lys Ala Lys Ile Ile Gly Ala Asp Thr
115 120 125

Gln Asn Thr Thr Phe Ile Ile Asp Gly Pro Asp Thr Pro Glu Cys Pro
130 135 140

Asp Asp Gln Arg Ala Trp Asn Ile Trp Glu Val Glu Asp Tyr Gly Phe
145 150 155 160

Gly Val Phe Thr Thr Asn Ile Trp Leu Lys Leu Arg Asp Ser Tyr Thr
165 170 175

Gln Met Cys Asp His Arg Leu Met Ser Ala Ala Ile Lys Asp Ser Lys
180 185 190

Ala Val His Ala Asp Met Gly Tyr Trp Ile Glu Ser Glu Lys Asn Glu
195 200 205

Thr Trp Lys Leu Ala Arg Ala Ser Phe Ile Glu Val Lys Thr Cys Ile
210 215 220

Trp Pro Arg Ser His Thr Leu Trp Ser Asn Gly Val Leu Glu Ser Glu
225 230 235 240

Met Ile Ile Pro Lys Ile Tyr Gly Gly Pro Ile Ser Gln His Asn Tyr
245 250 255

Arg Pro Gly Tyr Phe Thr Gln Thr Ala Gly Pro Trp His Leu Gly Lys
260 265 270

Leu Glu Leu Asp Phe Asn Leu Cys Glu Gly Thr Thr Val Val Val Asp
275 280 285

Glu His Cys Gly Asn Arg Gly Pro Ser Leu Arg Thr Thr Thr Val Thr
290 295 300

Gly Lys Ile Ile His Glu Trp Cys Cys Arg Ser Cys Thr Leu Pro Pro
305 310 315 320

Leu Arg Phe Arg Gly Glu Asp Gly Cys Trp Tyr Gly Met Glu Ile Arg
325 330 335

Pro Val Lys Glu Lys Glu Glu Asn Leu Val Arg Ser Met Val Ser Ala
340 345 350

<210> 6
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<212> PRT
<213> Dengue virus

<400> 6

Asp Ser Gly Cys Val Ile Asn Trp Lys Gly Arg Glu Leu Lys Cys Gly
1 5 10 15

Ser Gly Ile Phe Val Thr Asn Glu Val His Thr Trp Thr Glu Gln Tyr

	20		25		30														
Lys	Phe	Gln	Ala	Asp	Ser	Pro	Lys	Arg	Leu	Ser	Ala	Ala	Ile	Gly	Lys				
		35					40					45							
Ala	Trp	Glu	Glu	Gly	Val	Cys	Gly	Ile	Arg	Ser	Ala	Thr	Arg	Leu	Glu				
	50					55					60								
Asn	Ile	Met	Trp	Lys	Gln	Ile	Ser	Asn	Glu	Leu	Asn	His	Ile	Leu	Leu				
65					70					75					80				
Glu	Asn	Asp	Met	Lys	Phe	Thr	Val	Val	Val	Gly	Asp	Val	Ala	Gly	Ile				
				85					90					95					
Leu	Ala	Gln	Gly	Lys	Lys	Met	Ile	Arg	Pro	Gln	Pro	Met	Glu	His	Lys				
			100					105					110						
Tyr	Ser	Trp	Lys	Ser	Trp	Gly	Lys	Ala	Lys	Ile	Ile	Gly	Ala	Asp	Val				
		115					120					125							
Gln	Asn	Thr	Thr	Phe	Ile	Ile	Asp	Gly	Pro	Asn	Thr	Pro	Glu	Cys	Pro				
	130					135					140								
Asp	Asp	Gln	Arg	Ala	Trp	Asn	Ile	Trp	Glu	Val	Glu	Asp	Tyr	Gly	Phe				
145					150				155						160				
Gly	Ile	Phe	Thr	Thr	Asn	Ile	Trp	Leu	Lys	Leu	Arg	Asp	Ser	Tyr	Thr				
				165					170					175					
Gln	Val	Cys	Asp	His	Arg	Leu	Met	Ser	Ala	Ala	Ile	Lys	Asp	Ser	Lys				
			180					185					190						
Ala	Val	His	Ala	Asp	Met	Gly	Tyr	Trp	Ile	Glu	Ser	Glu	Lys	Asn	Glu				
	195						200					205							
Thr	Trp	Lys	Leu	Ala	Arg	Ala	Ser	Phe	Ile	Glu	Val	Lys	Thr	Cys	Ile				
	210					215					220								

