

2017-05-01_5658-00379_ST25
SEQUENCE LISTING

<110> BOARD OF TRUSTEES OF THE UNIVERSITY OF ARKANSAS
THE TEXAS A&M UNIVERSITY SYSTEM
FAULKNER, Olivia B.
BIELKE, Lisa
CALHOUN, Nicole
BERGHMAN, Luc
HARGIS, Billy

<120> YEAST VACCINE VECTOR INCLUDING IMMUNOSTIMULATORY AND ANTIGENIC
POLYPEPTIDES AND METHODS OF USING THE SAME

<130> 5658-00379

<150> US 62/331,044
<151> 2016-05-03

<160> 129

<170> PatentIn version 3.5

<210> 1
<211> 1578
<212> DNA
<213> *Saccharomyces cerevisiae*

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<223> HMGB1 + 3 portion of *Saccharomyces cerevisiae* alpha-agglutinin

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Trp	Lys	Thr	Met	Ser	Ser	Lys	Glu	Lys	Gly	Lys	Phe	Glu	Asp	Met	Ala
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Pro	Lys	Gly	Glu	Thr	Lys	Lys	Lys	Phe	Lys	Asp	Pro	Asn	Ala	Pro	Lys
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Arg	Pro	Pro	Ser	Ala	Phe	Phe	Leu	Phe	Cys	Ser	Glu	Phe	Arg	Pro	Lys
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Ile	Lys	Gly	Glu	His	Pro	Gly	Leu	Ser	Ile	Gly	Asp	Val	Ala	Lys	Lys
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Leu	Gly	Glu	Met	Trp	Asn	Asn	Thr	Ala	Ala	Asp	Asp	Lys	Gln	Pro	Tyr
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Glu	Lys	Lys	Ala	Ala	Lys	Leu	Lys	Glu	Lys	Tyr	Glu	Lys	Asp	Ile	Ala
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Ala	Tyr	Arg	Ala	Lys	Gly	Lys	Val	Asp	Ala	Gly	Lys	Lys	Val	Val	Ala
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Glu Asp Glu Glu Asp Glu Glu Asp Glu Glu Glu Glu Glu Glu Glu
195 200 205

Glu Asp Asp Asp Asp Asp Glu
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35 40 45

Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala Lys
50 55 60

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

Lys Gly Glu Lys Lys Lys Arg Phe Lys Asp Pro Asn Ala Pro Lys Arg

85

90

95

Pro Pro Ser Ala Phe Phe Ile Phe Cys Ser Glu Phe Arg Pro Lys Val
 100 105 110

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

Gly Glu Met Trp Asn Lys Ile Ser Ser Glu Glu Lys Gln Pro Tyr Glu
 130 135 140

Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala Ala
 145 150 155 160

Tyr Arg Ser Lys Gly Lys Val Gly Gly Gly Ala Ala Lys Ala Pro Ser
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Lys Pro Asp Lys Ala Asn Asp Glu Asp Glu Asp Asp Asp Glu Glu Glu
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Asp Glu Asp Asp Asp Asp Glu Glu Glu Glu Asp Asp Glu
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Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Tyr
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Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
20 25 30

Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
35 40 45

Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
50 55 60

Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
65 70 75 80

Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
85 90 95

Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro Lys
100 105 110

Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
115 120 125

Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
130 135 140

Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
145 150 155 160

Ala Tyr Arg Ala Lys Gly Lys Pro Asp Ala Ala Lys Lys Gly Val Val
165 170 175

Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Glu Asp Glu Glu
180 185 190

Asp Glu Glu Asp Glu Glu Glu Glu Glu Asp Glu Glu Asp Glu Asp Glu
195 200 205

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Glu Glu Asp Asp Asp Asp Glu
210 215

<210> 5
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<212> PRT
<213> Mus musculus

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Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
20 25 30

Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
35 40 45

Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
50 55 60

Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
65 70 75 80

Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
85 90 95

Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro Lys
100 105 110

Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
115 120 125

Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
130 135 140

Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
145 150 155 160

Ala Tyr Arg Ala Lys Gly Lys Pro Asp Ala Ala Lys Lys Gly Val Val
165 170 175

Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Asp Asp Glu Glu
180 185 190

Asp Glu Glu Asp Glu Glu Glu Glu Glu Glu Glu Asp Glu Asp Glu
195 200 205

Glu Glu Asp Asp Asp Asp Glu
210 215

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<213> Rattus norvegicus

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Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Tyr
1 5 10 15

Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
20 25 30

Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
35 40 45

Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
50 55 60

Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
65 70 75 80

Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
85 90 95

Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro Lys
100 105 110

Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
115 120 125

Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
130 135 140

Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
145 150 155 160

Ala Tyr Arg Ala Lys Gly Lys Pro Asp Ala Ala Lys Lys Gly Val Val
165 170 175

Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Asp Asp Glu Glu
180 185 190

Asp Glu Glu Asp Glu Glu Glu Glu Glu Glu Glu Asp Glu Asp Glu
195 200 205

Glu Glu Asp Asp Asp Asp Glu
210 215

<210> 7

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<212> PRT

<213> *Cricetulus griseus*

<220>

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<222> (1)..(180)

<223> HMGB1

<400> 7

Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg Trp Lys Thr
 1 5 10 15

Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala Lys Ala Asp
 20 25 30

Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro Pro Lys Gly
 35 40 45

Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys Arg Pro Pro
 50 55 60

Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro Lys Ile Lys Gly
 65 70 75 80

Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys Leu Gly Glu
 85 90 95

Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr Glu Lys Lys
 100 105 110

Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala Ala Tyr Arg
 115 120 125

Ala Lys Gly Lys Pro Asp Ala Ala Lys Lys Gly Val Val Lys Ala Glu
 130 135 140

Lys Ser Lys Lys Lys Lys Glu Glu Glu Asp Asp Glu Glu Asp Glu Glu

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145 150 155 160

Asp Glu Glu Glu Glu Glu Glu Glu Glu Asp Glu Asp Glu Glu Glu Asp
165 170 175

Asp Asp Asp Glu
180

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<213> Macaca mulatta
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<223> HMGB1
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<400> 8

Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Tyr
1 5 10 15

Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
20 25 30

Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
35 40 45

Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
50 55 60

Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
65 70 75 80

Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
85 90 95

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Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro Lys
100 105 110

Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
115 120 125

Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
130 135 140

Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
145 150 155 160

Ala Tyr Arg Ala Lys Gly Lys Pro Asp Ala Ala Lys Lys Gly Val Val
165 170 175

Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Glu Asp Glu Glu
180 185 190

Asp Glu Glu Asp Glu Glu Glu Glu Glu Asp Glu Glu Asp Glu Asp Glu
195 200 205

Glu Glu Asp Asp Asp Asp Glu
210 215

<210> 9
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<212> PRT
<213> Macaca fascicularis

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<400> 9

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Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
 20 25 30

Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
 35 40 45

Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
 50 55 60

Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
 65 70 75 80

Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
 85 90 95

Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro Lys
 100 105 110

Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
 115 120 125

Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
 130 135 140

Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
 145 150 155 160

Ala Tyr Arg Ala Lys Gly Lys Pro Asp Ala Ala Lys Lys Gly Val Val
 165 170 175

Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Glu Asp Glu Glu
 180 185 190

Asp Glu Glu Asp Glu Glu Glu Glu Glu Asp Glu Glu Asp Glu Asp Glu
 195 200 205

Glu Glu Asp Asp Asp Asp Glu
 210 215

<210> 10
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 <212> PRT
 <213> Otolemur garnettii

<220>
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 <222> (1)..(227)
 <223> HMGB1

<400> 10

Met Asp Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Cys
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Ala Phe Phe Val Gln Thr Cys Arg Gly Glu Glu Arg Glu Lys Lys His
 20 25 30

Pro Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu
 35 40 45

Arg Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met
 50 55 60

Ala Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile
 65 70 75 80

Pro Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro
 85 90 95

Lys Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro
 100 105 110

Lys Ile Lys Gly Glu His His Leu Ser Thr Gly Asp Val Ala Lys Lys
 115 120 125

Leu Gly Glu Met Trp Ser Asn Pro Ala Ala Gly Asp Lys Gln Pro Glu
130 135 140

Glu Lys Lys Ala Ala Lys Leu Glu Glu Lys Asp Lys Lys Asp Ile Ala
145 150 155 160

Ala Tyr Arg Ala Lys Gly Lys Pro Val Gly Ser Ser Arg Leu Lys Lys
165 170 175

Ala Arg Lys Arg Arg Lys Arg Arg Lys Met Arg Lys Met Lys Arg Lys
180 185 190

Lys Met Met Asn Lys Leu Val Leu Ala Gln Phe Leu Phe Leu Val Tyr
195 200 205

Lys Ala Phe Asn Pro Leu Val Tyr Asn Ser Leu Leu Leu Lys Lys Lys
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Ile Glu Met
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Ala Tyr Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro

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25

30

Asp Ala Ser Val Asn Phe Ala Glu Phe Ser Lys Lys Cys Ser Glu Arg
 35 40 45

Trp Lys Thr Met Ser Ala Lys Glu Lys Ser Lys Phe Glu Asp Met Ala
 50 55 60

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

Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
 85 90 95

Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Phe Arg Pro Lys
 100 105 110

Ile Lys Gly Glu His Pro Gly Ser Thr Ile Gly Asp Ile Ala Lys Lys
 115 120 125

Leu Gly Glu Met Trp Asn Asn Thr Ala Thr Asp Asp Lys Leu Pro Phe
 130 135 140

Glu Arg Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Val Ala
 145 150 155 160

Ala Tyr Arg Ala Lys Gly Lys Pro Glu Pro Ala Lys Lys Ala Pro Ala
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Lys Pro Glu Lys Ala Lys Lys Lys Glu Glu Asp Asp Glu Asp Asp Asp
 180 185 190

