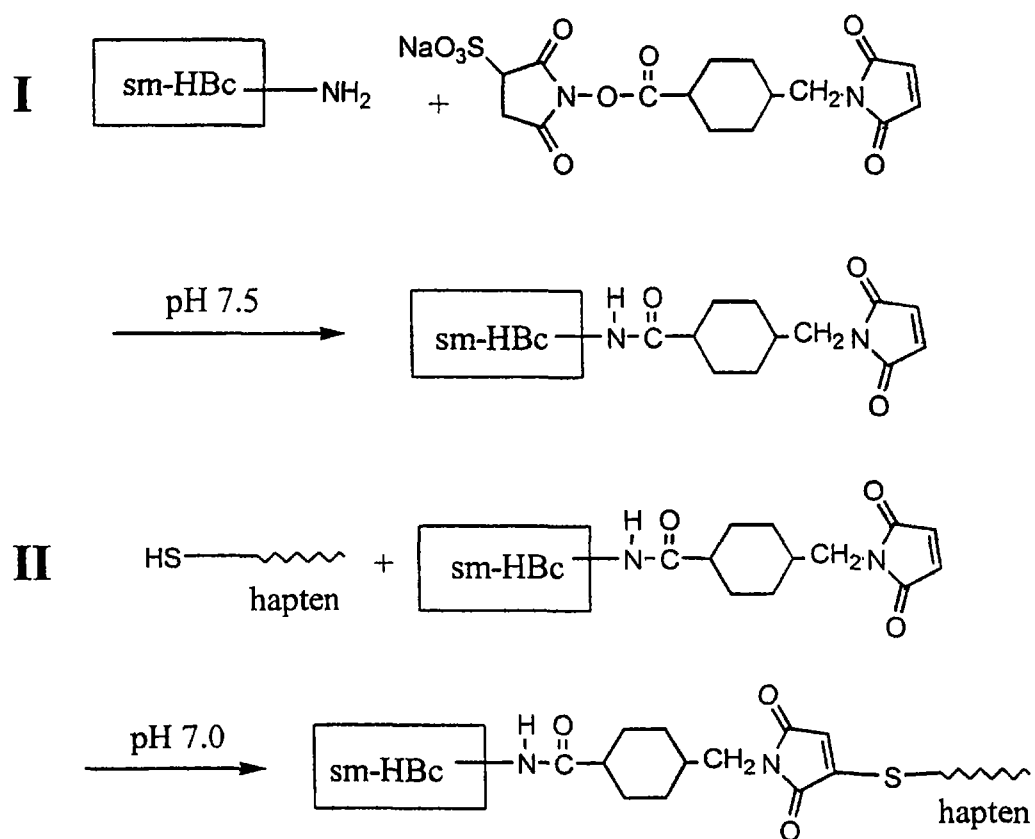


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Scheme 1



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<110> Birkett, Ashley J.
Immune Complex Inc.

<120> Strategically Modified Hepatitis B Core Proteins and
their Derivatives

<130> SYN-101 4564/69529

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<141> 1999-02-11

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 Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
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 Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
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 Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
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 Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
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 145 150 155 160

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 35 40 45
 Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
 50 55 60
 Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala
 65 70 75 80
 Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
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 Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
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 Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
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 Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
 130 135 140
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acc gcc tct gct ctg tat cgg gag gcc tta gag tct ccg gaa cat tgt	144
Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys	
35 40 45	
tca cct cac cat aca gca ctc agg caa gct att ctg tgt tgg ggt gag	192
Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu	
50 55 60	
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Ser Arg Glu Leu Val Val Ser Tyr Val Asn Val Asn Met Gly Leu Lys	
85 90 95	
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Ile Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg	
100 105 110	
gaa act gtt ttg gag tat ttg gta tct ttt gga gtg tgg att cgc act	384
Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr	
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cct ccc gct tac aga cca cca aat gcc cct atc tta tca aca ctt ccg	432
Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro	
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gaa act act gtt gtt aga cga cga ggc agg tcc cct aga aga aga act	480
Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr	
145 150 155 160	
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Pro Ser Pro Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser	
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 35 40 45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
 50 55 60

Leu Met Asn Leu Ala Thr Trp Val Gly Ser Asn Leu Glu Asp Pro Ala
 65 70 75 80

Ser Arg Glu Leu Val Val Ser Tyr Val Asn Val Asn Met Gly Leu Lys
 85 90 95

Ile Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
 100 105 110

Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
 115 120 125

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
 130 135 140

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Gln Ser Arg Glu Ser Gln Cys
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tcg ttt ttg cct tct gac ttc ttt cct tcc gta cga gat ctc cta gac	96
Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp	
20 25 30	
acc gcc tca gct ctg tat cga gaa gcc tta gag tct cct gag cat tgc	144
Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys	
35 40 45	
tca cct cac cat act gca ctc agg caa gcc att ctc tgc tgg ggg gaa	192
Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu	
50 55 60	
ttg atg act cta gct acc tgg gtg ggt aat aat ttg caa gat cca gca	240
Leu Met Thr Leu Ala Thr Trp Val Gly Asn Asn Leu Gln Asp Pro Ala	
65 70 75 80	
tcc aga gat cta gta gtc aat tat gtt aat act aac atg ggt tta aag	288
Ser Arg Asp Leu Val Val Asn Tyr Val Asn Thr Asn Met Gly Leu Lys	
85 90 95	
atc agg caa cta ttg tgg ttt cat ata tct tgc ctt act ttt gga aga	336
Ile Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg	
100 105 110	
gag act gta ctt gaa tat ttg gtc tct ttc gga gtg tgg att cgc act	384
Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr	
115 120 125	
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Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro	
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gaa act act gtt gtt aga cga cgg gac cga ggc agg tcc cct aga aga	480

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Glu Thr Thr Val Val Arg Arg Arg Asp Arg Gly Arg Ser Pro Arg Arg
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aga act ccc tcg cct cgc aga cgc aga tct caa tcg ccg cgt cgc aga 528
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Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
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Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
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Leu Met Thr Leu Ala Thr Trp Val Gly Asn Asn Leu Gln Asp Pro Ala
 65 70 75 80

Ser Arg Asp Leu Val Val Asn Tyr Val Asn Thr Asn Met Gly Leu Lys
 85 90 95

Ile Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
 100 105 110

Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
 115 120 125

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
 130 135 140

Glu Thr Thr Val Val Arg Arg Arg Asp Arg Gly Arg Ser Pro Arg Arg
 145 150 155 160

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et al.,
<302> Animal Hepatitis B Viruses
<303> Adv. Viral Oncol.
<304> 8
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<307> 1989

