

eolf-seq1
SEQUENCE LISTING

<110> Pieris AG;
Daiichi Sankyo Co., Ltd.

<120> NOVEL BINDING PROTEINS FOR PCSK9

<130> PIE14726PCT

<150> US 61/781,511

<151> 2013-03-14

<150> EP13175023.4

<151> 2013-07-04

<160> 89

<170> PatentIn version 3.5

<210> 1

<211> 158

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<213> Human

<220>

<223> Human tear lipocalin

<400> 1

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

Leu Glu Ser Val Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn
35 40 45

Leu Glu Ala Lys Val Thr Met Leu Ile Ser Gly Arg Cys Gln Glu Val
50 55 60

Lys Ala Val Leu Glu Lys Thr Asp Glu Pro Gly Lys Tyr Thr Ala Asp
65 70 75 80

Gly Gly Lys His Val Ala Tyr Ile Ile Arg Ser His Val Lys Asp His
85 90 95

Tyr Ile Phe Tyr Cys Glu Gly Glu Leu His Gly Lys Pro Val Arg Gly
100 105 110

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

Asp Phe Glu Lys Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile
130 135 140

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

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
 35 40 45

Val Thr Met Leu Ile Ser Gly Arg Ser Gln Glu Val Lys Ala Val Leu
 50 55 60

Glu Lys Thr Asp Glu Pro Gly Lys Tyr Thr Ala Asp Gly Gly Lys His
 65 70 75 80

Val Ala Tyr Ile Ile Arg Ser His Val Lys Asp His Tyr Ile Phe Tyr
 85 90 95

Ser Glu Gly Glu Leu His Gly Lys Pro Val Pro Gly Val Trp Leu Val
 100 105 110

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

Gln Ser Glu Thr Ser Ser Pro Gly
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Ala Met Thr Val Asp Phe Ser Arg Gly Asp Ala Ile Trp Thr Ser Val
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Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

Val Thr Met Met Tyr Ala Gly Arg Ser Gln Glu Val Lys Ala Val Leu
50 55 60

Glu Lys Thr Asp Glu Pro Gly Lys Tyr Thr Ala Met Gly Gly Ser His
65 70 75 80

Val Ala Tyr Ile Ile Arg Ser His Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Ser Glu Gly Pro Tyr Gln Gly Ala Pro Val Pro Gly Val Trp Leu Val
100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
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Ala Ser Asp Glu Glu Ile Gln Asp Val Ser Gly Thr Trp Tyr Leu Lys
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Ala Met Thr Val Asp Trp Gln Cys Asp Thr Gly Leu Trp Thr Ser Val
20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

Val Thr Met Ser Tyr Ala Gly Ala Phe Gln Glu Val Lys Ala Val Leu
50 55 60

Glu Lys Thr Asp Glu Pro Gly Lys Tyr Thr Ala Asp Gly Gly Lys His
65 70 75 80

Val Ala Tyr Ile Ile Arg Ser His Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Ser Glu Gly Glu Cys Gly Gly Trp Pro Val Pro Gly Val Trp Leu Val
100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
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Gln Ser Glu Thr Ser Ser Pro Gly
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Ala Met Thr Val Asp His Glu Trp Asn Gly His Tyr Tyr Thr Ser Val
20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

Val Thr Met Ser Tyr Arg Gly Arg Ser Gln Glu Val Lys Ala Val Leu
50 55 60

Glu Lys Thr Asp Glu Pro Gly Lys Tyr Thr Ala Pro Gly Gly Gln His
65 70 75 80

Val Ala Tyr Ile Ile Arg Ser His Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Ser Glu Gly Ser Trp Pro Gly Tyr Pro Val Pro Gly Val Trp Leu Val
100 105 110

Gly Arg Asp Pro Lys Asn Asn Leu Glu Ala Leu Glu Asp Phe Glu Lys
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Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
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Gln Ser Glu Thr Ser Ser Pro Gly
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Ala Met Thr Val Asp Phe Thr Asp Asn Ser Pro Met Phe Thr Ser Val
 20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
 35 40 45

Val Thr Met Gln Tyr Ala Gly Arg Ser Gln Glu Val Lys Ala Val Leu
 50 55 60

Glu Lys Thr Asp Glu Pro Gly Lys Tyr Thr Ala Ile Gly Gly Thr His
 65 70 75 80

Val Ala Tyr Ile Ile Arg Ser His Val Lys Asp His Tyr Ile Phe Tyr
 85 90 95

Ser Glu Gly Ala Glu Arg Gly Arg Pro Val Pro Gly Val Trp Leu Val
 100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
 130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
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Ala Met Thr Val Asp Arg Phe Lys Ile Ala Ser Trp Pro Arg Ser Val
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Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

Val Thr Met Asn Trp Trp Gly Arg Ser Gln Glu Val Lys Ala Val Leu
50 55 60

Glu Lys Thr Asp Glu Pro Gly Lys Tyr Thr Ala Gln Gly Gly Ser His
65 70 75 80

Val Ala Tyr Ile Ile Arg Ser His Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Ser Glu Gly Asn Arg Gln Gly Asp Pro Val Pro Gly Val Trp Leu Val
100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
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Ala Ser Asp Glu Glu Ile Gln Asp Val Ser Gly Thr Trp Tyr Leu Lys
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Ala Met Thr Val Asp Phe Lys Gly Pro Thr Pro Leu Trp Thr Ser Val
20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

Val Thr Met Phe His Ala Gly Arg Ser Gln Glu Val Lys Ala Val Leu
50 55 60

Glu Lys Thr Asp Glu Pro Gly Lys Tyr Thr Ala Tyr Gly Gly Arg His
65 70 75 80

Val Ala Tyr Ile Ile Arg Ser His Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

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Ser Glu Gly Ala Ser Val Gly Asn Pro Val Pro Gly Val Trp Leu Val
100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
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Gln Ser Glu Thr Ser Ser Pro Gly
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Ala Ser Asp Glu Glu Ile Gln Asp Val Ser Gly Thr Trp Tyr Leu Lys
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Ala Met Thr Val Asp Thr Glu His Leu Ala Asp Trp Ala Asn Ser Val
20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

Val Thr Met His Gln Pro Gly Arg Ser Gln Glu Val Lys Ala Val Leu
50 55 60

Glu Lys Thr Asp Glu Pro Gly Lys Tyr Thr Ala Ile Gly Gly Ser His
65 70 75 80

Val Ala Tyr Ile Ile Arg Ser His Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Ser Glu Gly Ala Tyr Pro Gly Ser Pro Val Pro Gly Val Trp Leu Val
100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
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Gln Ser Glu Thr Ser Ser Pro Gly
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Ala Met Thr Val Asp Arg Ala Asp Met Gly Asp Trp Pro Asn Ser Val
20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

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

Glu Lys Thr Asp Glu Pro Gly Lys Tyr Thr Ala Thr Gly Gly Glu His
65 70 75 80

Val Ala Tyr Ile Ile Arg Ser His Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Ser Glu Gly Thr Leu Thr Gly Arg Pro Val Pro Gly Val Trp Leu Val
100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
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Gln Ser Glu Thr Ser Ser Pro Gly
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Ala Ser Asp Glu Glu Ile Gln Asp Val Ser Gly Thr Trp Tyr Leu Lys
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Ala Met Thr Val Asp Trp Arg Leu Asp Asn Glu Leu Trp Thr Ser Val
20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

Val Thr Met Met Tyr Ala Gly Arg Ser Gln Glu Val Lys Ala Val Leu
50 55 60

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Glu Lys Thr Asp Glu Pro Gly Lys Tyr Thr Ala Gln Gly Gly Ser His
65 70 75 80

Val Ala Tyr Ile Ile Arg Ser His Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Ser Glu Gly Pro Arg Asn Gly Ala Pro Val Pro Gly Val Trp Leu Val
100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
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Gln Ser Glu Thr Ser Ser Pro Gly
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Ala Met Thr Leu Asp Trp Gln Cys Asp Thr Gly Leu Trp Thr Ser Val
20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

Val Thr Met Ser Tyr Ala Gly Ala Phe Gln Glu Val Lys Ala Val Leu
50 55 60

Glu Lys Thr Asp Glu Pro Gly Lys Tyr Thr Ala Asp Gly Gly Lys His
65 70 75 80

Val Ala Tyr Ile Ile Arg Ser His Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Ser Glu Gly Glu Cys Gly Gly Trp Pro Val Pro Gly Val Trp Leu Val
100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
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Gln Ser Glu Thr Ser Ser Pro Gly
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Ala Ser Asp Glu Glu Ile Gln Asp Val Ser Gly Thr Trp Tyr Leu Lys
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Ala Met Thr Val Asp Phe Ser Arg Gly Asp Ala Ile Trp Thr Ser Val
20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

Val Thr Met Met Tyr Ala Gly Arg Ser Gln Glu Val Lys Ala Val Leu
50 55 60

Glu Arg Thr Asp Glu Pro Gly Lys Tyr Thr Thr Met Gly Gly Ser His
65 70 75 80

Val Ala Tyr Ile Ile Arg Ser Pro Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Ser Glu Gly Pro His Gln Gly Ala Pro Val Pro Gly Val Trp Leu Val
100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
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Ala Met Thr Val Asp Phe Ser Arg Gly Asp Ala Ile Trp Thr Ser Val
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Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