Trp Pro Lys Ser His Thr Leu Trp Ser Asn Gly Val Leu Glu Ser Glu
225 230 235 240

Met Ile Ile Pro Lys Ile Tyr Gly Gly Pro Ile Ser Gln His Asn Tyr
245 250 255

Arg Pro Gly Tyr Phe Thr Gln Thr Ala Gly Pro Trp His Leu Gly Lys
260 265 270

Leu Glu Leu Asp Phe Asp Leu Cys Glu Gly Thr Thr Val Val Val Asp
275 280 285

Glu His Cys Gly Asn Arg Gly Pro Ser Leu Arg Thr Thr Thr Val Thr
290 295 300

Gly Lys Ile Ile His Glu Trp Cys Cys Arg Ser Cys Thr Leu Pro Pro
305 310 315 320

Leu Arg Phe Arg Gly Glu Asp Gly Cys Trp Tyr Gly Met Glu Ile Arg
325 330 335

Pro Val Lys Glu Lys Glu Glu Asn Leu Val Lys Ser Met Val Ser Ala
340 345 350

<210> 7
<211> 358
<212> PRT
<213> Artificial Sequence

<220>
<223> modified NS1

<400> 7

Asp Ser Gly Cys Val Ile Asn Trp Lys Gly Arg Glu Leu Lys Cys Gly
1 5 10 15

Ser Gly Ile Phe Val Thr Asn Glu Val His Thr Trp Thr Glu Gln Tyr
20 25 30

Lys Phe Gln Ala Asp Ser Pro Lys Arg Leu Ser Ala Ala Ile Gly Lys
35 40 45

Ala Trp Glu Glu Gly Val Cys Gly Ile Arg Ser Ala Thr Arg Leu Glu
50 55 60

Asn Ile Met Trp Lys Gln Ile Ser Asn Glu Leu Asn His Ile Leu Leu
65 70 75 80

Glu Asn Asp Met Lys Phe Thr Val Val Val Gly Asp Val Ser Gly Ile
85 90 95

Leu Ala Gln Gly Lys Lys Met Ile Arg Pro Gln Pro Met Glu His Lys
100 105 110

Tyr Ser Trp Lys Ser Trp Gly Lys Ala Lys Ile Ile Gly Ala Asp Val
115 120 125

Gln Asn Thr Thr Phe Ile Ile Asp Gly Pro Asn Thr Pro Glu Cys Pro
130 135 140

Asp Asn Gln Arg Ala Trp Asn Ile Trp Glu Val Glu Asp Tyr Gly Phe
145 150 155 160

Gly Ile Phe Thr Thr Asn Ile Trp Leu Lys Leu Arg Asp Ser Tyr Thr
165 170 175

Gln Val Cys Asp His Arg Leu Met Ser Ala Ala Ile Lys Asp Ser Lys
180 185 190

Ala Val His Ala Asp Met Gly Tyr Trp Ile Glu Ser Glu Lys Asn Glu
195 200 205

Thr Trp Lys Leu Ala Arg Ala Ser Phe Ile Glu Val Lys Thr Cys Ile
210 215 220

Trp Pro Lys Ser His Thr Leu Trp Ser Asn Gly Val Leu Glu Ser Glu

225 230 235 240

Arg Pro Gly Tyr Phe Thr Gln Thr Ala Gly Pro Trp His Leu Gly Lys
260 265 270

Glu His Cys Gly Asn Arg Gly Pro Ser Leu Arg Thr Thr Thr Val Thr
290 295 300

Leu Arg Phe Lys Gly Glu Asp Gly Cys Trp Tyr Gly Met Glu Ile Arg
325 330 335

His His His His His His
355

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<220>
<223> modified NS1
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Asp Ser Gly Cys Val Val Ser Trp Lys Asn Lys Glu Leu Lys Cys Gly
1 5 10 15