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35 40 45

Ser Pro His His Thr Ala Ile Arg Gln Ala Leu Val Cys Trp Asp Glu
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Leu Thr Lys Leu Ile Ala Trp Met Ser Ser Asn Ile Thr Ser Glu Gln
65 70 75 80

Val Arg Thr Ile Ile Val Asn His Val Asn Asp Thr Trp Gly Leu Lys
85 90 95

Val Arg Gln Ser Leu Trp Phe His Leu Ser Cys Leu Thr Phe Gly Gln
100 105 110

His Thr Val Gln Glu Phe Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125

Pro Ala Pro Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
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Glu His Thr Val Ile Arg Arg Arg Gly Gly Ala Arg Ala Ser Arg Ser
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 Ile Asp Pro Tyr Lys Glu Phe Gly Ser Ser Tyr Gln Leu Leu Asn Phe
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 Leu Pro Leu Asp Phe Phe Pro Asp Leu Asn Ala Leu Val Asp Thr Ala
 50 55 60

gct gct ctt tat gaa gaa gaa tta aca ggt agg gag cat tgt tct cct 240
 Ala Ala Leu Tyr Glu Glu Glu Leu Thr Gly Arg Glu His Cys Ser Pro
 65 70 75 80

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 85 90 95

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 Arg Leu Ile Thr Trp Met Ser Glu Asn Thr Thr Glu Glu Val Arg Arg
 100 105 110

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 115 120 125

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 Thr Leu Trp Phe His Leu Ser Cys Leu Thr Phe Gly Gln His Thr Val
 130 135 140

caa gaa ttt ttg gtt agt ttt gga gta tgg att aga act cca gct cct 480
 Gln Glu Phe Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Ala Pro
 145 150 155 160

tat aga cca cct aat gca ccc att tta tca act ctt ccg gaa cat aca 528
 Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu His Thr
 165 170 175

gtc att agg aga aga gga ggt tca aga gct gct agg tcc ccc cga aga 576
 Val Ile Arg Arg Arg Gly Gly Ser Arg Ala Ala Arg Ser Pro Arg Arg
 180 185 190

cgc act ccc tct cct cgc agg aga agg tct caa tca ccg cgt cgc aga 624
 Arg Thr Pro Ser Pro Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg
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 Ala Ala Leu Tyr Glu Glu Glu Leu Thr Gly Arg Glu His Cys Ser Pro
 65 70 75 80
 His His Thr Ala Ile Arg Gln Ala Leu Val Cys Trp Glu Glu Leu Thr
 85 90 95
 Arg Leu Ile Thr Trp Met Ser Glu Asn Thr Thr Glu Glu Val Arg Arg
 100 105 110
 Ile Ile Val Asp His Val Asn Asn Thr Trp Gly Leu Lys Val Arg Gln
 115 120 125
 Thr Leu Trp Phe His Leu Ser Cys Leu Thr Phe Gly Gln His Thr Val
 130 135 140
 Gln Glu Phe Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Ala Pro
 145 150 155 160
 Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu His Thr
 165 170 175
 Val Ile Arg Arg Arg Gly Gly Ser Arg Ala Ala Arg Ser Pro Arg Arg
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Gly Ile Phe Thr Ser Thr Ser Leu Leu Phe Leu Val Thr Val Pro Leu
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gta tgt acc att gtt tat gat tct tgc tta tat atg gat gtc aat gct 144
Val Cys Thr Ile Val Tyr Asp Ser Cys Leu Tyr Met Asp Val Asn Ala
35 40 45

tca aga gct tta gca aat gta tat gat ctg cca gat gat ttc ttt cct 192
Ser Arg Ala Leu Ala Asn Val Tyr Asp Leu Pro Asp Asp Phe Phe Pro
50 55 60

cag att gat gat ctt gtt aga gat gct aag gat gct tta gaa cct tat 240
Gln Ile Asp Asp Leu Val Arg Asp Ala Lys Asp Ala Leu Glu Pro Tyr
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Trp Lys Ala Glu Thr Ile Lys Lys His Val Leu Ile Ala Thr His Phe
85 90 95

gtg gat ttg att gag gac ttc tgg cag acc act cag ggt atg agc caa 336
Val Asp Leu Ile Glu Asp Phe Trp Gln Thr Thr Gln Gly Met Ser Gln
100 105 110

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Ile Ala Asp Ala Leu Arg Ala Val Ile Pro Pro Thr Thr Val Pro Val
115 120 125

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Pro Glu Gly Phe Leu Ile Thr His Ser Glu Ala Glu Glu Ile Pro Leu
130 135 140

aac gat ctc ttt tca aat caa gag gag agg ata gtc aat ttc caa cct 480
Asn Asp Leu Phe Ser Asn Gln Glu Glu Arg Ile Val Asn Phe Gln Pro
145 150 155 160

gac tat ccc att aca gct aga att cat acc cac tta cgt gtt tat act 528
Asp Tyr Pro Ile Thr Ala Arg Ile His Thr His Leu Arg Val Tyr Thr
165 170 175

aaa ttg aat gaa caa gct ttg gac aaa gct cgc aga ttg ctt tgg tgg 576
Lys Leu Asn Glu Gln Ala Leu Asp Lys Ala Arg Arg Leu Leu Trp Trp
180 185 190

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 195 200 205

tct cgc ctc cgt act tgg ctt tct act ccc gaa aaa tat cga ggc aag 672
 Ser Arg Leu Arg Thr Trp Leu Ser Thr Pro Glu Lys Tyr Arg Gly Lys
 210 215 220

gat gcc cca acc att gaa gca atc act aga cca atc cag gtg gct caa 720
 Asp Ala Pro Thr Ile Glu Ala Ile Thr Arg Pro Ile Gln Val Ala Gln
 225 230 235 240

gga ggc aga aat caa act aag gga act aga aaa cct cgt gga ctc gaa 768
 Gly Gly Arg Asn Gln Thr Lys Gly Thr Arg Lys Pro Arg Gly Leu Glu
 245 250 255

cct aga aga cga aag gtt aaa acc aca gtt gtc tat ggg aga aga cgt 816
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 260 265 270

tct aag tcc cga ggc agg aga tcc tct cca tcc caa cgt gcg ggc tcc 864
 Ser Lys Ser Arg Gly Arg Arg Ser Ser Pro Ser Gln Arg Ala Gly Ser
 275 280 285

cct ctc cca cgt aat cgg gga aac cag aca cga tcc ccc tca cct agg 912
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gaa tag 918
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Ser Arg Ala Leu Ala Asn Val Tyr Asp Leu Pro Asp Asp Phe Phe Pro
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Gln Ile Asp Asp Leu Val Arg Asp Ala Lys Asp Ala Leu Glu Pro Tyr
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Trp Lys Ala Glu Thr Ile Lys Lys His Val Leu Ile Ala Thr His Phe
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Val Asp Leu Ile Glu Asp Phe Trp Gln Thr Thr Gln Gly Met Ser Gln
100 105 110