Glu Glu Asp Glu Asp Glu Glu Asp Glu Glu Glu Glu Glu Glu Asp
 195 200 205

Asp Asp Glu

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 <223> HMGB1

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 20 25 30

Asp Ala Ser Val Asn Phe Ala Glu Phe Ser Lys Lys Cys Ser Glu Arg
 35 40 45

Trp Lys Thr Met Ser Ala Lys Glu Lys Ser Lys Phe Glu Asp Met Ala
 50 55 60

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

Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
 85 90 95

Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Phe Arg Pro Lys
 100 105 110

Ile Lys Gly Glu His Pro Gly Ser Thr Ile Gly Asp Ile Ala Lys Lys
 115 120 125

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Leu Gly Glu Met Trp Asn Asn Thr Ala Thr Asp Asp Lys Leu Pro Tyr
130 135 140

Glu Arg Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Val Ala
145 150 155 160

Ala Tyr Arg Ala Lys Gly Lys Pro Glu Pro Ala Lys Lys Ala Pro Ala
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Lys Phe Glu Lys Ala Lys Lys Lys Glu Asp Asp Asp Asp Asp Glu Asp
180 185 190

Asp Asp Asp Glu Glu Glu Glu Asp Glu Glu Glu Glu Asp Glu Glu Asp
195 200 205

Asp Asp Glu
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<213> Papio Anubis

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Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
20 25 30

Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
35 40 45

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Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
50 55 60

Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
65 70 75 80

Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
85 90 95

Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro Lys
100 105 110

Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
115 120 125

Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
130 135 140

Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
145 150 155 160

Ala Tyr Arg Ala Lys Gly Lys Pro Asp Ala Ala Lys Lys Gly Val Val
165 170 175

Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Glu Asp Glu Glu
180 185 190

Asp Glu Glu Asp Glu Glu Glu Glu Glu Asp Glu Glu Asp Glu Asp Glu
195 200 205

Glu Glu Asp Asp Asp Asp Glu
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 20 25 30

Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
 35 40 45

Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
 50 55 60

Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
 65 70 75 80

Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
 85 90 95

Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro Lys
 100 105 110

Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
 115 120 125

Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
 130 135 140

Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
 145 150 155 160

Ala Tyr Arg Ala Lys Gly Lys Pro Asp Ala Ala Lys Lys Gly Val Val
165 170 175

Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Glu Asp Glu Glu
180 185 190

Asp Glu Glu Asp Glu Glu Glu Glu Glu Asp Glu Glu Asp Glu Asp Glu
195 200 205

Glu Glu Asp Asp Asp Asp Glu
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<213> Callithrix jacchus

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Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
35 40 45

Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
50 55 60

Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro

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Arg	Pro	Pro	Ser	Ala	Phe	Phe	Leu	Phe	Cys	Ser	Glu	Tyr	Arg	Pro	Lys
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Ala	Tyr	Arg	Ala	Lys	Gly	Lys	Pro	Asp	Ala	Ala	Lys	Lys	Gly	Val	Val
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Lys	Ala	Glu	Lys	Ser	Lys	Lys	Lys	Lys	Glu	Glu	Glu	Glu	Asp	Glu	Glu
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Asp	Glu	Glu	Asp	Glu	Glu	Glu	Glu	Glu	Asp	Glu	Glu	Asp	Glu	Asp	Glu
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 20 25 30

Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
 35 40 45

Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
 50 55 60

Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
 65 70 75 80

Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
 85 90 95

Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro Lys
 100 105 110

Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
 115 120 125

Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
 130 135 140

Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
 145 150 155 160

Ala Tyr Arg Ala Lys Gly Lys Pro Asp Ala Ala Lys Lys Gly Val Val
 165 170 175

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Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Glu Asp Glu Glu
180 185 190

Asp Glu Glu Asp Glu Glu Glu Glu Asp Glu Glu Asp Glu Glu Glu
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Glu Glu Asp Asp Asp Asp Glu
210 215

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Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Tyr
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Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
20 25 30

Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
35 40 45

Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
50 55 60

Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
65 70 75 80

Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
85 90 95

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Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro Lys
100 105 110

Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
115 120 125

Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
130 135 140

Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
145 150 155 160

Ala Tyr Arg Ala Lys Gly Lys Pro Asp Ala Ala Lys Lys Gly Val Lys
165 170 175

Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Glu Asp Glu Glu Asp
180 185 190

Glu Glu Asp Glu Glu Glu Glu Glu Asp Glu Glu Asp Glu Glu Glu Glu
195 200 205

Glu Asp Asp Asp Asp Glu
210

<210> 18
<211> 215
<212> PRT
<213> Equus caballus

<220>
<221> misc_feature
<222> (1)..(215)
<223> HMGB1

<400> 18

Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Tyr
1 5 10 15

Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
 20 25 30

Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
 35 40 45

Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
 50 55 60

Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
 65 70 75 80

Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
 85 90 95

Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro Lys
 100 105 110

Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
 115 120 125

Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
 130 135 140

Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
 145 150 155 160

Ala Tyr Arg Ala Lys Gly Lys Pro Asp Ala Ala Lys Lys Gly Val Val
 165 170 175

Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Glu Asp Glu Glu
 180 185 190

Asp Glu Glu Asp Glu Glu Glu Glu Glu Asp Glu Glu Asp Glu Asp Glu
 195 200 205

Glu Glu Asp Asp Asp Asp Glu
210 215

<210> 19
<211> 215
<212> PRT
<213> Canis lupus familiaris

<220>
<221> misc_feature
<222> (1)..(215)
<223> HMGB1

<400> 19

Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Tyr
1 5 10 15

Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
20 25 30

Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
35 40 45

Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
50 55 60

Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
65 70 75 80

Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
85 90 95

Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro Lys
100 105 110

Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys

115

120

125

Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
 130 135 140

Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
 145 150 155 160

Ala Tyr Arg Ala Lys Gly Lys Pro Asp Ala Ala Lys Lys Gly Val Val
 165 170 175

Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Glu Asp Glu Glu
 180 185 190

Asp Glu Glu Asp Glu Glu Glu Glu Glu Asp Glu Glu Asp Glu Asp Glu
 195 200 205

Glu Glu Asp Asp Asp Asp Glu
 210 215

<210> 20
 <211> 215
 <212> PRT
 <213> Sus scrofa

<220>
 <221> misc_feature
 <222> (1)..(215)
 <223> HMGB1

<400> 20

Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Tyr
 1 5 10 15

Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
 20 25 30

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Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
35 40 45

Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
50 55 60

Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
65 70 75 80

Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
85 90 95

Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro Lys
100 105 110

Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
115 120 125

Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys His Pro Tyr
130 135 140

Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
145 150 155 160

Ala Tyr Arg Ala Lys Gly Lys Pro Asp Ala Ala Lys Lys Gly Val Val
165 170 175

Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Glu Asp Glu Glu
180 185 190

Asp Glu Glu Asp Glu Glu Glu Glu Glu Asp Glu Glu Asp Glu Glu Glu
195 200 205

Glu Glu Asp Asp Asp Asp Glu
210 215

<210> 21
 <211> 215
 <212> PRT
 <213> *Oryctolagus cuniculus*

<220>
 <221> misc_feature
 <222> (1)..(215)
 <223> HMGB1

<400> 21

Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Tyr
 1 5 10 15

Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
 20 25 30

Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
 35 40 45

Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
 50 55 60

Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
 65 70 75 80

Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
 85 90 95

Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro Lys
 100 105 110

Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
 115 120 125

Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
 130 135 140

Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
145 150 155 160

Ala Tyr Arg Ala Lys Gly Lys Pro Asp Ala Ala Lys Lys Gly Val Val
165 170 175

Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Glu Asp Glu Glu
180 185 190

Asp Glu Glu Asp Glu Glu Glu Glu Glu Asp Glu Glu Asp Glu Asp Glu
195 200 205

Glu Glu Asp Asp Asp Asp Glu
210 215

<210> 22
<211> 206
<212> PRT
<213> Sciaenops ocellatus

<220>
<221> misc_feature
<222> (1)..(206)
<223> HMGB1

<400> 22

Met Val Lys Glu Gln Gly Lys Pro Arg Gly Lys Met Ser Ser Tyr Ala
1 5 10 15

Tyr Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro Asp
20 25 30

Ala Ser Val Asn Phe Ala Glu Phe Ser Lys Lys Cys Ser Gly Arg Trp
35 40 45

Lys Thr Met Ser Ser Lys Glu Lys Gly Lys Phe Glu Asp Leu Ala Arg
50 55 60

Gln Asp Lys Ala Arg Tyr Glu Arg Glu Met Met Ser Tyr Val Pro Ala
65 70 75 80

Arg Gly Gly Lys Lys Lys Lys Tyr Lys Asp Pro Asn Ala Pro Lys Arg
85 90 95

Pro Pro Ser Ala Phe Phe Ile Phe Cys Ser Glu Phe Arg Pro Lys Val
100 105 110

Lys Gly Glu Ala Pro Gly Leu Thr Ile Gly Glu Val Ala Lys Arg Leu
115 120 125

Gly Glu Met Trp Asn Gly Thr Ala Ser Glu Asp Lys Gln Pro Phe Glu
130 135 140

Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Glu Val Ala Ala
145 150 155 160

Tyr Arg Gln Lys Thr Lys Ala Gly Ala Gly Pro Ala Ala Lys Ala Pro
165 170 175

Ala Lys Val Glu Lys Lys Val Glu Asp Asp Asp Asp Asp Asp Asp Asp
180 185 190

Asp Glu Glu Glu Glu Asp Asp Tyr Asp Asp Asp Asp Glu
195 200 205

<210> 23
<211> 182
<212> PRT
<213> Ictalurus punctatus

<220>
<221> misc_feature
<222> (1)..(182)
<223> HMGB1

<400> 23

Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro Asp Thr Ser Val
 1 5 10 15

Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg Trp Lys Thr Met
 20 25 30

Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala Arg Leu Asp Lys
 35 40 45