30

Thr Trp Lys Ile Glu Lys Ala Ser Phe Ile Glu Val Lys Asn Cys His
210 215 220

Trp Pro Lys Ser His Thr Leu Trp Ser Asn Gly Val Leu Glu Ser Glu
225 230 235 240

Met Ile Ile Pro Lys Asn Leu Ala Gly Pro Val Ser Gln His Asn Tyr
245 250 255

Arg Pro Gly Tyr His Thr Gln Ile Thr Gly Pro Trp His Leu Gly Lys
260 265 270

Leu Glu Met Asp Phe Asp Phe Cys Asp Gly Thr Thr Val Val Val Thr
275 280 285

Glu Asp Cys Gly Asn Arg Gly Pro Ser Leu Arg Thr Thr Thr Ala Ser
290 295 300

Gly Lys Leu Ile Thr Glu Trp Cys Cys Arg Ser Cys Thr Leu Pro Pro
305 310 315 320

Leu Arg Tyr Arg Gly Glu Asp Gly Cys Trp Tyr Gly Met Glu Ile Arg
325 330 335

Pro Leu Lys Glu Lys Glu Glu Asn Leu Val Asn Ser Leu Val Thr Ala
340 345 350

His His His His His His
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<210> 9
<211> 358
<212> PRT
<213> Artificial Sequence

<220>
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<400> 9

Asp Met Gly Cys Val Ile Asn Trp Lys Gly Lys Glu Leu Lys Cys Gly
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Ser Gly Ile Phe Val Thr Asn Glu Val His Thr Trp Thr Glu Gln Tyr
20 25 30

Lys Phe Gln Ala Asp Ser Pro Lys Arg Leu Ala Thr Ala Ile Ala Gly
35 40 45

Ala Trp Glu Asn Gly Val Cys Gly Ile Arg Ser Thr Thr Arg Met Glu
50 55 60

Asn Leu Leu Trp Lys Gln Ile Ala Asn Glu Leu Asn Tyr Ile Leu Trp
65 70 75 80

Glu Asn Asn Ile Lys Leu Thr Val Val Val Gly Asp Thr Leu Gly Val
85 90 95

Leu Glu Gln Gly Lys Arg Thr Leu Thr Pro Gln Pro Met Glu Leu Lys
100 105 110

Tyr Ser Trp Lys Thr Trp Gly Lys Ala Lys Ile Val Thr Ala Glu Thr
115 120 125

Gln Asn Ser Ser Phe Ile Ile Asp Gly Pro Asn Thr Pro Glu Cys Pro
130 135 140

Ser Ala Ser Arg Ala Trp Asn Val Trp Glu Val Glu Asp Tyr Gly Phe
145 150 155 160

Gly Val Phe Thr Thr Asn Ile Trp Leu Lys Leu Arg Glu Val Tyr Thr
165 170 175

Gln Leu Cys Asp His Arg Leu Met Ser Ala Ala Val Lys Asp Glu Arg
180 185 190

Ala Val His Ala Asp Met Gly Tyr Trp Ile Glu Ser Gln Lys Asn Gly
195 200 205

Ser Trp Lys Leu Glu Lys Ala Ser Leu Ile Glu Val Lys Thr Cys Thr

210

215

220

Trp Pro Lys Ser His Thr Leu Trp Thr Asn Gly Val Leu Glu Ser Asp
 225 230 235 240

Met Ile Ile Pro Lys Ser Leu Ala Gly Pro Ile Ser Gln His Asn Tyr
 245 250 255

Arg Pro Gly Tyr His Thr Gln Thr Ala Gly Pro Trp His Leu Gly Lys
 260 265 270

Leu Glu Leu Asp Phe Asn Tyr Cys Glu Gly Thr Thr Val Val Ile Thr
 275 280 285

Glu Ser Cys Gly Thr Arg Gly Pro Ser Leu Arg Thr Thr Thr Val Ser
 290 295 300

Gly Lys Leu Ile His Glu Trp Cys Cys Arg Ser Cys Thr Leu Pro Pro
 305 310 315 320

Leu Arg Tyr Met Gly Glu Asp Gly Cys Trp Tyr Gly Met Glu Ile Arg
 325 330 335

Pro Ile Ser Glu Lys Glu Glu Asn Met Val Lys Ser Leu Val Ser Ala
 340 345 350

His His His His His His
 355

<210> 10
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Asp Met Gly Cys Val Ala Ser Trp Ser Gly Lys Glu Leu Lys Cys Gly