Ile Ala Asp Ala Leu Arg Ala Val Ile Pro Pro Thr Thr Val Pro Val
115 120 125

Pro Glu Gly Phe Leu Ile Thr His Ser Glu Ala Glu Glu Ile Pro Leu
130 135 140

Asn Asp Leu Phe Ser Asn Gln Glu Glu Arg Ile Val Asn Phe Gln Pro
145 150 155 160

Asp Tyr Pro Ile Thr Ala Arg Ile His Thr His Leu Arg Val Tyr Thr
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Lys Leu Asn Glu Gln Ala Leu Asp Lys Ala Arg Arg Leu Leu Trp Trp
180 185 190

His Tyr Asn Cys Leu Leu Trp Gly Glu Ala Thr Val Thr Asn Tyr Ile
195 200 205

Ser Arg Leu Arg Thr Trp Leu Ser Thr Pro Glu Lys Tyr Arg Gly Lys
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Asp Ala Pro Thr Ile Glu Ala Ile Thr Arg Pro Ile Gln Val Ala Gln
225 230 235 240

Gly Gly Arg Asn Gln Thr Lys Gly Thr Arg Lys Pro Arg Gly Leu Glu
245 250 255

Pro Arg Arg Arg Lys Val Lys Thr Thr Val Val Tyr Gly Arg Arg Arg
260 265 270

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Gly Ile Phe Thr Ser Thr Leu Leu Leu Ser Cys Val Thr Val Pro Leu
20 25 30
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Val Cys Thr Ile Val Tyr Asp Ser Cys Leu Tyr Met Asp Ile Asn Ala
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Ser Arg Ala Leu Ala Asn Val Tyr Asp Leu Pro Asp Asp Phe Phe Pro
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aaa ata gat gat ctt gtt aga gat gct aaa gac gct tta gag cct tat 240
Lys Ile Asp Asp Leu Val Arg Asp Ala Lys Asp Ala Leu Glu Pro Tyr
65 70 75 80
tgg aaa tca gat tca ata aag aaa cat gtt ttg att gca act cac ttt 288
Trp Lys Ser Asp Ser Ile Lys Lys His Val Leu Ile Ala Thr His Phe
85 90 95
gtg gat ctc att gaa gac ttc tgg cag act aca cag ggc atg cat gaa 336
Val Asp Leu Ile Glu Asp Phe Trp Gln Thr Thr Gln Gly Met His Glu
100 105 110
ata gcc gaa tca tta aga gct gtt ata cct ccc act act act cct gtt 384
Ile Ala Glu Ser Leu Arg Ala Val Ile Pro Pro Thr Thr Thr Pro Val
115 120 125
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145	150	155	160
gac tat ccg att acg gct aga att cat gct cat ttg aaa gct tat gca			528
Asp Tyr Pro Ile Thr Ala Arg Ile His Ala His Leu Lys Ala Tyr Ala			
	165	170	175
aaa att aac gag gaa tca ctg gat agg gct agg aga ttg ctt tgg tgg			576
Lys Ile Asn Glu Glu Ser Leu Asp Arg Ala Arg Arg Leu Leu Trp Trp			
	180	185	190
cat tac aac tgt tta ctg tgg gga gaa gct caa gtt act aac tat att			624
His Tyr Asn Cys Leu Leu Trp Gly Glu Ala Gln Val Thr Asn Tyr Ile			
	195	200	205
tct cgt ttg cgt act tgg ttg tca act cct gag aaa tat aga ggt aga			672
Ser Arg Leu Arg Thr Trp Leu Ser Thr Pro Glu Lys Tyr Arg Gly Arg			
	210	215	220
gat gcc ccg acc att gaa gca atc act aga cca atc cag gtg gct cag			720
Asp Ala Pro Thr Ile Glu Ala Ile Thr Arg Pro Ile Gln Val Ala Gln			
	225	230	235
gga ggc aga aaa aca act acg ggt act aga aaa cct cgt gga ctc gaa			768
Gly Gly Arg Lys Thr Thr Thr Gly Thr Arg Lys Pro Arg Gly Leu Glu			
	245	250	255
cct aga aga aga aaa gtt aaa acc aca gtt gtc tat ggg aga aga cgt			816
Pro Arg Arg Arg Lys Val Lys Thr Thr Val Val Tyr Gly Arg Arg Arg			
	260	265	270
tca aag tcc cgg gaa agg aga gcc cct aca ccc caa cgt gcg ggc tcc			864
Ser Lys Ser Arg Glu Arg Arg Ala Pro Thr Pro Gln Arg Ala Gly Ser			
	275	280	285
cct ctc cca cgt agt tcg agc agc cac cat aga tct ccc tcg cct agg			912
Pro Leu Pro Arg Ser Ser Ser Ser His His Arg Ser Pro Ser Pro Arg			
	290	295	300
aaa taa			918
Lys			
305			