Val Thr Met Met Tyr Ala Gly Arg Ser Gln Glu Val Lys Ala Val Leu
50 55 60

Glu Lys Thr Asp Glu Pro Gly Lys Tyr Thr Ala Met Gly Gly Ser His
65 70 75 80

Val Ala Tyr Ile Thr Arg Ser His Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Ser Glu Gly Pro His Gln Gly Ala Pro Val Pro Gly Val Trp Leu Val
100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
145 150

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Ala Ser Asp Glu Glu Ile Gln Asp Val Ser Gly Thr Trp Tyr Leu Lys
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Ala Met Thr Val Asp Phe Ser Arg Gly Asp Ala Ile Trp Thr Ser Val
20 25 30

Thr Pro Met Thr Leu Thr Ile Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

Val Thr Met Met Tyr Ala Gly Arg Ser Gln Gly Val Lys Val Val Leu
50 55 60

Glu Lys Thr Asp Glu Pro Gly Lys Tyr Thr Ala Met Gly Gly Ser Gln
65 70 75 80

Val Ala Tyr Ile Ile Arg Ser His Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Pro Glu Gly Pro Tyr Gln Gly Ala Pro Val Pro Gly Val Trp Leu Val
100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
145 150

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Ala Met Thr Val Asp Phe Ser Arg Gly Asp Ala Ile Trp Thr Ser Val
20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

Val Thr Met Met Tyr Ala Gly Arg Ser Gln Glu Val Lys Ala Val Leu
50 55 60

Glu Lys Thr Asp Glu Pro Gly Lys Tyr Thr Thr Met Gly Gly Ser His
65 70 75 80

Val Ala Tyr Ile Ile Arg Ser His Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Ser Glu Gly Pro Tyr Gln Gly Ala Pro Val Pro Gly Val Trp Leu Val
100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
145 150

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Ala Met Thr Val Asp Phe Ser Arg Gly Asp Ala Ile Trp Thr Ser Val
 20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
 35 40 45

Val Thr Met Met Tyr Ala Gly Arg Ser Gln Glu Val Lys Ala Val Leu
 50 55 60

Glu Lys Thr Asp Glu Pro Gly Lys Tyr Thr Ala Ser Gly Gly Ser His
 65 70 75 80

Val Ala Tyr Ile Ile Arg Ser His Val Lys Asp His Tyr Ile Phe Tyr
 85 90 95

Ser Glu Gly Pro His Gln Gly Ala Pro Val Pro Gly Val Trp Leu Val
 100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
 130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
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Ala Met Thr Val Asp Phe Ser Arg Gly Asp Ala Ile Trp Thr Ser Val
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Thr Pro Met Thr Leu Thr Ala Leu Glu Gly Gly Gly Leu Glu Ala Lys
35 40 45

Val Thr Met Met Tyr Ala Gly Arg Ser Gln Glu Val Lys Val Val Leu
50 55 60

Glu Lys Thr Asp Glu Pro Gly Lys Tyr Thr Ala Met Gly Gly Ser His
65 70 75 80

Gly Ala Tyr Ile Thr Arg Ser His Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Ser Glu Gly Pro Tyr Arg Gly Ala Pro Val Pro Gly Val Trp Leu Val
100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
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Ala Met Thr Val Asp Phe Ser Arg Gly Asp Ala Ile Trp Thr Ser Val
20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Met Glu Ala Lys
35 40 45

Val Thr Met Met Tyr Ala Gly Arg Ser Gln Glu Val Lys Ala Val Leu
50 55 60

Glu Lys Thr Asp Glu Pro Gly Lys Tyr Thr Ala Met Gly Gly Ser His
65 70 75 80

Val Ala Tyr Ile Ile Arg Ser His Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Ser Glu Gly Leu Tyr Gln Gly Ala Pro Val Pro Gly Val Trp Leu Val
 100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
 130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
 145 150

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Ala Met Thr Val Asp Phe Ser Arg Gly Asp Ala Ile Trp Thr Ser Val
 20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
 35 40 45

Val Thr Met Met Tyr Ala Gly Arg Ser Gln Glu Val Lys Ala Val Leu
 50 55 60

Glu Lys Thr Asp Glu Pro Gly Lys Tyr Thr Val Met Gly Gly Ser His
 65 70 75 80

Val Ala Ser Ile Ile Arg Ser His Val Lys Asp His Tyr Ile Phe Tyr
 85 90 95

Pro Glu Gly Pro Tyr Gln Gly Ala Pro Val Pro Gly Val Trp Leu Val
 100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
 130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
 145 150

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Ala Met Thr Val Asp Phe Ser Arg Gly Asp Ala Ile Trp Thr Ser Val
20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

Val Thr Met Met Tyr Ala Gly Arg Ser Gln Glu Val Lys Ala Val Leu
50 55 60

Glu Lys Thr Asp Glu Pro Gly Lys Tyr Thr Ala Met Gly Gly Ser His
65 70 75 80

Val Ala Tyr Ile Leu Arg Ser His Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Ser Glu Gly Pro His Gln Gly Ala Pro Val Pro Gly Val Trp Leu Val
100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
145 150

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<400> 22

Ala Ser Asp Glu Glu Ile Gln Asp Val Ser Gly Thr Trp Tyr Leu Lys
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Ala Met Thr Val Asp Arg Phe Lys Ile Ala Ser Trp Pro Arg Ser Val
20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

eo1f-seq1

Val Thr Met Asn Trp Trp Gly Arg Ser Gln Glu Val Lys Ala Val Leu
50 55 60

Glu Arg Thr Asp Glu Pro Gly Lys Tyr Thr Ala Gln Gly Asp Arg His
65 70 75 80

Val Ala Tyr Ile Ile Arg Ser His Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Ser Glu Gly Asn Leu Gln Gly Glu Thr Val Pro Gly Val Trp Leu Val
100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
145 150

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1 5 10 15

Ala Met Thr Val Asp Arg Phe Lys Ile Ala Ser Trp Pro Arg Ser Val
20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Gly Gly Gly Asn Leu Glu Ala Lys
35 40 45

Val Thr Met Asn Trp Trp Gly Arg Ser Gln Glu Val Lys Ala Val Leu
50 55 60

Glu Lys Thr Asp Glu Pro Gly Lys Tyr Thr Ala Gln Gly Gly Ser His
65 70 75 80

Val Glu His Ile Ile Arg Ser His Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Ser Lys Gly Asn Leu Gln Gly Glu Pro Val Pro Gly Val Trp Leu Val
100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
 130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
 145 150

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<400> 24

Ala Ser Asp Glu Glu Ile Gln Asp Val Ser Gly Thr Trp Tyr Leu Lys
 1 5 10 15

Ala Met Thr Val Asp Arg Phe Lys Ile Ala Ser Trp Pro Arg Ser Val
 20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
 35 40 45

Val Thr Met Asn Trp Trp Gly Arg Ser Gln Glu Val Lys Ala Val Leu
 50 55 60

Glu Lys Thr Asp Glu Pro Gly Lys Tyr Thr Ala Gln Gly Gly Ser His
 65 70 75 80

Val Glu Tyr Ile Ile Arg Ser His Val Lys Asp His Tyr Ile Phe Tyr
 85 90 95

Ser Glu Gly Asn Leu Gln Gly Glu Pro Val Pro Gly Val Trp Leu Val
 100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
 130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
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Ala Ser Asp Glu Glu Ile Gln Asp Val Ser Gly Thr Trp Tyr Leu Lys
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Ala Met Thr Val Asp Arg Phe Lys Ile Ala Ser Trp Pro Arg Ser Val
20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

Val Thr Met Asn Trp Trp Gly Arg Ser Gln Asp Val Lys Ala Val Leu
50 55 60

Gly Lys Thr Asp Glu Pro Gly Lys Tyr Thr Ala Gln Gly Asp Ser His
65 70 75 80

Val Ser Tyr Ile Ile Arg Ser His Val Lys Asp His Tyr Ile Leu Tyr
85 90 95

Ser Val Gly Asn Leu Gln Gly Glu Thr Val Pro Gly Val Trp Leu Val
100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
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<400> 26

Ala Ser Asp Glu Glu Ile Gln Asp Val Ser Gly Thr Trp Tyr Leu Lys
1 5 10 15

Ala Met Thr Val Asp Arg Phe Lys Ile Ala Ser Trp Pro Arg Ser Val
20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

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Val Thr Met Asn Trp Trp Gly Arg Ser Gln Glu Val Lys Ala Val Leu
50 55 60

Glu Lys Thr Asp Glu Pro Gly Lys Tyr Thr Ala Val Gly Gly Ser His
65 70 75 80

Val Ala Tyr Ile Ile Arg Ser His Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Ser Glu Gly Lys Leu Gln Gly Glu Pro Val Pro Gly Val Trp Leu Val
100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
145 150

<210> 27
<211> 152
<212> PRT
<213> Artificial

<220>
<223> Mutein of human tear lipocalin

<400> 27

Ala Ser Asp Glu Glu Ile Gln Asp Val Ser Gly Thr Trp Tyr Leu Lys
1 5 10 15

Ala Met Thr Val Asp Arg Phe Lys Ile Gly Ser Trp Pro Arg Ser Val
20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