Ala Arg Tyr Glu Arg Glu Met Lys Asn Tyr Val Pro Pro Arg Gly Glu
 50 55 60

Lys Lys Lys Arg Phe Lys Asp Pro Asn Ala Pro Lys Arg Pro Pro Ser
 65 70 75 80

Ala Phe Phe Ile Phe Cys Ala Glu Tyr Arg Pro Lys Val Lys Glu Glu
 85 90 95

Thr Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys Leu Gly Glu Met
 100 105 110

Trp Asn Lys Thr Ser Ala Glu Glu Lys Gln Pro Tyr Glu Lys Lys Ala
 115 120 125

Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala Ala Tyr Arg Lys
 130 135 140

Gly Lys Val Val Gly Gly Ala Ala Lys Ala Pro Thr Lys Pro Asp Lys
 145 150 155 160

Ala Asp Asp Asp Glu Asp Asp Asp Asp Asp Glu Asp Asp Asp Asp Asp
 165 170 175

Asp Asp Glu Asp Asp Glu

180

<210> 24
 <211> 209
 <212> PRT
 <213> *Lutjanus sanguineus*

<220>
 <221> misc_feature
 <222> (1)..(209)
 <223> HMGB1

<400> 24

Met Gly Arg Glu Pro Arg Glu Pro Gly Lys Pro Arg Gly Lys Met Ser
 1 5 10 15

Ser Tyr Ala Tyr Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys
 20 25 30

His Pro Asp Ala Ser Val Asn Phe Ala Glu Phe Ser Lys Lys Cys Ser
 35 40 45

Glu Arg Trp Lys Thr Met Ser Pro Lys Glu Lys Ser Lys Phe Glu Asp
 50 55 60

Leu Ala Arg Gln Asp Lys Ala Arg Tyr Glu Arg Glu Met Leu Thr Tyr
 65 70 75 80

Val Pro Ala Arg Gly Gly Lys Lys Lys Lys Phe Lys Asp Pro Asn Ala
 85 90 95

Pro Lys Arg Pro Pro Ser Ala Phe Phe Ile Phe Cys Ser Glu Phe Arg
 100 105 110

Pro Lys Val Lys Gly Glu Ser Pro Gly Leu Ser Ile Gly Glu Val Ala
 115 120 125

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Lys Arg Leu Gly Glu Met Trp Asn Gly Thr Ser Ser Glu Asp Lys Gln
130 135 140

Pro Phe Glu Lys Lys Ala Ala Lys Leu Lys Glu Arg Tyr Glu Lys Glu
145 150 155 160

Val Ala Ala Tyr Arg Gln Lys Thr Lys Gly Gly Ser Ala Pro Ala Gly
165 170 175

Lys Ala Pro Ala Lys Ala Glu Lys Lys Val Glu Glu Asp Asp Asp Asp
180 185 190

Glu Glu Asp Asp Asp Asp Glu Glu Glu Glu Asp Tyr Asp Asp Asp Asp
195 200 205

Glu

<210> 25
<211> 204
<212> PRT
<213> Carassius auratus

<220>
<221> misc_feature
<222> (1)..(204)
<223> HMGB1

<400> 25

Met Gly Lys Asp Pro Thr Lys Pro Arg Gly Lys Met Ser Ser Tyr Ala
1 5 10 15

Tyr Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro Glu
20 25 30

Ala Thr Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg Trp
35 40 45

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Lys Thr Met Ser Gly Lys Glu Lys Gly Lys Phe Glu Asp Met Ala Lys
50 55 60

Gln Asp Lys Val Arg Tyr Glu Arg Glu Met Lys Asn Tyr Ile Pro Pro
65 70 75 80

Lys Gly Glu Lys Lys Lys Arg Phe Lys Asp Pro Asn Ala Pro Lys Arg
85 90 95

Pro Pro Ser Ala Phe Phe Ile Phe Cys Ser Glu Phe Arg Ser Lys Val
100 105 110

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

Gly Glu Met Trp Asn Lys Thr Ser Ala Glu Asp Lys Gln Pro Phe Glu
130 135 140

Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala Ala
145 150 155 160

Tyr Arg Ser Lys Gly Lys Val Val Gly Gly Ala Ala Lys Ala Pro Ser
165 170 175

Lys Pro Val Lys Val Asn Asp Asp Asp Asp Asp Asp Glu Asp Glu
180 185 190

Asp Glu Asp Asp Asp Asp Glu Glu Glu Asp Asp Glu
195 200

<210> 26
<211> 198
<212> PRT
<213> Salmo salar

<220>

<221> misc_feature

<222> (1)..(198)

<223> HMGB1

<400> 26

Met Gly Lys Asp Pro Arg Lys Pro Arg Gly Lys Met Ser Ser Tyr Ala
 1 5 10 15

Tyr Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro Glu
 20 25 30

Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg Trp
 35 40 45

Arg Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Leu Ala Lys
 50 55 60

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

Lys Gly Glu Lys Lys Lys Arg Phe Lys Asp Pro Asn Ala Pro Lys Arg
 85 90 95

Pro Ser Ser Ala Phe Phe Ile Phe Cys Ala Asp Phe Arg Pro Gln Val
 100 105 110

Lys Gly Glu Thr Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys Leu
 115 120 125

Gly Glu Lys Trp Asn Asn Leu Thr Ala Glu Asp Lys Val Pro Tyr Glu
 130 135 140

Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Thr Ala
 145 150 155 160

Tyr Arg Asn Lys Gly Lys Val Pro Val Ser Val Pro Ala Lys Ala Ala
 165 170 175

Ala Pro Thr Lys Asp Asp Asp Asp Asp Asp Asp Asp Asp Asp Asp Asp
 180 185 190

Glu Asp Asp Asp Asp Asp
 195

<210> 27
 <211> 206
 <212> PRT
 <213> Anoplopoma fimbria

<220>
 <221> misc_feature
 <222> (1)..(206)
 <223> HMGB1

<400> 27

Met Val Lys Glu Leu Gly Lys Pro Lys Gly Lys Met Ser Ser Tyr Ala
 1 5 10 15

Tyr Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro Glu
 20 25 30

Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg Trp
 35 40 45

Lys Thr Met Ser Leu Lys Glu Lys Gly Lys Phe Glu Asp Leu Ala Arg
 50 55 60

Gln Asp Lys Ala Arg Tyr Glu Arg Glu Met Met Ser Tyr Ile Pro Pro
 65 70 75 80

Arg Gly Ile Lys Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys Arg
 85 90 95

Pro Pro Ser Ala Phe Phe Ile Phe Cys Ala Glu Tyr Arg Pro Lys Val

100

105

110

Lys Gly Glu Thr Pro Gly Ala Thr Ile Gly Asp Val Ala Lys Arg Leu
 115 120 125

Gly Glu Met Trp Asn Gly Thr Ala Ser Glu Asp Arg Gln Pro Phe Glu
 130 135 140

Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Glu Val Ala Ala
 145 150 155 160

Tyr Arg Ala Lys Thr Lys Pro Gly Ala Cys Ala Ala Ala Ala Pro Ser
 165 170 175

Lys Ala Pro Ala Lys Val Glu Lys Lys Val Glu Asp Asp Asp Asp Asp
 180 185 190

Asp Asp Asp Glu Glu Glu Asp Asp Phe Asp Asp Asp Asp Asp
 195 200 205

<210> 28
 <211> 194
 <212> PRT
 <213> Oncorhynchus mykiss

<220>
 <221> misc_feature
 <222> (1)..(194)
 <223> HMGB1

<400> 28

Met Gly Lys Asp Pro Arg Lys Pro Arg Gly Lys Met Ser Ser Tyr Ala
 1 5 10 15

Tyr Phe Val Gln Thr Cys Arg Ala Glu His Lys Lys Lys His Pro Glu
 20 25 30

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Ala Ser Val Asn Phe Ala Glu Phe Ser Lys Lys Cys Ser Glu Arg Trp
35 40 45

Lys Pro Met Ser Pro Lys Glu Lys Gly Lys Phe Glu Asp Met Ala Lys
50 55 60

Gln Asp Lys Val Arg Tyr Glu Gly Glu Met Lys Asn Tyr Ile Pro Pro
65 70 75 80

Asn Gly Gln Lys Lys Lys Arg Phe Lys Asp Pro Asn Ala Pro Lys Arg
85 90 95

Pro Pro Ser Ala Phe Phe Ile Phe Cys Ala Asp Phe Arg Ala Lys Ile
100 105 110

Lys Ser Glu His Pro Gly Leu Ser Ile Gly Asp Thr Ala Lys Lys Leu
115 120 125

Gly Val Met Trp Asn Ser Ser Ala Ala Glu Glu Lys Lys Pro Tyr Glu
130 135 140

Lys Lys Ala Ala Thr Leu Lys Glu Lys Tyr Asp Lys Asp Ile Ala Ser
145 150 155 160

Tyr Arg Thr Asn Gly Arg Val Asp Thr Ala Ser Ser Ala Ala Ala Asp
165 170 175

Asp Glu Glu Glu Asp Asp Glu Glu Asp Asp Asp Glu Asp Glu Asp Asp
180 185 190

Asp Glu

<210> 29

<211> 208

<212> PRT

<213> Lethenteron camtschaticum

<220>

<221> misc_feature

<222> (1)..(208)

<223> HMGB1

<400> 29

Met	Gly	Lys	Gly	Asp	Pro	Lys	Lys	Pro	Lys	Gly	Lys	Met	Ser	Ser	Tyr
1				5					10					15	

Ala	Tyr	Phe	Val	Gln	Thr	Cys	Arg	Glu	Glu	His	Lys	Lys	Lys	Asn	Pro
			20					25					30		

Glu	Ala	Ser	Val	Asn	Phe	Ala	Glu	Phe	Ser	Lys	Lys	Cys	Ser	Glu	Arg
		35					40					45			

Trp	Lys	Thr	Met	Ser	Glu	Lys	Glu	Lys	Thr	Arg	Phe	Glu	Asp	Met	Ala
	50					55					60				