<210> 13

<211> 305

<212> PRT

<213> Hepatitis B virus

<400> 13

Met Trp Asn Leu Arg Ile Thr Pro Leu Ser Phe Gly Ala Ala Cys Gln
 1 5 10 15

Gly Ile Phe Thr Ser Thr Leu Leu Leu Ser Cys Val Thr Val Pro Leu
 20 25 30

Val Cys Thr Ile Val Tyr Asp Ser Cys Leu Tyr Met Asp Ile Asn Ala
 35 40 45

Ser Arg Ala Leu Ala Asn Val Tyr Asp Leu Pro Asp Asp Phe Phe Pro
 50 55 60

Lys Ile Asp Asp Leu Val Arg Asp Ala Lys Asp Ala Leu Glu Pro Tyr
 65 70 75 80

Trp Lys Ser Asp Ser Ile Lys Lys His Val Leu Ile Ala Thr His Phe
 85 90 95

Val Asp Leu Ile Glu Asp Phe Trp Gln Thr Thr Gln Gly Met His Glu
 100 105 110

Ile Ala Glu Ser Leu Arg Ala Val Ile Pro Pro Thr Thr Thr Pro Val
 115 120 125

Pro Pro Gly Tyr Leu Ile Gln His Glu Glu Ala Glu Glu Ile Pro Leu
 130 135 140

Gly Asp Leu Phe Lys His Gln Glu Glu Arg Ile Val Ser Phe Gln Pro
 145 150 155 160

Asp Tyr Pro Ile Thr Ala Arg Ile His Ala His Leu Lys Ala Tyr Ala
 165 170 175

Lys Ile Asn Glu Glu Ser Leu Asp Arg Ala Arg Arg Leu Leu Trp Trp
 180 185 190

His Tyr Asn Cys Leu Leu Trp Gly Glu Ala Gln Val Thr Asn Tyr Ile
 195 200 205

Ser Arg Leu Arg Thr Trp Leu Ser Thr Pro Glu Lys Tyr Arg Gly Arg
 210 215 220

Asp Ala Pro Thr Ile Glu Ala Ile Thr Arg Pro Ile Gln Val Ala Gln

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225		230		235		240
Gly Gly Arg Lys Thr Thr Thr Gly Thr Arg Lys Pro Arg Gly Leu Glu						
	245			250		255
Pro Arg Arg Arg Lys Val Lys Thr Thr Val Val Tyr Gly Arg Arg Arg						
	260			265		270
Ser Lys Ser Arg Glu Arg Arg Ala Pro Thr Pro Gln Arg Ala Gly Ser						
	275			280		285
Pro Leu Pro Arg Ser Ser Ser Ser His His Arg Ser Pro Ser Pro Arg						
	290			295		300
Lys						
305						

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<210> 14
<211> 37
<212> PRT
<213> Influenza virus
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<400> 14
Ser Ile Met Arg Ser Asp Ala Pro Ile Gly Thr Cys Ser Ser Glu Cys
 1             5             10             15
Ile Thr Pro Asn Gly Ser Ile Pro Asn Asp Lys Pro Phe Gln Asn Val
      20             25             30
Asn Lys Ile Thr Tyr
      35

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<210> 15
<211> 29
<212> PRT
<213> Influenza virus
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<400> 15
Arg Gly Ile Phe Gly Ala Ile Ala Gly Phe Ile Glu Asn Gly Trp Glu
  1             5             10             15
Gly Met Ile Asp Gly Trp Tyr Gly Phe Arg His Gln Asn
      20             25

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<210> 16

<211> 10
<212> PRT
<213> Influenza virus

<400> 16
Glu Lys Gln Thr Arg Gly Ile Phe Gly Ala
1 5 10

<210> 17
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Hepatitis B
virus PCR primer with an NcoI restriction site

<400> 17
ttggggccatg gacatcgacc tta 23

<210> 18
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Hepatitis B
virus PCR primer with an EcoRI restriction site

<400> 18
gcggaattcc atcttccaaa ttaacaccca c 31

<210> 19
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Hepatitis B
virus PCR primer with EcoRI and SacI restriction
sites and an inserted lysine codon

<400> 19
cgcggaattca aaaagagctc ccagcgtcta gagagaccta g 41

<210> 20
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Hepatitis B
virus PCR primer with HindIII restriction site

<400> 20
cgcaagctta aacaacagta gtctccggaa g 31

<210> 21
<211> 14
<212> PRT
<213> Hepatitis B virus

<400> 21
Cys Gln Glu Lys Gln Leu Asp Glu Asn Ala Asn Val Gln Leu
1 5 10

<210> 22
<211> 13
<212> PRT
<213> Hepatitis B virus

<400> 22
Cys Ser Lys Lys Gly Pro Arg Ala Ser Gly Asn Leu Ile
1 5 10

<210> 23
<211> 19
<212> PRT
<213> Hepatitis B virus

<400> 23
Cys Leu Thr Glu His Arg Met Thr Trp Asp Pro Ala Gln Pro Pro Arg
1 5 10 15

Asp Leu Thr

<210> 24

<211> 22

<212> PRT

<213> Hepatitis B virus

<400> 24

Cys Val Lys Arg Met Lys Glu Ser Arg Leu Glu Asp Thr Gln Lys His

1 5 10 15

Arg Val Asp Phe Leu Gln

20

<210> 25

<211> 15

<212> PRT

<213> Streptococcus pneumoniae

<300>

<310> EP-0 786 521-A

<400> 25

Lys Leu Glu Glu Leu Ser Asp Lys Ile Asp Glu Leu Asp Ala Glu

1 5 10 15

<210> 26

<211> 35

<212> PRT

<213> Streptococcus pneumoniae

<300>

<310> EP-0 786 521-A

<400> 26

Gln Lys Lys Tyr Asp Glu Asp Gln Lys Lys Thr Glu Glu Lys Ala Ala

1 5 10 15

Leu Glu Lys Ala Ala Ser Glu Glu Met Asp Lys Ala Val Ala Ala Val

20 25 30

Gln Gln Ala

35

<210> 27

<211> 31

<212> PRT

<213> Cryptosporidium parvum

<300>

<310> WO 98/07320

<400> 27

Gln Asp Lys Pro Ala Asp Ala Pro Ala Ala Glu Ala Pro Ala Ala Glu
1 5 10 15

Pro Ala Ala Glu Pro Ala Ala Gln Gln Asp Lys Pro Ala Asp Ala
20 25 30

<210> 28

<211> 16

<212> PRT

<213> Human immunodeficiency virus

<300>

<310> US 5,639,854

<400> 28

Gly Pro Lys Glu Pro Phe Arg Asp Tyr Val Asp Arg Phe Tyr Lys Cys
1 5 10 15

<210> 29

<211> 17

<212> PRT

<213> Human immunodeficiency virus

<300>

<310> WO 98/07320

<400> 29

Arg Lys Arg Ile His Ile Gly Pro Gly Arg Ala Phe Tyr Ile Thr Lys
1 5 10 15

Asn

<210> 30

<211> 31

<212> PRT

<213> Foot-and-mouth disease virus

<300>

<310> US 4,544,500

<400> 30

Tyr Asn Gly Glu Cys Arg Tyr Asn Arg Asn Ala Val Pro Asn Leu Arg
1 5 10 15Gly Asp Leu Gln Val Leu Ala Gln Lys Val Ala Arg Thr Leu Pro
20 25 30

<210> 31

<211> 17

<212> PRT

<213> Corynebacterium diphtheriae

<300>

<310> EP-0 399 011-B1

<400> 31

Phe Gln Val Val His Asn Ser Tyr Asn Arg Pro Ala Tyr Ser Pro Gly
1 5 10 15

Cys

<210> 32

<211> 25

<212> PRT

<213> Borrelia burgdorferi

<300>

<301> Bockenstedt, L. K.
et al.,

<303> J. Immunol.