Val Thr Met Asn Trp Arg Gly Arg Ser Gln Glu Val Lys Ala Val Leu
50 55 60

Glu Lys Thr Asp Glu Pro Gly Lys Tyr Thr Ala Gln Gly Gly Ser His
65 70 75 80

Val Ala Tyr Ile Ile Arg Ser His Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Ser Glu Gly Lys Leu Gln Gly Glu Pro Val Pro Gly Val Trp Leu Val
100 105 110

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

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Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
145 150

<210> 28
<211> 152
<212> PRT
<213> Artificial

<220>
<223> Mutein of human tear lipocalin

<400> 28

Ala Ser Asp Glu Glu Ile Gln Asp Val Ser Gly Thr Trp Tyr Leu Lys
1 5 10 15

Ala Met Thr Val Asp Arg Phe Lys Ile Gly Ala Trp Pro Arg Ser Val
20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

Val Thr Met Asn Trp Trp Gly Arg Ser Gln Glu Val Lys Ala Val Leu
50 55 60

Glu Lys Thr Asp Glu Pro Gly Lys Tyr Thr Ala Thr Gly Gly Ser His
65 70 75 80

Val Ala Tyr Ile Ile Arg Ser His Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Ser Glu Gly Lys Leu Gln Gly Glu Pro Val Pro Gly Val Trp Leu Val
100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
145 150

<210> 29
<211> 237
<212> PRT
<213> Artificial

<220>
<223> Amino acid sequence of the light chain of antibody 31H4

eo1f-seq1

<220>

<221> SIGNAL

<222> (1)..(20)

<400> 29

Met Val Leu Gln Thr Gln Val Phe Ile Ser Leu Leu Leu Trp Ile Ser
1 5 10 15

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

Ala Pro Gly Gln Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Ser Asn
35 40 45

Ile Gly Ala Gly Tyr Asp Val His Trp Tyr Gln Gln Leu Pro Gly Thr
50 55 60

Ala Pro Lys Leu Leu Ile Ser Gly Asn Ser Asn Arg Pro Ser Gly Val
65 70 75 80

Pro Asp Arg Phe Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala
85 90 95

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

Tyr Asp Ser Ser Leu Ser Gly Ser Val Phe Gly Gly Gly Thr Lys Leu
115 120 125

Thr Val Leu Gly Gln Pro Lys Ala Ala Pro Ser Val Thr Leu Phe Pro
130 135 140

Pro Ser Ser Glu Glu Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu
145 150 155 160

Ile Ser Asp Phe Tyr Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp
165 170 175

Ser Ser Pro Val Lys Ala Gly Val Glu Thr Thr Thr Pro Ser Lys Gln
180 185 190

Ser Asn Asn Lys Tyr Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu
195 200 205

Gln Trp Lys Ser His Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly
210 215 220

Ser Thr Val Glu Lys Thr Val Ala Pro Thr Glu Cys Ser
225 230 235

eo1f-seq1

<210> 30
 <211> 152
 <212> PRT
 <213> Artificial

<220>
 <223> Variant of mutein shown in SEQ ID NO: 22

<400> 30

Ala Ser Asp Glu Glu Ile Gln Asp Val Ser Gly Thr Trp Tyr Leu Lys
 1 5 10 15

Ala Met Thr Val Asp Arg Phe Lys Ile Ala Ser Trp Pro Arg Ser Val
 20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
 35 40 45

Val Thr Met Asn Trp Trp Gly Arg Ser Gln Glu Val Lys Ala Val Leu
 50 55 60

Glu Arg Thr Asp Glu Pro Gly Lys Tyr Thr Ala Gln Gly Asp Arg His
 65 70 75 80

Val Ala Tyr Ile Ile Arg Ser His Val Lys Asp His Tyr Ile Phe Tyr
 85 90 95

Ser Glu Gly Asn Leu Gln Gly Glu Thr Val Pro Gly Val Trp Leu Val
 100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
 130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
 145 150

<210> 31
 <211> 152
 <212> PRT
 <213> Artificial

<220>
 <223> Variant of mutein shown in SEQ ID NO: 13

<400> 31

Ala Ser Asp Glu Glu Ile Gln Asp Val Ser Gly Thr Trp Tyr Leu Lys
 1 5 10 15

Ala Met Thr Val Asp Phe Ser Arg Gly Asp Ala Ile Trp Thr Ser Val
 20 25 30

eolf-seql

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

Val Thr Met Met Tyr Ala Gly Arg Ser Gln Glu Val Lys Ala Val Leu
50 55 60

Glu Arg Thr Asp Glu Pro Gly Lys Tyr Thr Thr Met Gly Gly Ser His
65 70 75 80

Val Ala Tyr Ile Ile Arg Ser Pro Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Ser Glu Gly Pro His Gln Gly Ala Pro Val Pro Gly Val Trp Leu Val
100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
145 150

<210> 32

<211> 152

<212> PRT

<213> Artificial

<220>

<223> Variant of mutein shown in SEQ ID NO: 20

<400> 32

Ala Ser Asp Glu Glu Ile Gln Asp Val Ser Gly Thr Trp Tyr Leu Lys
1 5 10 15

Ala Met Thr Val Asp Phe Ser Arg Gly Asp Ala Ile Trp Thr Ser Val
20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

Val Thr Met Met Tyr Ala Gly Arg Ser Gln Glu Val Lys Ala Val Leu
50 55 60

Glu Lys Thr Asp Glu Pro Gly Lys Tyr Thr Val Met Gly Gly Ser His
65 70 75 80

Val Ala Ser Ile Ile Arg Ser His Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Pro Glu Gly Pro Tyr Gln Gly Ala Pro Val Pro Gly Val Trp Leu Val
100 105 110

eolf-seq1

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
145 150

<210> 33
<211> 472
<212> PRT
<213> Artificial

<220>
<223> Amino acid sequence of the heavy chain of antibody 31H4

<220>
<221> SIGNAL
<222> (1)..(19)

<400> 33

Met Lys His Leu Trp Phe Phe Leu Leu Leu Val Ala Ala Pro Arg Trp
1 5 10 15

Val Leu Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Lys
20 25 30

Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
35 40 45

Ser Ser Tyr Ser Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
50 55 60

Glu Trp Val Ser Ser Ile Ser Ser Ser Ser Ser Tyr Ile Ser Tyr Ala
65 70 75 80

Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn
85 90 95

Ser Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val
100 105 110

Tyr Phe Cys Ala Arg Asp Tyr Asp Phe Trp Ser Ala Tyr Tyr Asp Ala
115 120 125

Phe Asp Val Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Ala Ser
130 135 140

Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr
145 150 155 160

eo1f-seq1

Ser Gly Gly Thr Ala₁₆₅ Ala Leu Gly Cys₁₇₀ Leu Val Lys Asp Tyr Phe₁₇₅ Pro

Glu Pro Val Thr₁₈₀ Val Ser Trp Asn₁₈₅ Gly Ala Leu Thr Ser₁₉₀ Gly Val

His Thr Phe₁₉₅ Pro Ala Val Leu Gln₂₀₀ Ser Ser Gly Leu Tyr₂₀₅ Ser Leu Ser

Ser Val₂₁₀ Val Thr Val Pro Ser₂₁₅ Ser Ser Leu Gly Thr₂₂₀ Gln Thr Tyr Ile

Cys₂₂₅ Asn Val Asn His Lys₂₃₀ Pro Ser Asn Thr Lys₂₃₅ Val Asp Lys Arg Val₂₄₀

Glu Pro Lys Ser Cys₂₄₅ Asp Lys Thr His Thr₂₅₀ Cys Pro Pro Cys Pro₂₅₅ Ala

Pro Glu Leu Leu₂₆₀ Gly Gly Pro Ser Val₂₆₅ Phe Leu Phe Pro₂₇₀ Pro Lys Pro

Lys Asp Thr₂₇₅ Leu Met Ile Ser Arg₂₈₀ Thr Pro Glu Val Thr₂₈₅ Cys Val Val

Val Asp₂₉₀ Val Ser His Glu Asp₂₉₅ Pro Glu Val Lys Phe₃₀₀ Asn Trp Tyr Val

Asp₃₀₅ Gly Val Glu Val His₃₁₀ Asn Ala Lys Thr Lys₃₁₅ Pro Arg Glu Glu Gln₃₂₀

Tyr Asn Ser Thr Tyr₃₂₅ Arg Val Val Ser Val₃₃₀ Leu Thr Val Leu His₃₃₅ Gln

Asp Trp Leu Asn₃₄₀ Gly Lys Glu Tyr Lys₃₄₅ Cys Lys Val Ser Asn₃₅₀ Lys Ala

Leu Pro Ala₃₅₅ Pro Ile Glu Lys Thr₃₆₀ Ile Ser Lys Ala Lys₃₆₅ Gly Gln Pro

Arg Glu₃₇₀ Pro Gln Val Tyr Thr₃₇₅ Leu Pro Pro Ser Arg₃₈₀ Glu Glu Met Thr

Lys₃₈₅ Asn Gln Val Ser Leu₃₉₀ Thr Cys Leu Val Lys₃₉₅ Gly Phe Tyr Pro Ser₄₀₀

Asp Ile Ala Val Glu₄₀₅ Trp Glu Ser Asn Gly₄₁₀ Gln Pro Glu Asn Asn₄₁₅ Tyr

Lys Thr Thr Pro₄₂₀ Pro Val Leu Asp Ser₄₂₅ Asp Gly Ser Phe Phe₄₃₀ Leu Tyr

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Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
435 440 445