Lys	Val	Asp	Lys	Val	Arg	Tyr	Asp	Arg	Glu	Met	Lys	Thr	Tyr	Val	Pro
65					70					75					80

Pro	Lys	Gly	Glu	Arg	Gly	Ser	Arg	Lys	Lys	Lys	Asp	Pro	Asn	Ala	Pro
				85					90					95	

Lys	Arg	Pro	Pro	Ser	Ala	Phe	Phe	Ile	Tyr	Cys	Ala	Glu	Tyr	Arg	Ser
			100					105					110		

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

Lys	Leu	Gly	Glu	Met	Trp	Asn	Asn	Ala	Pro	Ala	Asp	Glu	Lys	Ser	Ile
	130					135					140				

Tyr	Glu	Arg	Lys	Thr	Ala	Lys	Leu	Lys	Glu	Lys	Tyr	Asp	Lys	Asp	Met
145					150					155					160

Ala Ser Tyr Arg Ser Lys Gly Lys Val Glu Thr Ser Lys Val Ala Ser
165 170 175

Lys Pro Ala Ser Lys Gln Arg Asp Asp Asp Asp Asp Glu Asp Asp Asp
180 185 190

Glu Asp Glu Asp Glu Asp Glu Asp Glu Asp Asp Asp Asp Asp Asp Glu
195 200 205

<210> 30
<211> 172
<212> PRT
<213> Ctenopharyngodon idella

<220>
<221> misc_feature
<222> (1)..(172)
<223> HMGB1

<400> 30

Met Gly Lys Asp Pro Arg Lys Pro Lys Gly Lys Met Ser Ser Tyr Ala
1 5 10 15

Tyr Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro Glu
20 25 30

Ala Thr Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg Trp
35 40 45

Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala Lys
50 55 60

Gln Asp Lys Val Arg Phe Glu Arg Glu Met Lys Asn Tyr Ile Pro Pro
65 70 75 80

Lys Gly Glu Lys Lys Arg Arg Phe Lys Asp Pro Asn Ala Pro Lys Arg
85 90 95

Pro Pro Ser Ala Phe Phe Ile Phe Cys Gly Asp Tyr Arg Pro Lys Ile
100 105 110

Arg Gly Glu Asn Pro Gly Leu Ser Ile Gly Asp Ile Ala Lys Lys Leu
115 120 125

Gly Glu Met Trp Asn Ser Ser Ser Ala Glu Val Lys Gln Pro Tyr Glu
130 135 140

Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Asp Lys Asp Ile Ala Leu
145 150 155 160

Tyr Arg Thr Lys Gly Ile Ala Gly Leu Ser Lys Lys
165 170

<210> 31
<211> 106
<212> PRT
<213> Ophiophagus hannah

<220>
<221> misc_feature
<222> (1)..(106)
<223> HMGB1

<400> 31

Met Ala Lys Ala Asp Lys Val Arg Tyr Asp Arg Glu Met Lys Asp Tyr
1 5 10 15

Gly Pro Ala Lys Gly Gly Lys Lys Lys Lys Asp Pro Asn Ala Pro Lys
20 25 30

Arg Pro Pro Ser Gly Phe Phe Leu Phe Cys Ser Glu Phe Cys Ser Glu
35 40 45

Phe Arg Pro Lys Ile Lys Ser Thr Asn Pro Gly Ile Ser Ile Gly Asp

50

55

60

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

Lys Gly Pro Tyr Asn Asn Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu
85 90 95

Lys Val Arg Leu Gly Cys Trp Cys Trp Cys
100 105

<210> 32
<211> 51
<212> PRT
<213> Artemia franciscana

<220>
<221> misc_feature
<222> (1)..(51)
<223> HMGB1

<400> 32

Met Pro Arg Ser Lys Asp Glu Ser Lys Pro Arg Gly Lys Leu Thr Ala
1 5 10 15

Tyr Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Arg Lys His
20 25 30

Pro Asp Glu Asn Val Val Phe Ala Glu Phe Ser Lys Lys Cys Ala Glu
35 40 45

Arg Trp Lys
50

<210> 33
<211> 85
<212> PRT
<213> Gallus gallus

<220>
 <221> misc_feature
 <222> (1)..(85)
 <223> HMGB1 box a1

<400> 33

Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Tyr
 1 5 10 15

Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
 20 25 30

Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
 35 40 45

Trp Lys Thr Met Ser Ser Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
 50 55 60

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

Pro Lys Gly Glu Thr
 85

<210> 34
 <211> 54
 <212> PRT
 <213> Gallus gallus

<220>
 <221> misc_feature
 <222> (1)..(54)
 <223> HMGB1 box a2

<400> 34

Pro Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu
 1 5 10 15

Arg Trp Lys Thr Met Ser Ser Lys Glu Lys Gly Lys Phe Glu Asp Met
20 25 30

Ala Lys Ala Asp Lys Leu Arg Tyr Glu Lys Glu Met Lys Asn Tyr Val
35 40 45

Pro Pro Lys Gly Glu Thr
50

<210> 35
<211> 73
<212> PRT
<213> Gallus gallus

<220>
<221> misc_feature
<222> (1)..(73)
<223> HMGB1 box b1

<400> 35

Lys Asp Pro Asn Ala Pro Lys Arg Pro Pro Ser Ala Phe Phe Leu Phe
1 5 10 15

Cys Ser Glu Phe Arg Pro Lys Ile Lys Gly Glu His Pro Gly Leu Ser
20 25 30

Ile Gly Asp Val Ala Lys Lys Leu Gly Glu Met Trp Asn Asn Thr Ala
35 40 45

Ala Asp Asp Lys Gln Pro Tyr Glu Lys Lys Ala Ala Lys Leu Lys Glu
50 55 60

Lys Tyr Glu Lys Asp Ile Ala Ala Tyr
65 70

<210> 36

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<211> 69
<212> PRT
<213> Gallus gallus

<220>
<221> misc_feature
<222> (1)..(69)
<223> HMGB1 box b2

<400> 36

Asn Ala Pro Lys Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu
1 5 10 15

Phe Arg Pro Lys Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp
20 25 30

Val Ala Lys Lys Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp
35 40 45

Lys Gln Pro Tyr Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu
50 55 60

Lys Asp Ile Ala Ala
65

<210> 37
<211> 21
<212> PRT
<213> Gallus gallus

<220>
<221> misc_feature
<222> (1)..(21)
<223> HMGB1 RAGE binding domain

<400> 37

Lys Asp Pro Asn Ala Pro Lys Arg Pro Pro Ser Ala Phe Phe Leu Phe
1 5 10 15

Cys Ser Glu Phe Arg
20

<210> 38
<211> 33
<212> PRT
<213> Gallus gallus

<220>
<221> misc_feature
<222> (1)..(33)
<223> HMGB1 proinflammatory cytokine activity

<400> 38

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

Lys Val Asp Ala Gly Lys Lys Val Val Ala Lys Ala Glu Lys Ser Lys
20 25 30

Lys

<210> 39
<211> 182
<212> PRT
<213> Gallus gallus

<220>
<221> misc_feature
<222> (1)..(182)
<223> Clostridium perfringens antigen

<400> 39

Ser Lys Glu Tyr Ala Arg Gly Phe Ala Lys Thr Gly Lys Ser Ile Tyr
1 5 10 15

Tyr Ser His Ala Ser Met Ser His Ser Trp Asp Asp Trp Asp Tyr Ala

20

25

30

Ala Lys Val Thr Leu Ala Asn Ser Gln Lys Gly Thr Ala Gly Tyr Ile
 35 40 45

Tyr Arg Phe Leu His Asp Val Ser Glu Gly Asn Asp Pro Ser Val Gly
 50 55 60

Lys Asn Val Lys Glu Leu Val Ala Tyr Ile Ser Thr Ser Gly Glu Lys
 65 70 75 80

Asp Ala Gly Thr Asp Asp Tyr Met Tyr Phe Gly Ile Lys Thr Lys Asp
 85 90 95

Gly Lys Thr Gln Glu Trp Glu Met Asp Asn Pro Gly Asn Asp Phe Met
 100 105 110

Thr Gly Ser Lys Asp Thr Tyr Thr Phe Lys Leu Lys Asp Glu Asn Leu
 115 120 125

Lys Ile Asp Asp Ile Gln Asn Met Trp Ile Arg Lys Arg Lys Tyr Thr
 130 135 140

Ala Phe Pro Asp Ala Tyr Lys Pro Glu Asn Ile Lys Val Ile Ala Asn
 145 150 155 160

Gly Lys Val Val Val Asp Lys Asp Ile Asn Glu Trp Ile Ser Gly Asn
 165 170 175

Ser Thr Tyr Asn Ile Lys
 180

<210> 40

<211> 6

<212> PRT

<213> Clostridium perfringens

<220>
 <221> misc_feature
 <222> (1)..(6)
 <223> protective epitope of CPa

<400> 40

Ala Arg Gly Phe Ala Lys
 1 5

<210> 41
 <211> 8
 <212> PRT
 <213> Avian Influenza virus

<220>
 <221> misc_feature
 <222> (1)..(8)
 <223> Avian Influenza virus m2e

<400> 41

Glu Val Glu Thr Pro Ile Arg Asn
 1 5

<210> 42
 <211> 8
 <212> PRT
 <213> Avian Influenza virus

<220>
 <221> misc_feature
 <222> (1)..(8)
 <223> Avian Influenza virus m2e

<400> 42

Glu Val Glu Thr Pro Thr Arg Asn
 1 5

<210> 43
 <211> 12

<212> PRT
<213> Avian Influenza virus

<220>
<221> misc_feature
<222> (1)..(12)
<223> Avian Influenza virus (HA5 UA)