<304> 157

<305> 12

<306> 5496-

<307> (1966)

<400> 32

Val Glu Ile Lys Glu Gly Thr Val Thr Leu Lys Arg Glu Ile Asp Lys
1 5 10 15Asn Gly Lys Val Thr Val Ser Leu Cys
20 25

<210> 33

<211> 19
<212> PRT
<213> *Borrelia burgdorferi*

<300>
<301> Zhong, W.
et al.,
<303> Eur. J. Immunol.
<304> 26
<305> 11
<306> 2749-
<307> 1996

<400> 33
Thr Leu Ser Lys Asn Ile Ser Lys Ser Gly Glu Val Ser Val Glu Leu
1 5 10 15

Asn Asp Cys

<210> 34
<211> 11
<212> PRT
<213> Influenza A virus

<300>
<301> Brumeanu, T. D.
<303> Immunotechnology
<304> 2
<305> 2
<306> 85-
<307> (1996)

<400> 34
Ser Ser Val Ser Ser Phe Glu Arg Phe Glu Cys
1 5 10

<210> 35
<211> 10
<212> PRT
<213> Influenza A virus

<300>
<301> Brumeanu, T. D.
<303> Immunotechnology
<304> 2

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<305> 2

<306> 85-

<307> (1996)

<400> 35

Tyr Arg Asn Leu Leu Trp Leu Thr Glu Lys

1 5 10

<210> 36

<211> 142

<212> PRT

<213> *Yersinia pestis*

<300>

<301> Hill, J.

et al.,

<303> Infect. Immun.

<304> 65

<305> 11

<306> 4476-

<307> (1997)

<400> 36

Asp Ile Leu Lys Val Ile Val Asp Ser Met Asn His His Gly Asp Ala

1 5 10 15

Arg Ser Lys Leu Arg Glu Glu Leu Ala Glu Leu Thr Ala Glu Leu Lys

20 25 30

Ile Tyr Ser Val Ile Gln Ala Glu Ile Asn Lys His Leu Ser Ser Ser

35 40 45

Gly Thr Ile Asn Ile His Asp Lys Ser Ile Asn Leu Met Asp Lys Asn

50 55 60

Leu Tyr Gly Tyr Thr Asp Glu Glu Ile Phe Lys Ala Ser Ala Glu Tyr

65 70 75 80

Lys Ile Leu Glu Lys Met Pro Gln Thr Thr Ile Gln Val Asp Gly Ser

85 90 95

Glu Lys Lys Ile Val Ser Ile Lys Asp Phe Leu Gly Ser Glu Asn Lys

100 105 110

Arg Thr Gly Ala Leu Gly Asn Leu Lys Asn Ser Tyr Ser Tyr Asn Lys

115 120 125

Asp Asn Asn Glu Leu Ser His Phe Ala Thr Thr Cys Ser Asp
 130 135 140

<210> 37

<211> 19

<212> PRT

<213> Haemophilus influenzae

<300>

<310> EP-0 432 220-B1

<400> 37

Cys Ser Ser Ser Asn Asn Asp Ala Ala Gly Asn Gly Ala Ala Gln Phe
 1 5 10 15

Gly Gly Tyr

<210> 38

<211> 11

<212> PRT

<213> Haemophilus influenzae

<300>

<310> EP-0 432 220-B1

<400> 38

Asn Lys Leu Gly Thr Val Ser Tyr Gly Glu Glu
 1 5 10

<210> 39

<211> 16

<212> PRT

<213> Haemophilus influenzae

<300>

<310> EP-0 432 220-B1

<400> 39

Asn Asp Glu Ala Ala Tyr Ser Lys Asn Arg Arg Ala Val Leu Ala Tyr
 1 5 10 15

<210> 40

<211> 28

<212> PRT

<213> Moraxella catarrhalis

<300>

<310> WO 98/06851

<400> 40

Leu	Asp	Ile	Glu	Lys	Asp	Lys	Lys	Lys	Arg	Thr	Asp	Glu	Gln	Leu	Gln
1				5					10					15	

Ala	Glu	Leu	Asp	Asp	Lys	Tyr	Ala	Gly	Lys	Gly	Tyr
			20					25			

<210> 41

<211> 28

<212> PRT

<213> Moraxella catarrhalis

<300>

<310> WO 98/06851

<400> 41

Leu	Asp	Ile	Glu	Lys	Asn	Lys	Lys	Lys	Arg	Thr	Glu	Ala	Glu	Leu	Gln
1				5					10					15	

Ala	Glu	Leu	Asp	Asp	Lys	Tyr	Ala	Gly	Lys	Gly	Tyr
			20					25			

<210> 42

<211> 28

<212> PRT

<213> Moraxella catarrhalis

<300>

<310> WO 98/06851

<400> 42

Ile	Asp	Ile	Glu	Lys	Lys	Gly	Lys	Ile	Arg	Thr	Glu	Ala	Glu	Leu	Leu
1				5					10					15	

Ala	Glu	Leu	Asn	Lys	Asp	Tyr	Pro	Gly	Gln	Gly	Tyr
			20					25			

<210> 43

<211> 25

<212> PRT

<213> Porphyromonas gingivalis

<300>

<304> 110

<305> 2

<306> 285-

<307> 1997

<400> 43

Gly Val Ser Pro Lys Val Cys Lys Asp Val Thr Val Glu Gly Ser Asn

1 5 10 15

Glu Phe Ala Pro Val Gln Asn Leu Thr

20 25

<210> 44

<211> 20

<212> PRT

<213> Porphyromonas gingivalis

<300>

<304> 110

<305> 2

<306> 285-

<307> 1997

<400> 44

Arg Ile Gln Ser Thr Trp Arg Gln Lys Thr Val Asp Leu Pro Ala Gly

1 5 10 15

Thr Lys Tyr Val

20

<210> 45

<211> 20

<212> PRT

<213> Trypanosoma cruzi

<300>

<304> 159

<305> 9

<306> 4444-

<307> (1997)