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
450 455 460

Ser Leu Ser Leu Ser Pro Gly Lys
465 470

<210> 34
<211> 692
<212> PRT
<213> Artificial

<220>
<223> Full-length human proprotein convertase subtilisin/kexin type 9
(PCSK9) according to SWISS PROT Data Bank Accession NO: Q8NBP7

<400> 34

Met Gly Thr Val Ser Ser Arg Arg Ser Trp Trp Pro Leu Pro Leu Leu
1 5 10 15

Leu Leu Leu Leu Leu Leu Gly Pro Ala Gly Ala Arg Ala Gln Glu
20 25 30

Asp Glu Asp Gly Asp Tyr Glu Glu Leu Val Leu Ala Leu Arg Ser Glu
35 40 45

Glu Asp Gly Leu Ala Glu Ala Pro Glu His Gly Thr Thr Ala Thr Phe
50 55 60

His Arg Cys Ala Lys Asp Pro Trp Arg Leu Pro Gly Thr Tyr Val Val
65 70 75 80

Val Leu Lys Glu Glu Thr His Leu Ser Gln Ser Glu Arg Thr Ala Arg
85 90 95

Arg Leu Gln Ala Gln Ala Ala Arg Arg Gly Tyr Leu Thr Lys Ile Leu
100 105 110

His Val Phe His Gly Leu Leu Pro Gly Phe Leu Val Lys Met Ser Gly
115 120 125

Asp Leu Leu Glu Leu Ala Leu Lys Leu Pro His Val Asp Tyr Ile Glu
130 135 140

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

Ile Thr Pro Pro Arg Tyr Arg Ala Asp Glu Tyr Gln Pro Pro Asp Gly
165 170 175

eo1f-seq1

Gly Ser Leu Val₁₈₀ Glu Val Tyr Leu₁₈₅ Leu Asp Thr Ser Ile Gln₁₉₀ Ser Asp
 His Arg Glu₁₉₅ Ile Glu Gly Arg Val₂₀₀ Met Val Thr Asp Phe₂₀₅ Glu Asn Val
 Pro Glu₂₁₀ Glu Asp Gly Thr Arg₂₁₅ Phe His Arg Gln Ala₂₂₀ Ser Lys Cys Asp
 Ser₂₂₅ His Gly Thr His Leu₂₃₀ Ala Gly Val Val Ser₂₃₅ Gly Arg Asp Ala Gly₂₄₀
 Val Ala Lys Gly Ala₂₄₅ Ser Met Arg Ser Leu₂₅₀ Arg Val Leu Asn Cys₂₅₅ Gln
 Gly Lys Gly Thr Val Ser Gly Thr Leu₂₆₅ Ile Gly Leu Glu Phe₂₇₀ Ile Arg
 Lys Ser Gln₂₇₅ Leu Val Gln Pro Val₂₈₀ Gly Pro Leu Val Val₂₈₅ Leu Leu Pro
 Leu Ala₂₉₀ Gly Gly Tyr Ser Arg₂₉₅ Val Leu Asn Ala Ala₃₀₀ Cys Gln Arg Leu
 Ala₃₀₅ Arg Ala Gly Val Val₃₁₀ Leu Val Thr Ala Ala₃₁₅ Gly Asn Phe Arg Asp₃₂₀
 Asp Ala Cys Leu Tyr₃₂₅ Ser Pro Ala Ser Ala₃₃₀ Pro Glu Val Ile Thr₃₃₅ Val
 Gly Ala Thr Asn₃₄₀ Ala Gln Asp Gln Pro₃₄₅ Val Thr Leu Gly Thr₃₅₀ Leu Gly
 Thr Asn Phe₃₅₅ Gly Arg Cys Val Asp₃₆₀ Leu Phe Ala Pro Gly₃₆₅ Glu Asp Ile
 Ile Gly₃₇₀ Ala Ser Ser Asp Cys₃₇₅ Ser Thr Cys Phe Val₃₈₀ Ser Gln Ser Gly
 Thr₃₈₅ Ser Gln Ala Ala Ala₃₉₀ His Val Ala Gly Ile₃₉₅ Ala Ala Met Met Leu₄₀₀
 Ser Ala Glu Pro Glu₄₀₅ Leu Thr Leu Ala Glu₄₁₀ Leu Arg Gln Arg Leu₄₁₅ Ile
 His Phe Ser Ala₄₂₀ Lys Asp Val Ile Asn₄₂₅ Glu Ala Trp Phe Pro₄₃₀ Glu Asp
 Gln Arg Val₄₃₅ Leu Thr Pro Asn Leu₄₄₀ Val Ala Ala Leu Pro₄₄₅ Pro Ser Thr

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His Gly Ala Gly Trp Gln Leu Phe Cys Arg Thr Val Trp Ser Ala His
 450 455 460
 Ser Gly Pro Thr Arg Met Ala Thr Ala Ile Ala Arg Cys Ala Pro Asp
 465 470 475 480
 Glu Glu Leu Leu Ser Cys Ser Ser Phe Ser Arg Ser Gly Lys Arg Arg
 485 490 495
 Gly Glu Arg Met Glu Ala Gln Gly Gly Lys Leu Val Cys Arg Ala His
 500 505 510
 Asn Ala Phe Gly Gly Glu Gly Val Tyr Ala Ile Ala Arg Cys Cys Leu
 515 520 525
 Leu Pro Gln Ala Asn Cys Ser Val His Thr Ala Pro Pro Ala Glu Ala
 530 535 540
 Ser Met Gly Thr Arg Val His Cys His Gln Gln Gly His Val Leu Thr
 545 550 555 560
 Gly Cys Ser Ser His Trp Glu Val Glu Asp Leu Gly Thr His Lys Pro
 565 570 575
 Pro Val Leu Arg Pro Arg Gly Gln Pro Asn Gln Cys Val Gly His Arg
 580 585 590
 Glu Ala Ser Ile His Ala Ser Cys Cys His Ala Pro Gly Leu Glu Cys
 595 600 605
 Lys Val Lys Glu His Gly Ile Pro Ala Pro Gln Glu Gln Val Thr Val
 610 615 620
 Ala Cys Glu Glu Gly Trp Thr Leu Thr Gly Cys Ser Ala Leu Pro Gly
 625 630 635 640
 Thr Ser His Val Leu Gly Ala Tyr Ala Val Asp Asn Thr Cys Val Val
 645 650 655
 Arg Ser Arg Asp Val Ser Thr Thr Gly Ser Thr Ser Glu Glu Ala Val
 660 665 670
 Thr Ala Val Ala Ile Cys Cys Arg Ser Arg His Leu Ala Gln Ala Ser
 675 680 685
 Gln Glu Leu Gln
 690

eo1f-seq1

<210> 35
<211> 580
<212> DNA
<213> Artificial

<220>
<223> Plasmid pTLPC26 (XbaI-HindIII)

<400> 35
tctagataac gagggcaaaa aatgaaaaag acagctatcg cgattgcagt ggctctggct 60
ggcttcgcta ccgtagcgca ggccgcctca gacgaggaga ttcaggatgt gtcagggacg 120
tggtatctga aggccatgac ggtggacagg gagttccctg agatgaatct ggaatcggtg 180
acacccatga ccctcacgac cctggaaggg ggcaacctgg aagccaaggt caccatgctg 240
ataagtggcc ggagccagga ggtgaaggcc gtcctggaga aaactgacga gccgggaaaa 300
tacacggccg acgggggcaa gcacgtggca tacatcatca ggtcgcacgt gaaggaccac 360
tacatctttt actctgaggg cgagctccac gggaagccgg tcccaggggt gtggctcgtg 420
ggcagagacc ccaagaacaa cctggaagcc ttggaggact ttgagaaagc cgcaggagcc 480
cgcggactca gcacggagag catcctcatc cccaggcaga gcgaaaccag ctctccaggg 540
agcgcttggt ctcacccgca gttcgaaaaa taataagctt 580

<210> 36
<211> 456
<212> DNA
<213> Artificial

<220>
<223> DNA sequence of mutein shown in SEQ ID NO: 3

<400> 36
gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg 60
gacttcagcc gcggggacgc gatatggacg agcgtaacac cgatgaccct gactacactg 120
gagggcggca acctggaggc gaaggtcacc atgatgtatg ccggccgcag ccaggaagtc 180
aaagcggttt tagaaaagac cgacgaaccg ggcaaataca ccgcgatggg tggcagccat 240
gtggcgtaga tcattcgtag ccatgttaaa gatcactata tcttttattc cgaagggtccg 300
tatcagggcg cgccggtgcc aggggtgtgg ctctgtggga gagaccccaa gaacaacctg 360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc 420
ctcatcccca ggcagagcga aaccagctct ccaggg 456

<210> 37
<211> 456
<212> DNA
<213> Artificial

<220>
<223> DNA sequence of mutein shown in SEQ ID NO: 4

<400> 37
gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg 60
gattggcaat gtgatactgg gctgtggact tctgttacgc caatgactct gactaccctt 120