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Ser	Gly	Ile	Phe	Val	Val	Asp	Asn	Val	His	Thr	Trp	Thr	Glu	Gln	Tyr		
		20					25						30				
Lys	Phe	Gln	Pro	Glu	Ser	Pro	Ala	Arg	Leu	Ala	Ser	Ala	Ile	Leu	Asn		
		35					40					45					
Ala	His	Lys	Asp	Gly	Val	Cys	Gly	Ile	Arg	Ser	Thr	Thr	Arg	Leu	Glu		
	50					55					60						
Asn	Val	Met	Trp	Lys	Gln	Ile	Thr	Asn	Glu	Leu	Asn	Tyr	Val	Leu	Trp		
65					70				75						80		
Glu	Gly	Gly	His	Asp	Leu	Thr	Val	Val	Ala	Gly	Asp	Val	Lys	Gly	Val		
			85						90					95			
Leu	Thr	Lys	Gly	Lys	Arg	Ala	Leu	Thr	Pro	Pro	Val	Ser	Asp	Leu	Lys		
			100					105					110				
Tyr	Ser	Trp	Lys	Thr	Trp	Gly	Lys	Ala	Lys	Ile	Phe	Thr	Pro	Glu	Ala		
		115					120					125					
Arg	Asn	Ser	Thr	Phe	Leu	Ile	Asp	Gly	Pro	Asp	Thr	Ser	Glu	Cys	Pro		
	130					135					140						
Asn	Glu	Arg	Arg	Ala	Trp	Asn	Ser	Leu	Glu	Val	Glu	Asp	Tyr	Gly	Phe		
145					150				155					160			
Gly	Met	Phe	Thr	Thr	Asn	Ile	Trp	Met	Lys	Phe	Arg	Glu	Gly	Ser	Ser		
				165					170					175			
Glu	Val	Cys	Asp	His	Arg	Leu	Met	Ser	Ala	Ala	Ile	Lys	Asp	Gln	Lys		
			180					185					190				
Ala	Val	His	Ala	Asp	Met	Gly	Tyr	Trp	Ile	Glu	Ser	Ser	Lys	Asn	Gln		
		195					200					205					

Thr Trp Gln Ile Glu Lys Ala Ser Leu Ile Glu Val Lys Thr Cys Leu
210 215 220

Trp Pro Lys Thr His Thr Leu Trp Ser Asn Gly Val Leu Glu Ser Gln
225 230 235 240

Met Leu Ile Pro Lys Ser Tyr Ala Gly Pro Phe Ser Gln His Asn Tyr
245 250 255

Arg Gln Gly Tyr Ala Thr Gln Thr Val Gly Pro Trp His Leu Gly Lys
260 265 270

Leu Glu Ile Asp Phe Gly Glu Cys Pro Gly Thr Thr Val Thr Ile Gln
275 280 285

Glu Asp Cys Asp His Arg Gly Pro Ser Leu Arg Thr Thr Thr Ala Ser
290 295 300

Gly Lys Leu Val Thr Gln Trp Cys Cys Arg Ser Cys Thr Met Pro Pro
305 310 315 320

Leu Arg Phe Leu Gly Glu Asp Gly Cys Trp Tyr Gly Met Glu Ile Arg
325 330 335

Pro Leu Ser Glu Lys Glu Glu Asn Met Val Lys Ser Gln Val Thr Ala
340 345 350

His His His His His His His His His
355 360

<210> 11
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Aptamer

<220>
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<223> n = dDs

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48

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<211> 72
<212> DNA
<213> Artificial Sequence

<220>
<223> Aptamer

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<223> n = dDs

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<223> n = dDs

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<221> misc_feature
<222> (35)..(35)
<223> n = Diol1-dPa

<220>
<221> misc_feature
<222> (68)..(68)
<223> n = Biotin-dT

<400> 12
ggctggtccg nctgggaaca agnggcggga ggganggggtg tgggtgacgac aagcggacca

60

gccccgcgnag cg

72

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<220>
<223> Aptamer

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<221> misc_feature
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<223> n = dDs

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<222> (23)..(23)
<223> n = dDs

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<221> misc_feature
<222> (55)..(55)
<223> n = Biotin-dT

<400> 13
ccgcttgta tctancctgg cctgtggta ctgtaacggc tgacaagcgg cgcgnagcg

59

<210> 14
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<212> DNA
<213> Artificial Sequence

<220>
<223> Aptamer

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<222> (28)..(28)
<223> n = dDs

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 <222> (53)..(53)
 <223> n = Biotin-dT

 <400> 14
 cggcggagac gtaacgcnta tcaaatcnaa acagcttagg gtccgccgcg cgnagcg 57

<210> 15
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<220>
 <223> Aptamer

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 <223> n = Biotin

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 <222> (61)..(61)
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<400> 15
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<223> n = dDs