<400> 43

Leu Leu Ser Arg Ile Asn His Phe Glu Lys Ile Gln
1 5 10

<210> 44
<211> 19
<212> PRT
<213> Avian Influenza virus

<220>
<221> misc_feature
<222> (1)..(19)
<223> Avian Influenza virus (HA5 LB)

<400> 44

Ala Asn Pro Ala Asn Asp Leu Cys Tyr Pro Gly Asp Phe Asn Asp Tyr
1 5 10 15

Glu Glu Leu

<210> 45
<211> 16
<212> PRT
<213> Avian Influenza virus

<220>
<221> misc_feature
<222> (1)..(16)
<223> Avian Influenza virus (NP 54-69)

<400> 45

Gly Arg Leu Ile Gln Asn Ser Ile Thr Ile Glu Arg Met Val Leu Ser
1 5 10 15

<210> 46
<211> 14
<212> PRT
<213> Avian Influenza virus

<220>
<221> misc_feature
<222> (1)..(14)
<223> Avian Influenza virus (NP 147-160)

<400> 46

Thr Tyr Gln Arg Thr Arg Ala Leu Val Arg Thr Gly Met Asp
1 5 10

<210> 47
<211> 19
<212> PRT
<213> E. coli

<220>
<221> misc_feature
<222> (1)..(19)
<223> PAL bis from E. coli

<400> 47

Glu Gly His Ala Asp Glu Arg Gly Thr Pro Glu Tyr Asn Ile Ser Leu
1 5 10 15

Gly Glu Arg

<210> 48
<211> 6
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic: peptide

<400> 48

Gly His Ala Asp Glu Arg
1 5

<210> 49

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic: peptide

<400> 49

Asp Glu Arg Gly Thr Pro
1 5

<210> 50

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic: peptide

<400> 50

Glu Tyr Asn Ile Ser Leu
1 5

<210> 51

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic: peptide

<400> 51

Ile Ser Leu Gly Glu Arg

1 5

<210> 52
 <211> 19
 <212> PRT
 <213> Vibrio spp.

<220>
 <221> misc_feature
 <222> (1)..(19)
 <223> PALbis from vibrio spp.

<400> 52

Glu Gly His Ala Asp Glu Arg Gly Thr Pro Glu Tyr Asn Ile Ala Leu
 1 5 10 15

Gly Glu Arg

<210> 53
 <211> 17
 <212> PRT
 <213> Campylobacter spp.

<220>
 <221> misc_feature
 <222> (1)..(17)
 <223> corresponding peptide from Campylobacter spp.

<400> 53

Glu Gly Asn Cys Asp Glu Trp Gly Thr Asp Glu Tyr Asn Gln Ala Leu
 1 5 10 15

Gly

<210> 54
 <211> 19
 <212> PRT

<213> E. coli

<220>

<221> misc_feature

<222> (1)..(19)

<223> PAL from E. coli

<400> 54

Thr Val Glu Gly His Ala Asp Glu Arg Gly Thr Pro Glu Tyr Asn Ile
1 5 10 15

Ser Leu Gly

<210> 55

<211> 21

<212> PRT

<213> Campylobacter jejuni

<220>

<221> misc_feature

<222> (1)..(21)

<223> Campylobacter jejuni Cj0113

<400> 55

Gly Val Ser Ile Thr Val Glu Gly Asn Cys Asp Glu Trp Gly Thr Asp
1 5 10 15

Glu Tyr Asn Gln Ala
20

<210> 56

<211> 19

<212> PRT

<213> Vibrio spp.

<220>

<221> misc_feature

<222> (1)..(19)

<223> Vibrio spp. alternative PAL epitope

<400> 56

Thr	Val	Glu	Gly	His	Ala	Asp	Glu	Arg	Gly	Thr	Pro	Glu	Tyr	Asn	Ile
1				5					10					15	

Ala Leu Gly

<210> 57

<211> 57

<212> DNA

<213> E. coli

<220>

<221> misc_feature

<222> (1)..(57)

<223> E. coli nucleotide sequence for PAL epitope

<400> 57

gaaggtcacg cggacgaacg tggtagccccg gaatacaaca tctctctggg tgaacgt 57

<210> 58

<211> 9

<212> PRT

<213> E. coli

<220>

<221> misc_feature

<222> (1)..(9)

<223> Epitope of PAL from E. coli

<400> 58

Glu	Tyr	Asn	Ile	Ser	Leu	Gly	Glu	Arg
1				5				

<210> 59

<211> 9

<212> PRT

<213> Vibrio spp.

<220>
 <221> misc_feature
 <222> (1)..(9)
 <223> Epitope of PAL from *Vibrio* spp.

<400> 59

Glu Tyr Asn Ile Ala Leu Gly Glu Arg
 1 5

<210> 60
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic: composite minimal epitope

<220>
 <221> misc_feature
 <222> (2)..(6)
 <223> Xaa can be any naturally occurring amino acid

<220>
 <221> misc_feature
 <222> (13)..(13)
 <223> Xaa can be any naturally occurring amino acid

<400> 60

Pro Xaa Xaa Xaa Xaa Xaa Gly Tyr Gly Ala Cys Glu Xaa Asn Leu Gly
 1 5 10 15

<210> 61
 <211> 43
 <212> PRT
 <213> *Eimeria maxima*

<220>
 <221> misc_feature
 <222> (1)..(43)
 <223> MPP; *Eimeria maxima*

<400> 61

Pro Ser His Asp Ala Pro Glu Ser Glu Arg Thr Pro Arg Val Ile Ser
1 5 10 15

Phe Gly Tyr Gly Ala Cys Glu His Asn Leu Gly Val Ser Leu Phe Arg
20 25 30

Arg Glu Glu Thr Lys Lys Asp Pro Arg Gly Arg
35 40

<210> 62

<211> 28

<212> PRT

<213> Neospora canium

<220>

<221> misc_feature

<222> (1)..(28)

<223> Neospora canium

<400> 62

Pro Arg Ile Val Ser Phe Gly Tyr Gly Ala Cys Glu His Asn Leu Gly
1 5 10 15

Met Ser Leu Tyr Asp Arg Gln Gly Leu Gln Arg Gln
20 25

<210> 63

<211> 21

<212> PRT

<213> Eimeria tenella

<220>

<221> misc_feature

<222> (1)..(21)

<223> Eimeria tenella

<400> 63

Glu Ser Gln Arg Ala Pro Met Val Ile Arg Tyr Gly Tyr Gly Ala Cys
1 5 10 15

Glu Tyr Asn Leu Gly
20

<210> 64
<211> 10
<212> PRT
<213> Eimeria maxima

<220>
<221> misc_feature
<222> (1)..(10)
<223> Eimeria maxima TRAP-1

<400> 64

Gly Gly Gly Phe Pro Thr Ala Ala Val Ala
1 5 10

<210> 65
<211> 40
<212> PRT
<213> Eimeria maxima

<220>
<221> misc_feature
<222> (1)..(40)
<223> Eimeria maxima TRAP-02

<400> 65

Ala Ala Pro Glu Thr Pro Ala Val Gln Pro Lys Pro Glu Glu Gly His
1 5 10 15

Glu Arg Pro Glu Pro Glu Glu Glu Glu Glu Lys Lys Glu Glu Gly Gly
20 25 30

Gly Phe Pro Thr Ala Ala Val Ala

35

40

<210> 66
 <211> 40
 <212> PRT
 <213> Eimeria maxima

<220>
 <221> misc_feature
 <222> (1)..(40)
 <223> Eimeria maxima TRAP-03

<400> 66

Gly Gly Gly Phe Pro Thr Ala Ala Val Ala Gly Gly Val Gly Gly Val
 1 5 10 15

Leu Leu Ile Ala Ala Val Gly Gly Gly Val Ala Ala Phe Thr Ser Gly
 20 25 30

Gly Gly Gly Ala Gly Ala Gln Glu
 35 40

<210> 67
 <211> 21
 <212> PRT
 <213> Campylobacter jejuni

<220>
 <221> misc_feature
 <222> (1)..(21)
 <223> Campylobacter jejuni Cj0982

<400> 67

Lys Asp Ile Val Leu Asp Ala Glu Ile Gly Gly Val Ala Lys Gly Lys
 1 5 10 15

Asp Gly Lys Glu Lys
 20

<210> 68
 <211> 35
 <212> PRT
 <213> Campylobacter jejuni

<220>
 <221> misc_feature
 <222> (1)..(35)
 <223> Campylobacter jejuni Cj0420

<400> 68

Lys Val Ala Leu Gly Val Ala Val Pro Lys Asp Ser Asn Ile Thr Ser
 1 5 10 15

Val Glu Asp Leu Lys Asp Lys Thr Leu Leu Leu Asn Lys Gly Thr Thr
 20 25 30

Ala Asp Ala
 35

<210> 69
 <211> 16
 <212> PRT
 <213> Clostridium perfringens

<220>
 <221> misc_feature
 <222> (1)..(16)
 <223> Clostridium perfringens Alpha toxin