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gaaggcggca atctggaggc taaggtcacc atgtcttacg caggggcatt tcaggaggtg	180
aaagcagtgt tagagaagac agatgaaccg ggtaaataata cggccgatgg cggtaaacad	240
gttgccctata tcattcgcag ccatgtgaaa gatcattaca tcttttatag cgagggcgag	300
tgtgggggggt ggcctgttcc aggggtgtgg ctcgtgggca gagaccccaa gaacaacctg	360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc	420
ctcatcccca ggcagagcga aaccagctct ccaggg	456

<210> 38
 <211> 456
 <212> DNA
 <213> Artificial

<220>
 <223> DNA sequence of mutein shown in SEQ ID NO: 5

<400> 38	
gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg	60
gaccacgaat ggaacggcca ttactatacg agcgtaacac cgatgaccct gactacactg	120
gagggcggca acctggaggc gaaggtcacc atgtcttata cgggccgcag ccaggaagtc	180
aaagcggttt tagaaaagac cgacgaaccg ggcaaataca ccgcgccggg tggccaacat	240
gtggcgtaga tcattcgtag ccatgttaaa gatcactata tcttttattc cgaaggttct	300
tggccgggct atccggtgcc aggggtgtgg ctcgtgggca gagaccccaa gaacaacctg	360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc	420
ctcatcccca ggcagagcga aaccagctct ccaggg	456

<210> 39
 <211> 456
 <212> DNA
 <213> Artificial

<220>
 <223> DNA sequence of mutein shown in SEQ ID NO: 6

<400> 39	
gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg	60
gacttcaccg acaactctcc catgtttacg agcgtaacac cgatgaccct gactacactg	120
gagggcggca acctggaggc gaaggtcacc atgcagtatg ccggccgcag ccaggaagtc	180
aaagcggttt tagaaaagac cgacgaaccg ggcaaataca ccgcgatagg tggcacccat	240
gtggcgtaga tcattcgtag ccatgttaaa gatcactata tcttttattc cgaagggtgcc	300
gaacgcggcc gtccggtgcc aggggtgtgg ctcgtgggca gagaccccaa gaacaacctg	360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc	420
ctcatcccca ggcagagcga aaccagctct ccaggg	456

<210> 40
 <211> 456

eo1f-seq1

<212> DNA
<213> Artificial

<220>

<223> DNA sequence of mutein shown in SEQ ID NO: 7

<400> 40
gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacgggtg 60
gaccgcttta aaatcgccag ctggccccgc agcgtaacac cgatgaccct gactacactg 120
gagggcggca acctggaggc gaaggtcacc atgaattggt ggggccgcag ccaggaagtc 180
aaagcggttt tagaaaagac cgacgaaccg ggcaaataca ccgcgcaggg tggcagccat 240
gtggcgtaca tcattcgtag ccatgttaaa gatcactata tcttttattc cgaaggtaat 300
cgtcagggcg atccggtgcc aggggtgtgg ctctgtgggca gagaccccaa gaacaacctg 360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc 420
ctcatcccca ggcagagcga aaccagctct ccaggg 456

<210> 41
<211> 456
<212> DNA
<213> Artificial

<220>

<223> DNA sequence of mutein shown in SEQ ID NO: 8

<400> 41
gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacgggtg 60
gacttcaagg gcccacgcc cctctggacg agcgtaacac cgatgaccct gactacactg 120
gagggcggca acctggaggc gaaggtcacc atgttccatg ccggccgcag ccaggaagtc 180
aaagcggttt tagaaaagac cgacgaaccg ggcaaataca ccgcgtacgg tggccgtcat 240
gtggcgtaca tcattcgtag ccatgttaaa gatcactata tcttttattc cgaagggtgcc 300
agcgtgggca acccggtgcc aggggtgtgg ctctgtgggca gagaccccaa gaacaacctg 360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc 420
ctcatcccca ggcagagcga aaccagctct ccaggg 456

<210> 42
<211> 456
<212> DNA
<213> Artificial

<220>

<223> DNA sequence of mutein shown in SEQ ID NO: 9

<400> 42
gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacgggtg 60
gacacggaac acttagccga ttgggcgaat agcgtaacac cgatgaccct gactacactg 120
gagggcggca acctggaggc gaaggtcacc atgcaccaac cgggccgcag ccaggaagtc 180
aaagcggttt tagaaaagac cgacgaaccg ggcaaataca ccgcgatagg tggcagccat 240
gtggcgtaca tcattcgtag ccatgttaaa gatcactata tcttttattc cgaagggtgcc 300

eof-seq1

tatccgggca gcccgggtgcc aggggtgtgg ctcgtgggca gagaccccaa gaacaacctg	360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc	420
ctcatcccca ggcagagcga aaccagctct ccaggg	456

<210> 43
 <211> 456
 <212> DNA
 <213> Artificial

<220>
 <223> DNA sequence of mutein shown in SEQ ID NO: 10

<400> 43	
gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg	60
gaccgcgcgg acatgggcga ttggcccaat agcgtaacac cgatgaccct gactacactg	120
gagggcggca acctggaggc gaaggtcacc atgttcaccc gcggccgcag ccaggaagtc	180
aaagcggttt tagaaaagac cgacgaaccg ggcaaataca ccgcgcaggg tggcgaacat	240
gtggcgtaga tcattcgtag ccatgttaaa gatcactata tcttttattc cgaaggtagc	300
ttaacaggcc gtccgggtgcc aggggtgtgg ctcgtgggca gagaccccaa gaacaacctg	360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc	420
ctcatcccca ggcagagcga aaccagctct ccaggg	456

<210> 44
 <211> 456
 <212> DNA
 <213> Artificial

<220>
 <223> DNA sequence of mutein shown in SEQ ID NO: 11

<400> 44	
gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg	60
gactggcgctc tcgataatga actctggacg agcgtaacac cgatgaccct gactacactg	120
gagggcggca acctggaggc gaaggtcacc atgatgtatg ccggccgcag ccaggaagtc	180
aaagcggttt tagaaaagac cgacgaaccg ggcaaataca ccgcgcaggg tggcagccat	240
gtggcgtaga tcattcgtag ccatgttaaa gatcactata tcttttattc cgaaggtagc	300
cgtaatggcg cgccgggtgcc aggggtgtgg ctcgtgggca gagaccccaa gaacaacctg	360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc	420
ctcatcccca ggcagagcga aaccagctct ccaggg	456

<210> 45
 <211> 456
 <212> DNA
 <213> Artificial

<220>
 <223> DNA sequence of mutein shown in SEQ ID NO: 12

eo1f-seq1

<400> 45
 gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgactttg 60
 gattggcaat gtgatactgg gctgtggact tctgttacgc caatgactct gactaccctt 120
 gaaggcggca atctggaggc taaggtcacc atgtcttacg caggggcatt tcaggaggtg 180
 aaagcagtgt tagagaagac agatgaaccg ggtaaataata cggccgatgg cggtaaacat 240
 gttgcctata tcattcgag ccatgtgaaa gatcattaca tcttttatag cgagggcgag 300
 tgtgggggggt ggcctgttcc aggggtgtgg ctctgtggga gagaccccaa gaacaacctg 360
 gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc 420
 ctcatcccca ggcagagcga aaccagctct ccaggg 456

<210> 46
 <211> 456
 <212> DNA
 <213> Artificial

<220>
 <223> DNA sequence of mutein shown in SEQ ID NO: 13

<400> 46
 gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg 60
 gacttcagcc gcggggacgc gatatggacg agcgtaacac cgatgaccct gactacactg 120
 gagggcggca acctggaggc gaaggtcacc atgatgtatg ccggccgcag ccaggaagtc 180
 aaagcggttt tagaaaggac cgacgaaccg ggcaaataca ccacgatggg tggcagccat 240
 gtggcgtaga tcatccgtag ccctgtcaaa gatcactata tcttttattc cgaaggccccg 300
 catcagggcg cgccggtgcc aggggtgtgg ctctgtggga gagaccccaa gaacaacctg 360
 gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc 420
 ctcatcccca ggcagagcga aaccagctct ccaggg 456

<210> 47
 <211> 456
 <212> DNA
 <213> Artificial

<220>
 <223> DNA sequence of mutein shown in SEQ ID NO: 14

<400> 47
 gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg 60
 gacttcagcc gcggggacgc gatatggacg agcgtaacac cgatgaccct gactacactg 120
 gagggcggca acctggaggc gaaggtcacc atgatgtatg ccggccgcag ccaggaagtc 180
 aaagcggtct tagaaaagac cgacgaaccg ggcaaataca ccgcgatggg tggcagccat 240
 gtggcgtaga tcatcgtag ccatgtttaa gatcactata tcttttattc cgaagggtccg 300
 catcagggcg cgccggtgcc aggggtgtgg ctctgtggga gagaccccaa gaacaacctg 360
 gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc 420
 ctcatcccca ggcagagcga aaccagctct ccaggg 456

eolf-seq1

<210> 48
<211> 456
<212> DNA
<213> Artificial

<220>
<223> DNA sequence of mutein shown in SEQ ID NO: 15

<400> 48
gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg 60
gacttcagcc gcggggacgc gatatggact agcgtaacac cgatgaccct gactatactg 120
gagggcggca acctggaggc gaaggtcacc atgatgtatg ccggccgcag ccagggagtc 180
aaagtggttt tagaaaagac cgacgaaccg ggcaaataca ccgcgatggg tggcagccaa 240
gtggcgtaca tcattcgtag ccatgttaaa gatcactata tcttttatcc cgaaggtccg 300
tatcagggcg cgccggtgcc aggggtgtgg ctctgtggga gagaccccaa gaacaacctg 360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc 420
ctcatcccca ggcagagcga aaccagctct ccaggg 456