<220>
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<223> n = Biotin-dT

<400> 16
gcactccatg atatggtcta ctgagcgaga cgatgctgct aaantacgcc gtggtnacga 60

agacagacaa gcggagtgtc gcgnagcg 88

<210> 17
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<223> n = dDs

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<400> 17

ngatatggtc tactgtgtga ngtcctacaa tggactgggtg tntctcggnat ggccattgac 60

aagcggagta gtttagacc 78

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<400> 18
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<223> n = dDs

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<223> n = Diol1-dPa

<400> 19

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gtgtgggtgc gacaagcgga gtagttagac cgtcaaa 97

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<222> (46)..(46)

<223> n = dDs

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<222> (58)..(58)

<223> n = Diol1-dPx

<400> 20

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gtgtgggtgc gacaagcgga gtagttagac cgtcaaa

97

<210> 21
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<223> n = Biotin-dT

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<223> n = dDs

<220>
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<222> (58)..(58)
<223> n = Diol1-dPa

<400> 21
ntttcgact ccatgatatg gtctactggt ccgntcggga acaagnggcg ggagggangg

60

gtgtgggtgc gacaagcgga gtag

84

<210> 22
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gacaagcgga gtag 74

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<211> 87

<212> DNA

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<223> n = Diol1-dPa

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<222> (83)..(83)

<223> n = Biotin-dT

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 gacggtctac tgggtccgnct gggaacaagn ggcgggaggg angggtgtgg gtgcgacaag 60
 cggagtagtt agaccgtccg cgnagcg 87

 <210> 24
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 <222> (39)..(39)
 <223> n = Diol1-dPa

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 <222> (73)..(73)
 <223> n = Biotin-dT

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 agtagacccg cgnagcg 77

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<222> (31)..(31)
<223> n = Diol1-dPa

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<222> (57)..(57)
<223> n = Biotin-dT

<400> 25
gggtccgnctg ggaacaagng gcgggagggga ngggtgtggg tgcgacaagc ggcgcgnagc 60

g 61

<210> 26
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<223> n = dDs

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 aagcggagta gtttagacc 78

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 <223> n = dDs

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 <222> (46)..(46)
 <223> n = dDs

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 aagcggagta gtttagacc 78

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<222> (52)..(52)
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<400> 28
ngatatggtc tactgaggag cgcatgtcga gataccaacc nccatccaat cnttcttgac 60

aagcggagta gttagacc 78

<210> 29
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<222> (45)..(45)
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<400> 29
ntgatatggt ctactgacgc cggggcccgt antcagacgt atacncatca gggcacatac 60

aagcggagta gttagacc

78

<210> 30
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<222> (25)..(25)
<223> n = dDs

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<222> (43)..(43)
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<400> 30
cgaggcccggt antcagacgt atacncatca gggcctcgcg cgnagcg

47

<210> 31
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<400> 31
ggcagcgcgt cgattgncca atcttagcca acccaaaatt acaagcgctg cccgcgnagc 60
g 61

<210> 32
<211> 47
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<223> n = dDs

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<400> 32
gctgcctngt accaaccccc tccaatcnat taggcagccg cgnagcg 47

<210> 33
<211> 51
<212> DNA
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<222> (30)..(30)

<223> n = dDs

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<222> (47)..(47)

<223> n = Biotin-dT

<400> 33

cgtgcgacga ngccaacca gtccaatcn acaagtcgca cgcgcnagc g

51

<210> 34

<211> 59

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<222> (27)..(27)

<223> n = Diol1-dPa

<220>

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<222> (55)..(55)

<223> n = Biotin-dT

<400> 34

gcggtccgtg cngtcgcaa tccgtgntcc aaccccgaca agcggaccgc cgcnagcg

59

<210> 35

<211> 52

<212> DNA

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<223> n = Diol1-dPa

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<223> n = Biotin-dT

<400> 35
gcccgctttc gnccaaccg tgntccaatc ccagaaagcg ggccgcgnag cg

52

<210> 36
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<222> (26)..(26)
<223> n = Diol1-dPa

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<223> n = Biotin-dT

<400> 36
cgcccgctcaa ggntccaat ccgtgntcca accagttttg acgggcgcgc gnagcg

56

<210> 37
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<223> n = dDs

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<222> (42)..(42)
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<400> 37
gcccgctgc tcaaccttac caatctgnca cgcgggccgc gnagcg