<400> 45

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Ser His Asn Phe Thr Leu Val Ala Ser Val Ile Ile Glu Ala Pro Ser
1 5 10 15

Gly Asn Thr Cys
20

<210> 46
<211> 21
<212> PRT
<213> Trypanosoma cruzi

<300>
<310> WO 97/18475

<400> 46
Lys Ala Ala Ile Ala Pro Ala Lys Ala Ala Ala Pro Ala Lys Ala
1 5 10 15

Ala Thr Ala Pro Ala
20

<210> 47
<211> 16
<212> PRT
<213> Plasmodium falciparum

<300>
<303> Int. Arch. Allergy Appl. Immunol.
<304> 114
<305> 1
<306> 15-

<400> 47
Ser Val Gln Ile Pro Lys Val Pro Tyr Pro Asn Gly Ile Val Tyr Cys
1 5 10 15

<210> 48
<211> 16
<212> PRT
<213> Plasmodium falciparum

<300>
<303> Int. Arch. Allergy Appl. Immunol.
<304> 114
<305> 1

<306> 15-

<400> 48

Asp Phe Asn His Tyr Tyr Thr Leu Lys Thr Gly Leu Glu Ala Asp Cys
1 5 10 15

<210> 49

<211> 16

<212> PRT

<213> Streptococcus sobrinus

<300>

<303> Arch. Oral Biol.

<304> 35

<306> Suppl. 475-

<307> (1990)

<400> 49

Lys Pro Arg Pro Ile Tyr Glu Ala Lys Leu Ala Gln Asn Gln Lys Cys
1 5 10 15

<210> 50

<211> 17

<212> PRT

<213> Streptococcus sobrinus

<300>

<303> Arch. Oral Biol.

<304> 35

<306> Suppl. 475-

<307> (1990)

<400> 50

Ala Lys Ala Asp Tyr Glu Ala Lys Leu Ala Gln Tyr Glu Lys Asp Leu
1 5 10 15

Cys

<210> 51

<211> 16

<212> PRT

<213> Lymphocytic choriomeningitis virus

<300>

WO 99/40934

<303> Proc. Natl. Acad. Sci. U.S.A.

<304> 94

<305> 7

<306> 3314-

<307> (1997)

<400> 51

Arg Pro Gln Ala Ser Gly Val Tyr Met Gly Asn Leu Thr Ala Gln Cys

1

5

10

15

<210> 52

<211> 9

<212> PRT

<213> Shigella flexneri

<300>

<303> J. Biol. Chem.

<304> 271

<305> 52

<306> 33670-

<307> (1996)

<400> 52

Lys Asp Arg Thr Leu Ile Glu Gln Lys

1

5

<210> 53

<211> 15

<212> PRT

<213> respiratory syncytial virus

<300>

<304> 234

<305> 1

<306> 118-

<307> 1997

<400> 53

Cys Ser Ile Cys Ser Asn Asn Pro Thr Cys Trp Ala Ile Cys Lys

1

5

10

15

<210> 54

<211> 19

<212> PRT

<213> Plasmodium vivax

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PCT/US99/03055

<300>

<303> Vaccine

<304> 15

<305> 4

<306> 377-

<307> 1997

<400> 54

Gly	Asp	Arg	Ala	Asp	Gly	Gln	Pro	Ala	Gly	Asp	Arg	Ala	Asp	Gly	Gln
1				5					10					15	

Pro Ala Gly

<210> 55

<211> 16

<212> PRT

<213> Clostridium tetani

<300>

<303> Vaccine

<304> 15

<305> 4

<306> 377-

<307> 1997

<400> 55

Gln	Tyr	Ile	Lys	Ala	Asn	Ser	Lys	Phe	Ile	Gly	Ile	Thr	Glu	Leu	Cys
1				5					10					15	

<210> 56

<211> 25

<212> PRT

<213> Entamoeba histolytica

<300>

<303> J. Exp. Med.

<304> 185

<305> 10

<306> 1793-

<307> 1997

<400> 56

Val	Glu	Cys	Ala	Ser	Thr	Val	Cys	Gln	Asn	Asp	Asn	Ser	Cys	Pro	Ile
1				5					10					15	

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Ile Ala Asp Val Glu Lys Cys Asn Gln
 20 25

<210> 57
 <211> 34
 <212> PRT
 <213> Schistosoma japonicum

<300>
 <303> Vaccine
 <304> 15
 <305> 1
 <306> 79-
 <307> 1997

<400> 57
 Asp Leu Gln Ser Glu Ile Ser Leu Ser Leu Glu Asn Gly Glu Leu Ile
 1 5 10 15

Arg Arg Ala Lys Ser Ala Glu Ser Leu Ala Ser Glu Leu Gln Arg Arg
 20 25 30

Val Asp

<210> 58
 <211> 34
 <212> PRT
 <213> Schistosoma mansoni

<300>
 <303> Vaccine
 <304> 15
 <305> 1
 <306> 79-
 <307> 1997

<400> 58
 Asp Leu Gln Ser Glu Ile Ser Leu Ser Leu Glu Asn Ser Glu Leu Ile
 1 5 10 15

Arg Arg Ala Lys Ala Ala Glu Ser Leu Ala Ser Asp Leu Gln Arg Arg
 20 25 30

Val Asp

<210> 59

<211> 63

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: MseI
restriction endonuclease site inserted into wild
type Hepatitis B sequence at position 75

<220>

<221> CDS

<222> (1)..(63)

<400> 59

gct acc tgg gtg ggt gtt aat ttg gaa gat cca gcg tct aga gac cta 48
Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp Leu
1 5 10 15

gta gtc agt tat gtc 63
Val Val Ser Tyr Val
20

<210> 60

<211> 21

<212> PRT

<213> Artificial Sequence

<400> 60

Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp Leu
1 5 10 15

Val Val Ser Tyr Val
20

<210> 61

<211> 41

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: K inserted at
amino acid position 75 of Metatititis B core

sequence

<220>

<221> CDS

<222> (1)..(39)