<400> 69

Asn Ala Trp Ser Lys Glu Tyr Ala Arg Gly Phe Ala Lys Thr Gly Lys
 1 5 10 15

<210> 70
 <211> 9
 <212> PRT
 <213> Avian influenza

<220>
 <221> misc_feature
 <222> (1)..(9)
 <223> Avian influenza M2e peptide

<400> 70

Cys Glu Val Glu Thr Pro Thr Arg Asn
 1 5

<210> 71
 <211> 9
 <212> PRT
 <213> Clostridium perfringens

<220>
 <221> misc_feature
 <222> (1)..(9)
 <223> 1-Alpha-31

<400> 71

Gly Lys Ile Asp Gly Thr Gly Thr His
 1 5

<210> 72
 <211> 15
 <212> PRT
 <213> Clostridium perfringens

<220>
 <221> misc_feature
 <222> (1)..(15)
 <223> 2-Alpha-51

<400> 72

Glu Asn Asp Met Ser Lys Asn Glu Pro Glu Ser Val Arg Lys Asn
 1 5 10 15

<210> 73
 <211> 20

<212> PRT
<213> Clostridium perfringens

<220>
<221> misc_feature
<222> (1)..(20)
<223> 3-Alpha-71

<400> 73

Glu Asn Met His Glu Leu Gln Leu Gly Ser Thr Tyr Pro Asp Tyr Asp
1 5 10 15

Lys Asn Ala Tyr
20

<210> 74
<211> 20
<212> PRT
<213> Clostridium perfringens

<220>
<221> misc_feature
<222> (1)..(20)
<223> 4-Alpha-81

<400> 74

Thr Tyr Pro Asp Tyr Asp Lys Asn Ala Tyr Asp Leu Tyr Gln Asp His
1 5 10 15

Phe Trp Asp Pro
20

<210> 75
<211> 20
<212> PRT
<213> Clostridium perfringens

<220>
<221> misc_feature

<222> (1)..(20)

<223> 5-Alpha-91

<400> 75

Asp	Leu	Tyr	Gln	Asp	His	Phe	Trp	Asp	Pro	Asp	Thr	Asp	Asn	Asn	Phe
1				5					10					15	

Ser	Lys	Asp	Asn
			20

<210> 76

<211> 10

<212> PRT

<213> Clostridium perfringens

<220>

<221> misc_feature

<222> (1)..(10)

<223> 6-Alpha-117

<400> 76

Ile	Pro	Asp	Thr	Gly	Glu	Ser	Gln	Ile	Arg
1				5					10

<210> 77

<211> 10

<212> PRT

<213> Clostridium perfringens

<220>

<221> misc_feature

<222> (1)..(10)

<223> 7-Alpha-136

<400> 77

Glu	Trp	Gln	Arg	Gly	Asn	Tyr	Lys	Gln	Ala
1				5					10

<210> 78

<211> 23
 <212> PRT
 <213> Clostridium perfringens

<220>
 <221> misc_feature
 <222> (1)..(23)
 <223> 8-Alpha-158

<400> 78

Asp	Ile	Asp	Thr	Pro	Tyr	His	Pro	Ala	Asn	Val	Thr	Ala	Val	Asp	Ser
1				5					10					15	

Ala	Gly	His	Val	Lys	Phe	Glu
			20			

<210> 79
 <211> 20
 <212> PRT
 <213> Clostridium perfringens

<220>
 <221> misc_feature
 <222> (1)..(20)
 <223> 9-Alpha-170

<400> 79

Val	Asp	Ser	Ala	Gly	His	Val	Lys	Phe	Glu	Thr	Phe	Ala	Glu	Glu	Arg
1				5					10					15	

Lys	Glu	Gln	Tyr
			20

<210> 80
 <211> 20
 <212> PRT
 <213> Clostridium perfringens

<220>

<221> misc_feature
<222> (1)..(20)
<223> 10-Alpha-181

<400> 80

Thr	Phe	Ala	Glu	Glu	Arg	Lys	Glu	Gln	Tyr	Lys	Ile	Asn	Thr	Ala	Gly
1				5					10					15	

Cys	Lys	Thr	Asn
			20

<210> 81
<211> 21
<212> PRT
<213> Clostridium perfringens

<220>
<221> misc_feature
<222> (1)..(21)
<223> 11-Alpha-191

<400> 81

Lys	Ile	Asn	Thr	Val	Gly	Cys	Lys	Thr	Asn	Glu	Asp	Phe	Tyr	Ala	Asp
1				5					10					15	

Ile	Leu	Lys	Asn	Lys
				20

<210> 82
<211> 20
<212> PRT
<213> Clostridium perfringens

<220>
<221> misc_feature
<222> (1)..(20)
<223> 12-Alpha-200

<400> 82

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Glu Asp Phe Tyr Ala Asp Ile Leu Lys Asn Lys Asp Phe Asn Ala Trp
1 5 10 15

Ser Lys Glu Tyr
20

<210> 83
<211> 20
<212> PRT
<213> Clostridium perfringens

<220>
<221> misc_feature
<222> (1)..(20)
<223> 13-Alpha-210

<400> 83

Lys Asp Phe Asn Ala Trp Ser Lys Glu Tyr Ala Arg Gly Phe Ala Lys
1 5 10 15

Thr Gly Lys Ser
20

<210> 84
<211> 17
<212> PRT
<213> Clostridium perfringens

<220>
<221> misc_feature
<222> (1)..(17)
<223> 14-Alpha-220

<400> 84

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

Ser

<210> 85
 <211> 17
 <212> PRT
 <213> Clostridium perfringens

<220>
 <221> misc_feature
 <222> (1)..(17)
 <223> 15-Alpha-233

<400> 85

Ser His Ala Ser Met Ser His Ser Trp Asp Asp Trp Asp Tyr Ala Ala
 1 5 10 15

Lys

<210> 86
 <211> 20
 <212> PRT
 <213> Clostridium perfringens

<220>
 <221> misc_feature
 <222> (1)..(20)
 <223> 16-Alpha-240

<400> 86

Ser Trp Asp Asp Trp Asp Tyr Ala Ala Lys Val Thr Leu Ala Asn Ser
 1 5 10 15

Gln Lys Gly Thr
 20

<210> 87
 <211> 16
 <212> PRT
 <213> Clostridium perfringens

<220>
 <221> misc_feature
 <222> (1)..(16)
 <223> 17-Alpha-270

<400> 87

Asp	Val	Ser	Glu	Gly	Asn	Asp	Pro	Ser	Val	Gly	Asn	Asn	Val	Lys	Glu
1				5					10					15	

<210> 88
 <211> 12
 <212> PRT
 <213> Clostridium perfringens

<220>
 <221> misc_feature
 <222> (1)..(12)
 <223> 18-Alpha-291

<400> 88

Ser	Thr	Ser	Gly	Glu	Lys	Asp	Ala	Gly	Thr	Asp	Asp
1				5					10		

<210> 89
 <211> 13
 <212> PRT
 <213> Clostridium perfringens

<220>
 <221> misc_feature
 <222> (1)..(13)
 <223> 19-Alpha-309

<400> 89

Lys	Thr	Lys	Asp	Gly	Lys	Thr	Gln	Glu	Trp	Glu	Met	Asp
1				5					10			

<210> 90

<211> 21
 <212> PRT
 <213> Clostridium perfringens

<220>
 <221> misc_feature
 <222> (1)..(21)
 <223> 20-Alpha-320

<400> 90

Asp	Asn	Pro	Gly	Asn	Asp	Phe	Met	Ala	Gly	Ser	Lys	Asp	Thr	Tyr	Thr
1				5					10					15	

Phe	Lys	Leu	Lys	Asp
			20	

<210> 91
 <211> 20
 <212> PRT
 <213> Clostridium perfringens

<220>
 <221> misc_feature
 <222> (1)..(20)
 <223> 21-Alpha-330

<400> 91

Ser	Lys	Asp	Thr	Tyr	Thr	Phe	Lys	Leu	Lys	Asp	Glu	Asn	Leu	Lys	Ile
1				5				10						15	

Asp	Asp	Ile	Gln
		20	

<210> 92
 <211> 16
 <212> PRT
 <213> Clostridium perfringens

<220>

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<221> misc_feature
<222> (1)..(16)
<223> 22-Alpha-354

<400> 92

Arg	Lys	Arg	Lys	Tyr	Thr	Ala	Phe	Pro	Asp	Ala	Tyr	Lys	Pro	Glu	Asn
1			5					10						15	

<210> 93
<211> 19
<212> PRT
<213> Clostridium perfringens

<220>
<221> misc_feature
<222> (1)..(19)
<223> 23-Alpha-379

<400> 93

Val	Val	Asp	Lys	Asp	Ile	Asn	Glu	Trp	Ile	Ser	Gly	Asn	Ser	Thr	Tyr
1			5					10						15	

Asn Ile Lys

<210> 94
<211> 215
<212> PRT
<213> Amazona aestiva

<220>
<221> misc_feature
<222> (1)..(215)
<223> High mobility group protein B1

<400> 94

Met	Gly	Lys	Gly	Asp	Pro	Lys	Lys	Pro	Arg	Gly	Lys	Met	Ser	Ser	Tyr
1			5					10						15	

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Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
20 25 30

Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
35 40 45

Trp Lys Thr Met Ser Ser Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
50 55 60

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

Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
85 90 95

Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Phe Arg Pro Lys
100 105 110

Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
115 120 125

Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
130 135 140

Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
145 150 155 160

Ala Tyr Arg Ala Lys Gly Lys Val Asp Ala Gly Lys Lys Val Val Ala
165 170 175

Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Glu Asp Glu Asp
180 185 190

Glu Asp Glu Glu Asp Glu Asp Asp Glu Glu Glu Glu Glu Glu Glu
195 200 205

Glu Asp Asp Asp Asp Asp Glu
210 215

<210> 95
<211> 213
<212> PRT
<213> Chlamydotis macqueenii

<220>
<221> misc_feature
<222> (1)..(213)
<223> High mobility group protein B1, partial

<400> 95

Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Tyr
1 5 10 15

Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
20 25 30

Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
35 40 45

Trp Lys Thr Met Ser Ser Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
50 55 60

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

Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
85 90 95

Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Phe Arg Pro Lys
100 105 110

Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
115 120 125

Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
130 135 140

Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
145 150 155 160

Ala Tyr Arg Ala Lys Gly Lys Val Asp Ala Gly Lys Lys Val Val Ala
165 170 175

Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Glu Asp Glu Asp
180 185 190

Glu Asp Glu Glu Asp Glu Glu Asp Glu Glu Glu Glu Glu Glu Asp
195 200 205

Glu Asp Asp Asp Asp
210

<210> 96
<211> 209
<212> PRT
<213> Tyto alba

<220>
<221> misc_feature
<222> (1)..(209)
<223> High mobility group protein B1, partial