<210> 49
<211> 456
<212> DNA
<213> Artificial

<220>
<223> DNA sequence of mutein shown in SEQ ID NO: 16

<400> 49
gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg 60
gacttcagcc gcggggacgc gatatggacg agcgttacgc caatgactct gactaccctt 120
gaaggcggca atctggaggc taaggtcacc atgatgtatg ccggccgcag ccaggaagtc 180
aaagcggttt tagaaaagac cgacgaaccg ggcaaataca ccacgatggg tggcagccat 240
gtggcgtaca tcattcgtag ccacgttaaa gatcactata tcttttattc cgaaggcccg 300
tatcagggcg cgccggttcc aggggtgtgg ctctgtggga gagaccccaa gaacaacctg 360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc 420
ctcatcccca ggcagagcga aaccagctct ccaggg 456

<210> 50
<211> 456
<212> DNA
<213> Artificial

<220>
<223> DNA sequence of mutein shown in SEQ ID NO: 17

<400> 50
gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg 60
gacttttcga ggggggatgc gatttggacg agcgtaacac cgatgaccct gactacactg 120
gagggcggca acctggaggc gaaggtcacc atgatgtatg ctggccggag ccaggagggtg 180

eo1f-seq1

aaagcggttt tagaaaagac cgacgaaccg ggcaaataca cgcgcagtgg gggctctcat	240
gtggcgtaca tcattcgtag ccatgtttaa gatcactata tcttttattc cgaaggctct	300
catcaggggg ctccggtgcc aggggtgtgg ctctgtggga gagaccccaa gaacaacctg	360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc	420
ctcatcccca ggcagagcga aaccagctct ccaggg	456

<210> 51
 <211> 456
 <212> DNA
 <213> Artificial

<220>
 <223> DNA sequence of mutein shown in SEQ ID NO: 18

<400> 51	
gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg	60
gacttcagcc gcggggacgc gatatggacg agcgtaacac cgatgaccct gactgcactg	120
gagggcggcg gcctggaggc gaaggtcacc atgatgtatg ccggccgcag ccaggaagtc	180
aaagtggttt tagaaaagac cgacgaaccg ggcaaataca cgcgatggg tggcagccat	240
ggggcgtaca tcactcgtag ccatgtttaa gatcactata tcttttattc cgaaggctcg	300
tatcggggcg cgccggtgcc aggggtgtgg ctctgtggga gagaccccaa gaacaacctg	360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc	420
ctcatcccca ggcagagcga aaccagctct ccaggg	456

<210> 52
 <211> 456
 <212> DNA
 <213> Artificial

<220>
 <223> DNA sequence of mutein shown in SEQ ID NO: 19

<400> 52	
gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg	60
gacttcagcc gcggggacgc gatatggacg agcgtaacac cgatgaccct gactacactg	120
gagggcggca acatggaggc gaaggtcacc atgatgtatg ccggccgcag ccaggaagtc	180
aaagcggttt tagaaaagac cgacgaaccg ggcaaataca cgcgatggg tggcagccat	240
gtggcgtaca tcattcgtag ccatgtttaa gatcactata tcttttattc cgaaggctctg	300
tatcagggcg cgccggtgcc aggggtgtgg ctctgtggga gagaccccaa gaacaacctg	360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc	420
ctcatcccca ggcagagcga aaccagctct ccaggg	456

<210> 53
 <211> 456
 <212> DNA
 <213> Artificial

eof-seq1

<220>

<223> DNA sequence of mutein shown in SEQ ID NO: 20

<400> 53

gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg	60
gacttcagcc gcggggacgc gatatggacg agcgtaacac cgatgaccct gactacactg	120
gagggcggca acctggaggc gaaggtcacc atgatgtatg ccggccgcag ccaggaagtc	180
aaagcggttt tagaaaagac cgacgagccg ggcaaataca ccgtgatggg aggtagccat	240
gtggcgtcca tcattcgtag ccatgttaag gatcactata tcttttacct cgaaggtccg	300
tatcagggcg cgccggtgcc aggggtgtgg ctctgtggga gagaccccaa gaacaacctg	360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc	420
ctcatcccca ggcagagcga aaccagctct ccaggg	456

<210> 54

<211> 456

<212> DNA

<213> Artificial

<220>

<223> DNA sequence of mutein shown in SEQ ID NO: 21

<400> 54

gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg	60
gacttcagcc gcggggacgc gatatggacg agcgtaacgc cgatgaccct gactacactg	120
gagggcggta acctggaggc gaaggtcacc atgatgtatg ccggccgcag tcaggaagtc	180
aaagcggttt tagaaaagac cgacgagccg ggcaaataca ccgcaatggg tggcagccat	240
gtggcgtaca tccttcgtag ccatgttaaa gatcactata tctttttattc cgaaggtccg	300
catcagggcg cgccggtgcc aggggtgtgg ctctgtggga gagaccccaa gaacaacctg	360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc	420
ctcatcccca ggcagagcga aaccagctct ccaggg	456

<210> 55

<211> 456

<212> DNA

<213> Artificial

<220>

<223> DNA sequence of mutein shown in SEQ ID NO: 22

<400> 55

gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg	60
gaccgcttta aaatcgccag ctggccccgc agcgtaactc cgatgaccct gactacactg	120
gagggcggca acctggaggc gaaggtcacc atgaattggt ggggcccgcag ccaggaagtc	180
aaagcggttt tagaaaggac cgacgaaccg ggcaaataca ccgcgagggg tgaccgccat	240
gtggcgtaca tcattcgtag ccatgttaaa gatcactata tctttttattc cgaaggtaat	300
cttcagggcg aaacgggtccc aggggtgtgg ctctgtggga gagaccccaa gaacaacctg	360

eo1f-seq1

gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc 420
ctcatcccca ggcagagcga aaccagctct ccaggg 456

<210> 56
<211> 456
<212> DNA
<213> Artificial

<220>
<223> DNA sequence of mutein shown in SEQ ID NO: 23

<400> 56
gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg 60
gaccgcttta aaatcgccag ctggccccgc agcgtaacac cgatgaccct gactacactg 120
gggggaggca acctggaggc gaaggtcacc atgaattggt ggggccgcag ccaggaagtc 180
aaagctgttt tagaaaagac cgacgaaccg ggcaaataca ccgcgcaggg tggtagccat 240
gtggagcata tcattcgtag ccatgttaaa gatcactata tcttttattc caaaggtaat 300
cttcagggcg aaccggtccc aggggtgtgg ctctgtggca gagaccccaa gaacaacctg 360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc 420
ctcatcccca ggcagagcga aaccagctct ccaggg 456

<210> 57
<211> 456
<212> DNA
<213> Artificial

<220>
<223> DNA sequence of mutein shown in SEQ ID NO: 24

<400> 57
gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg 60
gaccgcttta aaatcgccag ctggccccgc agcgtaacac cgatgaccct gactacactg 120
gagggaggca acctggaggc gaaggtcacc atgaattggt ggggccgcag ccaggaagtc 180
aaagcggttt tagaaaagac cgacgaaccg ggcaaataca ccgcgcaggg tggcagccat 240
gtggagtaca tcattcgtag ccatgttaaa gatcactata tcttttattc cgaaggtaat 300
cttcagggcg aaccggtccc aggggtgtgg ctctgtggca gagaccccaa gaacaacctg 360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc 420
ctcatcccca ggcagagcga aaccagctct ccaggg 456

<210> 58
<211> 456
<212> DNA
<213> Artificial

<220>
<223> DNA sequence of mutein shown in SEQ ID NO: 25

<400> 58
gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg 60

eol-f-seq1

gaccgcttta aaatcgccag ctggccccgc agcgtaacac cgatgaccct gacaacactg	120
gagggcggca acctggaggc gaaggtcacc atgaattggt ggggccgcag ccaggatgtc	180
aaagcggttt taggaaagac cgacgaaccg ggcaaataca ccgcgcaggg tgacagccat	240
gtgtcgtaga tcattcgtag ccatgtttaa gatcactata tcctttattc cgtaggtaat	300
cttcagggcg aaacgggtccc aggggtgtgg ctctgtggga gagaccccaa gaacaacctg	360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc	420
ctcatcccca ggcagagcga aaccagctct ccaggg	456

<210> 59
<211> 456
<212> DNA
<213> Artificial

<220>
<223> DNA sequence of mutein shown in SEQ ID NO: 26

<400> 59	
gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacgggtg	60
gacaggttta agattgcttc gtggcctagg agcgtaacac cgatgaccct gactacactg	120
gagggcggca acctggaggc gaaggtcacc atgaattggt ggggccggag ccaggagggtg	180
aaagcggttt tagaaaagac cgacgaaccg ggcaaataca ccgccgtggg gggctctcat	240
gtggcgtaga tcattcgtag ccatgtttaa gatcactata tcttttattc cgaaggtaag	300
ttgcaggggg agccggtgcc aggggtgtgg ctctgtggga gagaccccaa gaacaacctg	360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc	420
ctcatcccca ggcagagcga aaccagctct ccaggg	456