<400> 61

gct acc tgg gtg ggt gtt aaa aat ttg gaa gat cca gcg tc 41
 Ala Thr Trp Val Gly Val Lys Asn Leu Glu Asp Pro Ala
 1 5 10

<210> 62

<211> 13

<212> PRT

<213> Artificial Sequence

<400> 62

Ala Thr Trp Val Gly Val Lys Asn Leu Glu Asp Pro Ala
 1 5 10

<210> 63

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: K inserted at
 amino acid position 76 of hepatitis B core

<220>

<221> CDS

<222> (3)..(26)

<400> 63

tt aat aaa ttg gaa gat cca gcg tct a 27
 Asn Lys Leu Glu Asp Pro Ala Ser
 1 5

<210> 64

<211> 8

<212> PRT

<213> Artificial Sequence

<400> 64

Asn Lys Leu Glu Asp Pro Ala Ser

1

5

<210> 65

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: K inserted at
position 77 of hepatitis B virus core

<220>

<221> CDS

<222> (3)..(26)

<400> 65

tt aat ttg aaa gaa gat cca gcg tct a

27

Asn Leu Lys Glu Asp Pro Ala Ser

1

5

<210> 66

<211> 8

<212> PRT

<213> Artificial Sequence

<400> 66

Asn Leu Lys Glu Asp Pro Ala Ser

1

5

<210> 67

<211> 32

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: K inserted at
position 78 of hepatitis B core

<220>

<221> CDS

<222> (3)..(32)

<400> 67

tt aat ttg gaa aaa gat cca gcg tct aga gac

32

Asn Leu Glu Lys Asp Pro Ala Ser Arg Asp

1 5 10

<210> 68
<211> 10
<212> PRT
<213> Artificial Sequence

<400> 68
Asn Leu Glu Lys Asp Pro Ala Ser Arg Asp
1 5 10

<210> 69
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: K inserted at
amino acid position 79 of hepatitis B core

<220>
<221> CDS
<222> (3)..(35)

<400> 69
tt aat ttg gaa gat aaa cca gcg tct aga gac cta g 36
Asn Leu Glu Asp Lys Pro Ala Ser Arg Asp Leu
1 5 10

<210> 70
<211> 11
<212> PRT
<213> Artificial Sequence

<400> 70
Asn Leu Glu Asp Lys Pro Ala Ser Arg Asp Leu
1 5 10

<210> 71
<211> 39
<212> DNA
<213> Artificial Sequence

<220>

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<223> Description of Artificial Sequence: K inserted at
amino acid position 80 of hepatitis B core

<220>

<221> CDS

<222> (3)..(38)

<400> 71

tt	aat	ttg	gaa	gat	cca	aaa	gcg	tct	aga	gac	cta	gta	g	39
	Asn	Leu	Glu	Asp	Pro	Lys	Ala	Ser	Arg	Asp	Leu	Val		
	1				5					10				

<210> 72

<211> 12

<212> PRT

<213> Artificial Sequence

<400> 72

Asn	Leu	Glu	Asp	Pro	Lys	Ala	Ser	Arg	Asp	Leu	Val
1				5						10	

<210> 73

<211> 43

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: K inserted at
amino acid position 81 of hepatitis B core

<220>

<221> CDS

<222> (3)..(41)

<400> 73

tt	aat	ttg	gaa	gat	cca	gcg	aaa	tct	aga	gac	cta	gta	gtc	ag	43
	Asn	Leu	Glu	Asp	Pro	Ala	Lys	Ser	Arg	Asp	Leu	Val	Val		
	1				5					10					

<210> 74

<211> 13

<212> PRT

<213> Artificial Sequence

<400> 74

Asn Leu Glu Asp Pro Ala Lys Ser Arg Asp Leu Val Val
 1 5 10

<210> 75

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: K inserted at
 amino acid position 82 of hepatitis B core

<220>

<221> CDS

<222> (3)..(44)

<400> 75

tt aat ttg gaa gat cca gcg tct aaa aga gac cta gta gtc agt t 45
 Asn Leu Glu Asp Pro Ala Ser Lys Arg Asp Leu Val Val Ser
 1 5 10

<210> 76

<211> 14

<212> PRT

<213> Artificial Sequence

<400> 76

Asn Leu Glu Asp Pro Ala Ser Lys Arg Asp Leu Val Val Ser
 1 5 10

<210> 77

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: K inserted at
 amino acid position 83 of hepatitis B core

<220>

<221> CDS

<222> (3)..(50)

<400> 77

tt aat ttg gaa gat cca gcg tct aga aaa gac cta gta gtc agt tat 47

Asn Leu Glu Asp Pro Ala Ser Arg Lys Asp Leu Val Val Ser Tyr
 1 5 10 15

gtc 50
 Val

<210> 78
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<400> 78
 Asn Leu Glu Asp Pro Ala Ser Arg Lys Asp Leu Val Val Ser Tyr Val
 1 5 10 15

<210> 79
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: K inserted at
 amino acid position 84 of hepatitis B core

<220>
 <221> CDS
 <222> (3)..(50)

<400> 79
 tt aat ttg gaa gat cca gcg tct aga gac aaa cta gta gtc agt tat 47
 Asn Leu Glu Asp Pro Ala Ser Arg Asp Lys Leu Val Val Ser Tyr
 1 5 10 15

gtc 50
 Val

<210> 80
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<400> 80
 Asn Leu Glu Asp Pro Ala Ser Arg Asp Lys Leu Val Val Ser Tyr Val
 1 5 10 15

<210> 81
 <211> 31
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: K inserted at
 amino acid position 85 of hepatitis B core

<220>

<221> CDS

<222> (2) .. (31)

<400> 81

c	tcg	aga	gac	cta	aaa	gta	gtc	agt	tat	gtc	31
	Ser	Arg	Asp	Leu	Lys	Val	Val	Ser	Tyr	Val	
	1				5					10	

<210> 82

<211> 10

<212> PRT

<213> Artificial Sequence

<400> 82

Ser	Arg	Asp	Leu	Lys	Val	Val	Ser	Tyr	Val
1				5					10

<210> 83

<211> 18

<212> PRT

<213> Plasmodium vivax

<400> 83

Asp	Arg	Ala	Ala	Gly	Gln	Pro	Ala	Gly	Asp	Arg	Ala	Asp	Gly	Gln	Pro
1				5				10					15		