46

<210> 38
<211> 48
<212> DNA
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<220>
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<222> (29)..(29)
<223> n = dDs

<220>
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<222> (44)..(44)
<223> n = Biotin-dT

<400> 38
gccctgcgng ctcaacctta ccaatctgnc acgcagggcc gcgnagcg

48

<210> 39
<211> 85
<212> DNA

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<220>

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<223> n = Biotin-dT

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<222> (33)..(33)

<223> n = dDs

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<222> (46)..(46)

<223> n = dDs

<400> 39

nactccatga tatggtctac tgatagtact ccngtttaac tctganactt gacgtccatt 60

catagacaag cggagtagtt agacc 85

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<222> (32)..(32)

<223> n = dDs

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aagcggagta gtttagacc 78

<210> 41
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<222> (46)..(46)
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<400> 41
ngatatggtc tactgtctca acggttgtca aacggntatc acggcnacac acctgcggac 60

aagcggagta gtttagacc 78

<210> 42
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 <222> (53)..(53)
 <223> n = Biotin-dT

 <400> 42
 ctccgctgtc aaacggntat cacggcnaca cacctgcgga cagcggagcg cgnagcg 57

<210> 43
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 <222> (21)..(21)
 <223> n = dDs

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 <222> (34)..(34)
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<400> 43
 ngatatggtc tactgtcaca natcgccgta aagncgaaga gctgcggaat ctaaggtgac 60

 aagcggagta gtttagacc 78

<210> 44
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<222> (39)..(39)
<223> n = dDs

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ngatatgggtc tactgtataa tccgcnttcg tcatgtggnt tggatctggg tctggcagac 60

aagcggagta gttagacc 78

<210> 45
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<223> n = Biotin-dT

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<222> (21)..(21)
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<222> (36)..(36)
<223> n = dDs

<220>
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<222> (41)..(41)
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ngatatggtc tactgcccaa ncttgtctgt aagggnittgg ntagggctgg caaaaaagac	60
aagcggagta gtttagacc	78

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<220>
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 <222> (70)..(70)
 <223> n = Biotin-dT

<400> 46	
cggccgatgc tgctaaanta cgccgtggtn acgaagacag acaagcggag tagtttagacc	60
ggccgcgcgn agcg	74

<210> 47
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 <223> n = dDs

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<222> (21)..(21)
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<220>
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<222> (55)..(55)
<223> n = Biotin-dT

<400> 47
gcgcctaaant acgccgtggt ncgaagacag acaagcggag tagttggcgc cgcgnagcg 59

<210> 48
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<400> 48
gcactccgtc tactgagcga gacgatgctg ctaaantacg ccgtggtnac gaagacggag 60

tgtcgcgnag cg 72

<210> 49
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<222> (70)..(70)
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agtgtcgcgn agcg 74

<210> 50
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<222> (23)..(23)
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<222> (35)..(35)
<223> n = Diol1-dPa

<220>
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<222> (68)..(68)
<223> n = Biotin-dT

<400> 50
ggctggtccg actgggaaca agnggcggga ggganggggtg tgggtgacgac aagcggacca 60

gcccgcgnag cg

72

<210> 51
<211> 19
<212> DNA
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<220>
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<222> (9)..(9)
<223> n = dDs

<220>
<221> misc_feature
<222> (15)..(15)
<223> n = dDs

<400> 51
actggtgtnc tcggnatgg

19

<210> 52
<211> 41
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<220>
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<220>
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<223> n = dDs

<220>
<221> misc_feature
<222> (23)..(23)
<223> n = Diol1-dPa or Diol1-dPx

<400> 52
tggaacaag nggcgggagg gangggtgtg ggtgcgacaa g

41

<210> 53

<211> 30
<212> DNA
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<220>
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<220>
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<222> (5)..(5)
<223> n = dDs

<220>
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<222> (13)..(13)
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<400> 53
tctancctgg ccntgtggta ctgtaacggc

30

<210> 54
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<223> n=dDs

<220>
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<400> 54
gacgtaacgc ntatcaaadc naaacagct

29

<210> 55
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<220>
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<400> 55
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 caagc 65

<210> 56
 <211> 33
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<220>
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 <223> n = dDs

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 <222> (15)..(15)
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 <222> (25)..(25)
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<400> 56
 gagggaatcn acgcntatca aatanaaaca gct 33

<210> 57
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<212> DNA
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<400> 57
aaacggntat cacggcnaca cacctgcg