<210> 60
<211> 456
<212> DNA
<213> Artificial

<220>
<223> DNA sequence of mutein shown in SEQ ID NO: 27

<400> 60	
gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacgggtg	60
gacaggttta agattgggtc gtggcctagg agcgtaacac cgatgaccct gactacactg	120
gagggcggca acctggaggc gaaggtcacc atgaattggc ggggccggag ccaggagggtg	180
aaagcggttt tagaaaagac cgacgaaccg ggcaaataca ccgccaggg gggctctcat	240
gtggcgtaga tcattcgtag ccatgtttaa gatcactata tcttttattc cgaaggtaag	300
ctgcaggggg agccggtgcc aggggtgtgg ctctgtggga gagaccccaa gaacaacctg	360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc	420
ctcatcccca ggcagagcga aaccagctct ccaggg	456

eo1f-seq1

<210> 61
 <211> 456
 <212> DNA
 <213> Artificial

<220>
 <223> DNA sequence of mutein shown in SEQ ID NO: 28

<400> 61
 gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg 60
 gacaggttta agattggtgc gtggccgagg agcgtaacac cgatgaccct gactacactg 120
 gagggcggca acctggaggc gaaggtcacc atgaattggt ggggccggag ccaggaggtg 180
 aaagcggttt tagaaaagac cgacgaaccg ggcaaataca ccgccacggg gggctctcat 240
 gtggcgtaga tcattcgtag ccatgttaaa gatcactata tcttttattc cgaaggtaag 300
 ttgcaggggg agccggtgcc aggggtgtgg ctcgtgggca gagaccccaa gaacaacctg 360
 gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc 420
 ctcaccccca ggcagagcga aaccagctct ccaggg 456

<210> 62
 <211> 152
 <212> PRT
 <213> Artificial

<220>
 <223> Mutein of human tear lipocalin

<400> 62

Ala Ser Asp Glu Glu Ile Gln Asp Val Ser Gly Thr Trp Tyr Leu Lys
 1 5 10 15

Ala Met Thr Val Asp Arg Phe Lys Ile Ala Ser Trp Pro Arg Ser Val
 20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
 35 40 45

Val Thr Met Asn Trp Trp Gly Arg Ser Gln Glu Val Lys Ala Val Leu
 50 55 60

Glu Arg Thr Asp Glu Pro Gly Lys Tyr Thr Ala Gln Gly Asp Arg His
 65 70 75 80

Val Ala Tyr Ile Ile Arg Ser Pro Val Lys Asp His Tyr Ile Phe Tyr
 85 90 95

Ser Glu Gly Asn Leu Gln Gly Glu Thr Val Pro Gly Val Trp Leu Val
 100 105 110

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

eo1f-seq1

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
145 150

<210> 63
<211> 152
<212> PRT
<213> Artificial

<220>
<223> Mutein of human tear lipocalin

<400> 63

Ala Ser Asp Glu Glu Ile Gln Asp Val Ser Gly Thr Trp Tyr Leu Lys
1 5 10 15

Ala Met Thr Val Asp Phe Ser Arg Gly Asp Ala Ile Trp Thr Ser Val
20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

Val Thr Met Met Tyr Ala Gly Arg Ser Gln Glu Val Lys Ala Val Leu
50 55 60

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

Val Ala Tyr Ile Ile Arg Ser Pro Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Ser Glu Gly Pro Gly Gln Gly Ala Pro Val Pro Gly Val Trp Leu Val
100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
145 150

<210> 64
<211> 152
<212> PRT
<213> Artificial

<220>
<223> Mutein of human tear lipocalin

eo1f-seq1

<400> 64

Ala Ser Asp Glu Glu Ile Gln Asp Val Ser Gly Thr Trp Tyr Leu Lys
 1 5 10 15
 Ala Met Thr Val Asp Phe Ser Arg Gly Asp Ala Ile Trp Thr Ser Val
 20 25 30
 Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
 35 40 45
 Val Thr Met Met Tyr Ala Gly Arg Ser Gln Glu Val Lys Ala Val Leu
 50 55 60
 Glu Arg Thr Asp Glu Pro Gly Lys Tyr Thr Val Met Gly Gly Ser His
 65 70 75 80
 Val Ala Tyr Ile Ile Arg Ser Pro Val Lys Asp His Tyr Ile Phe Tyr
 85 90 95
 Ser Glu Gly Pro Arg Gln Gly Ala Pro Val Pro Gly Val Trp Leu Val
 100 105 110
 Gly Arg Asp Pro Lys Asn Asn Leu Glu Ala Leu Glu Asp Phe Glu Lys
 115 120 125
 Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
 130 135 140
 Gln Ser Glu Thr Ser Ser Pro Gly
 145 150

<210> 65

<211> 152

<212> PRT

<213> Artificial

<220>

<223> Mutein of human tear lipocalin

<400> 65

Ala Ser Asp Glu Glu Ile Gln Asp Val Ser Gly Thr Trp Tyr Leu Lys
 1 5 10 15
 Ala Met Thr Val Asp Phe Ser Arg Gly Asp Ala Ile Trp Thr Ser Val
 20 25 30
 Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
 35 40 45
 Val Thr Met Met Tyr Ala Gly Arg Ser Gln Glu Val Lys Ala Val Leu
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eo1f-seq1
60

50

55

Glu Arg Thr Asp Glu Pro Gly Lys Tyr Thr Thr Met Gly Gly Ser His
65 70 75 80

Val Ala Tyr Ile Ile Arg Ser Pro Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Ser Glu Gly Pro Ala Gln Gly Ala Pro Val Pro Gly Val Trp Leu Val
100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
145 150

<210> 66
<211> 152
<212> PRT
<213> Artificial

<220>
<223> Mutein of human tear lipocalin

<400> 66

Ala Ser Asp Glu Glu Ile Gln Asp Val Ser Gly Thr Trp Tyr Leu Lys
1 5 10 15

Ala Met Thr Val Asp Phe Ser Arg Gly Asp Ala Ile Trp Thr Ser Val
20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

Val Thr Met Met Tyr Ala Gly Arg Ser Gln Glu Val Lys Ala Val Leu
50 55 60

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

Val Ala Tyr Ile Ile Arg Ser Pro Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Ser Glu Gly Pro Asp Gln Gly Ala Pro Val Pro Gly Val Trp Leu Val
100 105 110

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

eo1f-seq1

115

120

125

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
145 150

<210> 67
<211> 152
<212> PRT
<213> Artificial

<220>
<223> Mutein of human tear lipocalin

<400> 67

Ala Ser Asp Glu Glu Ile Gln Asp Val Ser Gly Thr Trp Tyr Leu Lys
1 5 10 15

Ala Met Thr Val Asp Phe Ser Arg Gly Asp Ala Ile Trp Thr Ser Val
20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

Val Thr Met Met Tyr Ala Gly Arg Ser Gln Glu Val Lys Ala Val Leu
50 55 60

Glu Arg Thr Asp Glu Pro Gly Lys Tyr Thr Met Met Gly Gly Ser His
65 70 75 80

Val Ala Tyr Ile Ile Arg Ser Pro Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Ser Glu Gly Pro Val Gln Gly Ala Pro Val Pro Gly Val Trp Leu Val
100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
145 150

<210> 68

eo1f-seq1

<211> 152
<212> PRT
<213> Artificial

<220>
<223> Mutein of human tear lipocalin

<400> 68

Ala Ser Asp Glu Glu Ile Gln Asp Val Ser Gly Thr Trp Tyr Leu Lys
1 5 10 15

Ala Met Thr Val Asp Phe Ser Arg Gly Asp Ala Ile Trp Thr Ser Val
20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

Val Thr Met Met Tyr Ala Gly Arg Ser Gln Glu Val Lys Ala Val Leu
50 55 60

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

Val Ala Tyr Ile Ile Arg Ser Pro Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Ser Glu Gly Pro Pro Gln Gly Ala Pro Val Pro Gly Val Trp Leu Val
100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
145 150

<210> 69
<211> 152
<212> PRT
<213> Artificial

<220>
<223> Mutein of human tear lipocalin

<400> 69

Ala Ser Asp Glu Glu Ile Gln Asp Val Ser Gly Thr Trp Tyr Leu Lys
1 5 10 15

Ala Met Thr Val Asp Phe Ser Arg Gly Asp Ala Ile Trp Thr Ser Val
20 25 30

eo1f-seq1

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

Val Thr Met Met Tyr Ala Gly Arg Ser Gln Glu Val Lys Ala Val Leu
50 55 60

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

Val Ala Tyr Ile Ile Arg Ser Pro Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Ser Glu Gly Pro Lys Gln Gly Ala Pro Val Pro Gly Val Trp Leu Val
100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
145 150

<210> 70
<211> 152
<212> PRT
<213> Artificial

<220>
<223> Mutein of human tear lipocalin

<400> 70

Ala Ser Asp Glu Glu Ile Gln Asp Val Ser Gly Thr Trp Tyr Leu Lys
1 5 10 15

Ala Met Thr Val Asp Phe Ser Arg Gly Asp Ala Ile Trp Thr Ser Val
20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