Ala Gly

<210> 84

<211> 8

<212> PRT

<213> Influenza virus

<400> 84

Cys Asn Asn Pro His Arg Ile Leu

1

5

<210> 85

<211> 25

<212> PRT

<213> Influenza virus

<400> 85

Cys Pro Lys Tyr Val Lys Gln Asn Thr Leu Lys Leu Ala Thr Gly Met

1

5

10

15

Arg Asn Val Pro Glu Lys Gln Thr Arg

20

25

<210> 86

<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<400> 86

Ala Val Leu Glu Asp Pro Tyr Ile Leu Leu Val Ser Ser Lys Val

1

5

10

15

<210> 87

<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<400> 87

Leu Leu Val Ser Ser Lys Val Ser Thr Val Lys Asp Leu Leu Pro

1

5

10

15

<210> 88

<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<400> 88

Leu Leu Pro Leu Leu Glu Lys Val Ile Gly Ala Gly Lys Pro Leu

1

5

10

15

WO 99/40934

PCT/US99/03055

<210> 89

<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<400> 89

Ala	Ile	Leu	Thr	Gly	Gly	Gln	Val	Ile	Ser	Glu	Glu	Val	Gly	Leu
1				5					10					15

<210> 90

<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<400> 90

Ile	Ala	Phe	Asn	Ser	Gly	Leu	Glu	Pro	Gly	Val	Val	Ala	Glu	Lys
1				5					10					15

<210> 91

<211> 18

<212> PRT

<213> Mycobacterium tuberculosis

<400> 91

Ala	Arg	Arg	Gly	Leu	Glu	Arg	Gly	Leu	Asn	Ala	Leu	Ala	Asp	Ala	Val
1				5					10						15

Lys Val

<210> 92

<211> 14

<212> PRT

<213> Mycobacterium tuberculosis

<400> 92

Glu	Lys	Ile	Gly	Ala	Glu	Leu	Val	Lys	Glu	Val	Ala	Lys	Lys
1				5					10				

<210> 93

<211> 17

<212> PRT

<213> Mycobacterium tuberculosis

<400> 93

Gly Leu Lys Arg Gly Ile Glu Lys Ala Val Glu Lys Val Thr Glu Thr
 1 5 10 15

Leu

<210> 94

<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<400> 94

Ile Glu Asp Ala Val Arg Asn Ala Lys Ala Ala Val Glu Glu Gly
 1 5 10 15

<210> 95

<211> 20

<212> PRT

<213> Feline leukemia virus

<400> 95

Cys Asp Ile Ile Gly Asn Thr Trp Asn Pro Ser Asp Gln Glu Pro Phe
 1 5 10 15

Pro Gly Tyr Gly
 20

<210> 96

<211> 21

<212> PRT

<213> Feline leukemia virus

<400> 96

Cys Ile Gly Thr Val Pro Lys Thr His Gln Ala Leu Cys Asn Glu Thr
 1 5 10 15

Gln Gln Gly His Thr
 20

<210> 97

<211> 13

<212> PRT

<213> Feline leukemia virus

<400> 97

Gly Asn Tyr Ser Asn Gln Thr Asn Pro Pro Pro Ser Cys
1 5 10

<210> 98

<211> 22

<212> PRT

<213> Feline leukemia virus

<400> 98

Thr Asp Ile Gln Ala Leu Glu Glu Ser Ile Ser Ala Leu Glu Lys Ser
1 5 10 15Leu Thr Ser Leu Ser Glu
20

<210> 99

<211> 14

<212> PRT

<213> Feline leukemia virus

<400> 99

Ala Lys Leu Arg Glu Arg Leu Lys Gln Arg Gln Gln Leu Phe
1 5 10

<210> 100

<211> 23

<212> PRT

<213> Feline leukemia virus

<400> 100

Asp Ser Gln Gln Gly Trp Phe Glu Gly Trp Phe Asn Lys Ser Pro Trp
1 5 10 15Phe Thr Thr Leu Ile Ser Ser
20

<210> 101

<211> 18

<212> PRT

<213> Feline leukemia virus

<400> 101

WO 99/40934

PCT/US99/03055

Gln Val Met Thr Ile Thr Pro Pro Gln Ala Met Gly Pro Asn Leu Val
1 5 10 15

Leu Pro

<210> 102
<211> 17
<212> PRT
<213> Feline leukemia virus

<400> 102
Asp Gln Lys Pro Pro Ser Arg Gln Ser Gln Ile Glu Ser Arg Val Thr
1 5 10 15

Pro

<210> 103
<211> 15
<212> PRT
<213> Feline leukemia virus

<400> 103
Arg Arg Gly Leu Asp Ile Leu Phe Leu Gln Glu Gly Gly Leu Cys
1 5 10 15

<210> 104
<211> 25
<212> PRT
<213> Feline leukemia virus

<400> 104
Gln Glu Gly Gly Leu Cys Ala Ala Leu Glu Glu Cys Gln Ile Gly Gly
1 5 10 15

Leu Cys Ala Ala Leu Lys Glu Glu Cys
20 25

<210> 105
<211> 12
<212> PRT
<213> Artificial Sequence

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<223> Description of Artificial Sequence: Cytochrome
P-450 fragment

<300>

<303> Science

<304> 228

<306> 1436-1440

<307> 1985

<400> 105

Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro

1

5

10

<210> 106

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Cytochrome
P-450 fragment

<400> 106

Cys Met Gln Leu Arg Ser

1

5

<210> 107

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Cytochrome
P-450 fragment

<400> 107

Cys Arg Phe Ser Ile Asn

1

5

<210> 108

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Cytochrome
P-450 fragment

<400> 108

Cys Ala Val Pro Arg

1 5

<210> 109

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Cytochrome
P-450 fragment

<400> 109

Cys Ile Pro Arg Ser

1 5

<210> 110

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Cytochrome
P-450 fragment

<400> 110

Cys Phe Ile Pro Val

1 5

<210> 111

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Cytochrome
P-450 fragment

<400> 111

Cys Thr Val Ser Gly Ala

1

5

<210> 112

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Cytochrome
P-450 fragment

<400> 112

Cys Thr Leu Ser Gly Glu
1 5

<210> 113

<211> 12

<212> PRT

<213> Plasmodium knowlesi

<400> 113

Gln Ala Gln Gly Asp Gly Ala Asn Ala Gly Gln Pro
1 5 10