<400> 96

Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Tyr
1 5 10 15

Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
20 25 30

Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
35 40 45

Trp Lys Thr Met Ser Ser Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
50 55 60

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

Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
85 90 95

Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Phe Arg Pro Lys
100 105 110

Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
115 120 125

Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
130 135 140

Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
145 150 155 160

Ala Tyr Arg Ala Lys Gly Lys Val Asp Ala Gly Lys Lys Val Val Ala
165 170 175

Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Glu Asp Glu Asp
180 185 190

Glu Asp Glu Glu Asp Glu Asp Asp Glu Glu Glu Glu Glu Glu Glu Asp
195 200 205

Glu

<210> 97

<211> 209

<212> PRT

<213> Podiceps cristatus

<220>

<221> misc_feature

<222> (1)..(209)

<223> High mobility group protein B1, partial

<400> 97

Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Tyr
 1 5 10 15

Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
 20 25 30

Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
 35 40 45

Trp Lys Thr Met Ser Ser Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
 50 55 60

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

Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
 85 90 95

Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Phe Arg Pro Lys
 100 105 110

Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
 115 120 125

Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
 130 135 140

Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala

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145 150 — 155 — 160

Ala Tyr Arg Ala Lys Gly Lys Val Asp Ala Gly Lys Lys Val Val Ala
165 170 175

Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Glu Asp Glu Asp
180 185 190

Glu Asp Glu Glu Asp Glu Asp Glu Glu Glu Glu Glu Glu Asp Glu
195 200 205

Asp

<210>	98
<211>	206
<212>	PRT
<213>	Chaetura pelagic

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<220>
<221> misc_feature
<222> (1)..(206)
<223> High mobility group protein B1, partial
```

<400> 98

Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Tyr
1 5 10 15

Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
20 25 30

Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
35 40 45

Trp Lys Thr Met Ser Ser Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
50 55 60

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

Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
85 90 95

Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Phe Arg Pro Lys
100 105 110

Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
115 120 125

Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
130 135 140

Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
145 150 155 160

Ala Tyr Arg Ala Lys Gly Lys Val Asp Ala Gly Lys Lys Val Val Ala
165 170 175

Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Glu Asp Glu Asp
180 185 190

Glu Asp Glu Glu Asp Glu Asp Asp Glu Glu Glu Glu Glu Glu
195 200 205

<210> 99
<211> 206
<212> PRT
<213> Tauraco erythrolphus

<220>
<221> misc_feature
<222> (1)..(206)
<223> High mobility group protein B1, partial

<400> 99

Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Tyr
 1 5 10 15

Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
 20 25 30

Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
 35 40 45

Trp Lys Thr Met Ser Ser Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
 50 55 60

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

Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
 85 90 95

Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Phe Arg Pro Lys
 100 105 110

Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
 115 120 125

Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
 130 135 140

Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
 145 150 155 160

Ala Tyr Arg Ala Lys Gly Lys Val Asp Ala Gly Lys Lys Val Val Ala
 165 170 175

Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Glu Asp Glu Asp
 180 185 190

Glu Glu Glu Glu Asp Glu Asp Asp Glu Glu Glu Glu Glu Glu
 195 200 205

<210> 100
 <211> 203
 <212> PRT
 <213> Phaethon lepturus

<220>
 <221> misc_feature
 <222> (1)..(203)
 <223> High mobility group protein B1, partial

<400> 100

Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Tyr
 1 5 10 15

Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
 20 25 30

Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
 35 40 45

Trp Lys Thr Met Ser Ser Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
 50 55 60

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

Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
 85 90 95

Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Phe Arg Pro Lys
 100 105 110

Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
 115 120 125

Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
130 135 140

Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
145 150 155 160

Ala Tyr Arg Ala Lys Gly Lys Val Asp Ala Gly Lys Lys Val Val Ala
165 170 175

Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Glu Asp Glu Asp
180 185 190

Glu Asp Glu Glu Asp Glu Asp Asp Glu Glu Glu
195 200

<210> 101
<211> 201
<212> PRT
<213> Pterocles gutturalis

<220>
<221> misc_feature
<222> (1)..(201)
<223> High mobility group protein B1, partial

<400> 101

Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Tyr
1 5 10 15

Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
20 25 30

Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
35 40 45

Trp Lys Thr Met Ser Ser Lys Glu Lys Gly Lys Phe Glu Asp Met Ala

50

55

60

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

Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
 85 90 95

Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Phe Arg Pro Lys
 100 105 110

Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
 115 120 125

Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
 130 135 140

Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
 145 150 155 160

Ala Tyr Arg Ala Lys Gly Lys Val Asp Ala Thr Lys Lys Val Val Ala
 165 170 175

Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Glu Asp Glu Asp
 180 185 190

Glu Asp Glu Glu Asp Glu Asp Asp Glu
 195 200

<210> 102
 <211> 200
 <212> PRT
 <213> Gavia stellata

<220>
 <221> misc_feature
 <222> (1)..(200)

<223> High mobility group protein B1, partial

<400> 102

Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Tyr
 1 5 10 15

Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
 20 25 30

Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
 35 40 45

Trp Lys Thr Met Ser Ser Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
 50 55 60

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

Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
 85 90 95

Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Phe Arg Pro Lys
 100 105 110

Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
 115 120 125

Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
 130 135 140

Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
 145 150 155 160

Ala Tyr Arg Ala Lys Gly Lys Val Asp Ala Gly Lys Lys Val Val Ala
 165 170 175

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Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Glu Asp Glu Asp
180 185 190

Glu Asp Glu Glu Asp Glu Asp Glu
195 200

<210> 103
<211> 176
<212> PRT
<213> Nannospalax ehrenbergi

<220>
<221> misc_feature
<222> (1)..(176)
<223> High mobility group protein

<400> 103

Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Tyr
1 5 10 15

Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
20 25 30

Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
35 40 45

Trp Lys Thr Met Ser Ala Glu Glu Lys Gly Lys Phe Glu Asp Met Ala
50 55 60

Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
65 70 75 80

Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
85 90 95

Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro Lys
100 105 110

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Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
115 120 125

Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
130 135 140

Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
145 150 155 160

Ala Tyr Arg Ala Lys Gly Lys Pro Asp Ala Ala Lys Lys Gly Val Val
165 170 175

<210> 104
<211> 176
<212> PRT
<213> Gekko japonicas

<220>
<221> misc_feature
<222> (1)..(176)
<223> High mobility group protein B1

<400> 104

Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Tyr
1 5 10 15

Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
20 25 30

Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
35 40 45

Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
50 55 60

Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
65 70 75 80

Pro Lys Gly Glu Thr Lys Lys Lys Phe Glu Asp Pro Asn Ala Pro Lys
85 90 95

Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro Lys
100 105 110

Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
115 120 125

Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
130 135 140

Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
145 150 155 160

Ala Tyr Arg Ala Lys Gly Lys Pro Asp Ala Ala Lys Lys Gly Val Val
165 170 175

<210> 105
<211> 175
<212> PRT
<213> Tupaia chinensis

<220>
<221> misc_feature
<222> (1)..(175)
<223> High mobility group protein B1

<400> 105

Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Tyr
1 5 10 15

Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
20 25 30

Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg

35

40

45

Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
 50 55 60

Lys Ala Asp Lys Ala His Tyr Glu Arg Glu Met Lys Thr Phe Ile Pro
 65 70 75 80

Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
 85 90 95

Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro Lys
 100 105 110

Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
 115 120 125

Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
 130 135 140

Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
 145 150 155 160

Ala Tyr Arg Ala Lys Gly Lys Pro Asp Ala Ser Lys Lys Gly Val
 165 170 175

<210> 106
 <211> 272
 <212> PRT
 <213> Gallus gallus

<220>
 <221> misc_feature
 <222> (1)..(272)
 <223> CD154 chicken (Gallus gallus)

<400> 106

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Met Asn Glu Ala Tyr Ser Pro Ala Ala Pro Arg Pro Met Gly Ser Thr
1 5 10 15

Ser Pro Ser Thr Met Lys Met Phe Met Cys Phe Leu Ser Val Phe Met
20 25 30

Val Val Gln Thr Ile Gly Thr Val Leu Phe Cys Leu Tyr Leu His Met
35 40 45

Lys Met Asp Lys Met Glu Glu Val Leu Ser Leu Asn Glu Asp Tyr Ile
50 55 60

Phe Leu Arg Lys Val Gln Lys Cys Gln Thr Gly Glu Asp Gln Lys Ser
65 70 75 80

Thr Leu Leu Asp Cys Glu Lys Val Leu Lys Gly Phe Gln Asp Leu Gln
85 90 95

Cys Lys Asp Arg Thr Ala Ser Glu Glu Leu Pro Lys Phe Glu Met His
100 105 110

Arg Gly His Glu His Pro His Leu Lys Ser Arg Asn Glu Thr Ser Val
115 120 125

Ala Glu Glu Lys Arg Gln Pro Ile Ala Thr His Leu Ala Gly Val Lys
130 135 140

Ser Asn Thr Thr Val Arg Val Leu Lys Trp Met Thr Thr Ser Tyr Ala
145 150 155 160

Pro Thr Ser Ser Leu Ile Ser Tyr His Glu Gly Lys Leu Lys Val Glu
165 170 175

Lys Ala Gly Leu Tyr Tyr Ile Tyr Ser Gln Val Ser Phe Cys Thr Lys
180 185 190

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Ala Ala Ala Ser Ala Pro Phe Thr Leu Tyr Ile Tyr Leu Tyr Leu Pro
195 200 205

Met Glu Glu Asp Arg Leu Leu Met Lys Gly Leu Asp Thr His Ser Thr
210 215 220

Ser Thr Ala Leu Cys Glu Leu Gln Ser Ile Arg Glu Gly Gly Val Phe
225 230 235 240

Glu Leu Arg Gln Gly Asp Met Val Phe Val Asn Val Thr Asp Ser Thr
245 250 255

Ala Val Asn Val Asn Pro Gly Asn Thr Tyr Phe Gly Met Phe Lys Leu
260 265 270

<210> 107
<211> 261
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(261)
<223> CD154 human Homo sapiens

<400> 107

Met Ile Glu Thr Tyr Asn Gln Thr Ser Pro Arg Ser Ala Ala Thr Gly
1 5 10 15

Leu Pro Ile Ser Met Lys Ile Phe Met Tyr Leu Leu Thr Val Phe Leu
20 25 30

Ile Thr Gln Met Ile Gly Ser Ala Leu Phe Ala Val Tyr Leu His Arg
35 40 45

Arg Leu Asp Lys Ile Glu Asp Glu Arg Asn Leu His Glu Asp Phe Val
50 55 60

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Phe Met Lys Thr Ile Gln Arg Cys Asn Thr Gly Glu Arg Ser Leu Ser
65 70 75 80

Leu Leu Asn Cys Glu Glu Ile Lys Ser Gln Phe Glu Gly Phe Val Lys
85 90 95

Asp Ile Met Leu Asn Lys Glu Glu Thr Lys Lys Glu Asn Ser Phe Glu
100 105 110

Met Gln Lys Gly Asp Gln Asn Pro Gln Ile Ala Ala His Val Ile Ser
115 120 125

Glu Ala Ser Ser Lys Thr Thr Ser Val Leu Gln Trp Ala Glu Lys Gly
130 135 140

Tyr Tyr Thr Met Ser Asn Asn Leu Val Thr Leu Glu Asn Gly Lys Gln
145 150 155 160

Leu Thr Val Lys Arg Gln Gly Leu Tyr Tyr Ile Tyr Ala Gln Val Thr
165 170 175

Phe Cys Ser Asn Arg Glu Ala Ser Ser Gln Ala Pro Phe Ile Ala Ser
180 185 190

Leu Cys Leu Lys Ser Pro Gly Arg Phe Glu Arg Ile Leu Leu Arg Ala
195 200 205

Ala Asn Thr His Ser Ser Ala Lys Pro Cys Gly Gln Gln Ser Ile His
210 215 220

Leu Gly Gly Val Phe Glu Leu Gln Pro Gly Ala Ser Val Phe Val Asn
225 230 235 240

Val Thr Asp Pro Ser Gln Val Ser His Gly Thr Gly Phe Thr Ser Phe
245 250 255

Gly Leu Leu Lys Leu
260

<210> 108
<211> 11
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(11)
<223> CD154 partial human Homo sapiens

<400> 108

Trp Ala Glu Lys Gly Tyr Tyr Thr Met Ser Cys
1 5 10

<210> 109
<211> 11
<212> PRT
<213> Gallus gallus

<220>
<221> misc_feature
<222> (1)..(11)
<223> Chicken CD154 peptide Gallus gallus

<400> 109

Trp Met Thr Thr Ser Tyr Ala Pro Thr Ser Ser
1 5 10

<210> 110
<211> 10
<212> PRT
<213> Anas sp.

<220>
<221> misc_feature
<222> (1)..(10)

<223> Duck CD154 peptide (Anas sp.)

<400> 110

Trp	Asn	Lys	Thr	Ser	Tyr	Ala	Pro	Met	Asn
1				5					10

<210> 111

<211> 10

<212> PRT

<213> Mus sp.

<220>

<221> misc_feature

<222> (1)..(10)

<223> Mouse CD154 peptide (Mus p.)

<400> 111

Trp	Ala	Lys	Lys	Gly	Tyr	Tyr	Thr	Met	Lys
1				5					10

<210> 112

<211> 10

<212> PRT

<213> Bos taurus

<220>

<221> misc_feature

<222> (1)..(10)

<223> Cow CD154 peptide (Bos taurus)

<400> 112

Trp	Ala	Pro	Lys	Gly	Tyr	Tyr	Thr	Leu	Ser
1				5					10

<210> 113

<211> 139

<212> PRT

<213> Artificial Sequence

<220>

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<223> Synthetic: Heavy chain, Leader
sequence-FR1-CDR1-FR2-CDR2-FR3-CDR3-FR4

<400> 113

Met Ala Val Leu Ala Leu Leu Leu Cys Leu Val Ala Phe Pro Ser Cys
1 5 10 15

Thr Leu Ser Gln Val Gln Leu Lys Glu Ser Gly Pro Gly Leu Val Ala
20 25 30

Pro Ser Gln Ser Leu Ser Ile Thr Cys Thr Val Ser Gly Phe Ser Leu
35 40 45

Thr Thr Tyr Asp Ile Asn Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu
50 55 60

Glu Trp Leu Gly Ile Ile Trp Thr Gly Gly Gly Thr Asn Tyr Asn Ser
65 70 75 80

Ala Phe Met Ser Arg Leu Ser Ile Ser Lys Asp Asn Ser Lys Ser Gln
85 90 95

Val Phe Leu Lys Met Asn Ser Leu Gln Thr Asp Asp Thr Ala Ile Tyr
100 105 110

Tyr Cys Val Arg Asp Arg Gly Tyr Tyr Val Tyr Tyr Ser Met Asp Tyr
115 120 125

Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser
130 135

<210> 114

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic: Light chain, Leader

2017-05-01_5658-00379_ST25
sequence-FR1-CDR1-FR2-CDR2-FR3-CDR3-FR4

<400> 114

Met Met Ser Ser Ala Gln Phe Leu Gly Leu Leu Leu Leu Cys Phe Gln
1 5 10 15

Gly Thr Arg Cys Asp Ile Gln Met Thr Gln Thr Thr Ser Ser Leu Ser
20 25 30

Ala Ser Leu Gly Asp Arg Val Thr Ile Ser Cys Arg Ala Ser Gln Asp
35 40 45

Ile Ser Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Thr Val
50 55 60

Lys Leu Leu Ile Tyr Tyr Thr Ser Arg Leu His Ser Gly Val Pro Ser
65 70 75 80

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser
85 90 95

Asn Leu Glu Gln Glu Asp Ile Ala Thr Tyr Phe Cys Gln Gln Gly Asn
100 105 110

Met Phe Pro Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
115 120 125

<210> 115

<211> 264

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic: amino acid

<400> 115

Met Thr Gln Ser Gln Lys Phe Met Ser Thr Ser Val Gly Asp Arg Val
1 5 10 15

Ser Val Thr Cys Lys Ala Ser Gln Asn Val Gly Thr Asn Val Ala Trp
 20 25 30

Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Ala Leu Ile Tyr Ser Ala
 35 40 45

Ser Tyr Arg Tyr Ser Gly Val Pro Asp Arg Phe Thr Gly Ser Gly Ser
 50 55 60

Gly Thr Asp Phe Thr Leu Thr Ile Ser Asn Val Gln Ser Glu Asp Leu
 65 70 75 80

Ala Asp Tyr Phe Cys Gln Gln Tyr Ser Ser Tyr Pro Leu Thr Phe Gly
 85 90 95

Gly Gly Thr Lys Leu Glu Ile Lys Gly Gly Ser Ser Arg Ser Ser Leu
 100 105 110

Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Thr
 115 120 125

Ser Val Arg Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
 130 135 140

Tyr Ile Tyr Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
 145 150 155 160

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

Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr
 180 185 190

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
 195 200 205

Ala Arg Arg Gly Thr Gly Thr Val Val Phe Asp Tyr Trp Gly His Gly
 210 215 220

Thr Thr Leu Thr Val Ser Ser Ala Lys Thr Thr Pro Pro Ser Val Thr
 225 230 235 240

Ser Gly Gln Ala Gly Gln His His His His His His Gly Ala Tyr Pro
 245 250 255

Tyr Asp Val Pro Asp Tyr Ala Ser
 260

<210> 116
 <211> 10
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic: Heavy chain CDR1

<400> 116

Gly Phe Ser Leu Thr Thr Tyr Asp Ile Asn
 1 5 10

<210> 117
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic: Heavy chain CDR2

<400> 117

Ile Ile Trp Thr Gly Gly Gly Thr Asn Tyr Asn Ser Ala Phe Met Ser
 1 5 10 15

<210> 118
 <211> 12

<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Heavy chain CDR3

<400> 118

Asp	Arg	Gly	Tyr	Tyr	Val	Tyr	Tyr	Ser	Met	Asp	Tyr
1				5					10		

<210> 119
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Light chain CDR1

<400> 119

Arg	Ala	Ser	Gln	Asp	Ile	Ser	Asn	Tyr	Leu	Asn
1				5					10	

<210> 120
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Light chain CDR2

<400> 120

Tyr	Thr	Ser	Arg	Leu	His	Ser
1				5		

<210> 121
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Light chain CDR3

<400> 121

Gln Gln Gly Asn Met Phe Pro Trp Thr
1 5

<210> 122

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic: VH, CDR1

<400> 122

Asn Tyr Tyr Ile Tyr
1 5

<210> 123

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic: VH, CDR2

<400> 123

Trp Ile Tyr Pro Gly Asn Val Asn Thr Lys Tyr Asn Glu Lys Phe Lys
1 5 10 15

Gly

<210> 124

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic: VH, CDR3

<400> 124

Arg Gly Thr Gly Thr Val Val Phe Asp Tyr Trp
 1 5 10

<210> 125
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic: VL, CDR1

<400> 125

Lys Ala Ser Gln Asn Val Gly Thr Asn Val Ala
 1 5 10

<210> 126
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic: VL, CDR2

<400> 126

Ser Ala Ser Tyr Arg Tyr Ser
 1 5

<210> 127
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic: VL, CDR3

<400> 127

Gln Gln Tyr Ser Ser Tyr Pro Leu Thr
 1 5

<210> 128
 <211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic: AOXSeqF

<400> 128

gactggttcc aattgacaag c

21

<210> 129

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic: AOXSeqR

<400> 129

gcaaattggca ttctgacatc c

21