Val Thr Met Met Tyr Ala Gly Arg Ser Gln Glu Val Lys Ala Val Leu
50 55 60

Glu Arg Thr Asp Glu Pro Gly Lys Tyr Thr Thr Met Gly Gly Ser His
65 70 75 80

Val Ala Tyr Ile Ile Arg Ser Pro Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

eolf-seq1

Ser Glu Gly Pro Arg Gln Gly Ala Pro Val Pro Gly Val Trp Leu Val
100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
145 150

<210> 71
<211> 152
<212> PRT
<213> Artificial

<220>
<223> Mutein of human tear lipocalin

<400> 71

Ala Ser Asp Glu Glu Ile Gln Asp Val Ser Gly Thr Trp Tyr Leu Lys
1 5 10 15

Ala Met Thr Val Asp Phe Ser Arg Gly Asp Ala Ile Trp Thr Ser Val
20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

Val Thr Met Met Tyr Ala Gly Arg Ser Gln Glu Val Lys Ala Val Leu
50 55 60

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

Val Ala Tyr Ile Ile Arg Ser Pro Val Lys Asp His Tyr Ile Phe Tyr
85 90 95

Ser Glu Gly Pro Leu Gln Gly Ala Pro Val Pro Gly Val Trp Leu Val
100 105 110

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

Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro Arg
130 135 140

Gln Ser Glu Thr Ser Ser Pro Gly
145 150

<210> 72

eo1f-seq1

<211> 456
<212> DNA
<213> Artificial

<220>

<223> DNA sequence of mutein shown in SEQ ID NO: 62

<400> 72
gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg 60
gaccgcttta aaatcgccag ctggccccgc agcgtaactc cgatgaccct gactacactg 120
gagggcggca acctggaggc gaaggtcacc atgaattggt ggggccgcag ccaggaagtc 180
aaagcggttt tagaaaggac cgacgaaccg ggcaaataca ccgcgcaggg tgaccgccat 240
gtggcgtaga tcattcgtag cccggttaaa gatcactata tcttttattc cgaaggtaat 300
cttcagggcg aaacggtccc aggggtgtgg ctctgtggga gagaccccaa gaacaacctg 360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc 420
ctcatcccca ggcagagcga aaccagctct ccaggg 456

<210> 73
<211> 456
<212> DNA
<213> Artificial

<220>

<223> DNA sequence of mutein shown in SEQ ID NO: 63

<400> 73
gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg 60
gacttcagcc gcggggacgc gatatggacg agcgtaacac cgatgaccct gactacactg 120
gagggcggca acctggaggc gaaggtcacc atgatgtatg ccggccgcag ccaggaagtc 180
aaagcggttt tagaaaggac cgacgaaccg ggcaaataca ccgttatggg tggcagccat 240
gtggcgtaga tcatccgtag ccctgtcaaa gatcactata tcttttattc cgaaggcccg 300
gggcagggcg cgccggtgcc aggggtgtgg ctctgtggga gagaccccaa gaacaacctg 360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc 420
ctcatcccca ggcagagcga aaccagctct ccaggg 456

<210> 74
<211> 456
<212> DNA
<213> Artificial

<220>

<223> DNA sequence of mutein shown in SEQ ID NO: 64

<400> 74
gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg 60
gacttcagcc gcggggacgc gatatggacg agcgtaacac cgatgaccct gactacactg 120
gagggcggca acctggaggc gaaggtcacc atgatgtatg ccggccgcag ccaggaagtc 180

eo1f-seq1

aaagcggttt tagaaaggac cgacgaaccg ggcaaataca ccgtgatggg tggcagccat	240
gtggcgtaca tcatccgtag ccctgtcaaa gatcactata tcttttattc cgaaggccccg	300
cgtcagggcg cgccggtgcc aggggtgtgg ctctgtggga gagaccccaa gaacaacctg	360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc	420
ctcatcccca ggcagagcga aaccagctct ccaggg	456

<210> 75
 <211> 456
 <212> DNA
 <213> Artificial

<220>
 <223> DNA sequence of mutein shown in SEQ ID NO: 65

<400> 75	
gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacgggtg	60
gacttcagcc gcggggacgc gatatggacg agcgtaacac cgatgaccct gactacactg	120
gagggcggca acctggaggc gaaggtcacc atgatgtatg ccggccgcag ccaggaagtc	180
aaagcggttt tagaaaggac cgacgaaccg ggcaaataca ccgtgatggg tggcagccat	240
gtggcgtaca tcatccgtag ccctgtcaaa gatcactata tcttttattc cgaaggccccg	300
gctcagggcg cgccggtgcc aggggtgtgg ctctgtggga gagaccccaa gaacaacctg	360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc	420
ctcatcccca ggcagagcga aaccagctct ccaggg	456

<210> 76
 <211> 456
 <212> DNA
 <213> Artificial

<220>
 <223> DNA sequence of mutein shown in SEQ ID NO: 66

<400> 76	
gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacgggtg	60
gacttcagcc gcggggacgc gatatggacg agcgtaacac cgatgaccct gactacactg	120
gagggcggca acctggaggc gaaggtcacc atgatgtatg ccggccgcag ccaggaagtc	180
aaagcggttt tagaaaggac cgacgaaccg ggcaaataca ccatgatggg tggcagccat	240
gtggcgtaca tcatccgtag ccctgtcaaa gatcactata tcttttattc cgaaggccccg	300
gatcagggcg cgccggtgcc aggggtgtgg ctctgtggga gagaccccaa gaacaacctg	360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc	420
ctcatcccca ggcagagcga aaccagctct ccaggg	456

<210> 77
 <211> 456

eo1f-seq1

<212> DNA
<213> Artificial

<220>

<223> DNA sequence of mutein shown in SEQ ID NO: 67

<400> 77

gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg	60
gacttcagcc gcggggacgc gatatggacg agcgtaacac cgatgaccct gactacactg	120
gagggcggca acctggaggc gaaggtcacc atgatgtatg ccggccgcag ccaggaagtc	180
aaagcggttt tagaaaggac cgacgaaccg ggcaaataca ccatgatggg tggcagccat	240
gtggcgtaga tcatccgtag ccctgtcaaa gatcactata tcttttattc cgaaggccc	300
gttcagggcg cgccggtgcc aggggtgtgg ctctgtggga gagaccccaa gaacaacctg	360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc	420
ctcatcccca ggcagagcga aaccagctct ccagg	456

<210> 78

<211> 456

<212> DNA

<213> Artificial

<220>

<223> DNA sequence of mutein shown in SEQ ID NO: 68

<400> 78

gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg	60
gacttcagcc gcggggacgc gatatggacg agcgtaacac cgatgaccct gactacactg	120
gagggcggca acctggaggc gaaggtcacc atgatgtatg ccggccgcag ccaggaagtc	180
aaagcggttt tagaaaggac cgacgaaccg ggcaaataca ccatgatggg tggcagccat	240
gtggcgtaga tcatccgtag ccctgtcaaa gatcactata tcttttattc cgaaggccc	300
ccgcagggcg cgccggtgcc aggggtgtgg ctctgtggga gagaccccaa gaacaacctg	360
gaagccttgg aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc	420
ctcatcccca ggcagagcga aaccagctct ccagg	456

<210> 79

<211> 456

<212> DNA

<213> Artificial

<220>

<223> DNA sequence of mutein shown in SEQ ID NO: 69

<400> 79

gcctcagacg aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg	60
gacttcagcc gcggggacgc gatatggacg agcgtaacac cgatgaccct gactacactg	120
gagggcggca acctggaggc gaaggtcacc atgatgtatg ccggccgcag ccaggaagtc	180
aaagcggttt tagaaaggac cgacgaaccg ggcaaataca ccgttatggg tggcagccat	240

eo1f-seq1

gtggcgtag	tcacccgtag	ccctgtcaaa	gatcactata	tctttttattc	cgaaggccccg	300
aagcagggcg	cgccggtgcc	aggggtgtgg	ctcgtgggca	gagaccccaa	gaacaacctg	360
gaagccttgg	aggactttga	gaaagccgca	ggagcccgcg	gactcagcac	ggagagcatc	420
ctcatcccca	ggcagagcga	aaccagctct	ccaggg			456

<210> 80
 <211> 456
 <212> DNA
 <213> Artificial

<220>
 <223> DNA sequence of mutein shown in SEQ ID NO: 70

<400> 80	
gcctcagacg	aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg 60
gacttcagcc	gcggggacgc gatatggacg agcgtaacac cgatgaccct gactacactg 120
gagggcggca	acctggaggc gaaggtcacc atgatgtatg ccggccgcag ccaggaagtc 180
aaagcggttt	tagaaaggac cgacgaaccg ggcaaataca ccgtgatggg tggcagccat 240
gtggcgtag	tcacccgtag ccctgtcaaa gatcactata tctttttattc cgaaggccccg 300
aggcagggcg	cgccggtgcc aggggtgtgg ctcgtgggca gagaccccaa gaacaacctg 360
gaagccttgg	aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc 420
ctcatcccca	ggcagagcga aaccagctct ccaggg 456

<210> 81
 <211> 456
 <212> DNA
 <213> Artificial

<220>
 <223> DNA sequence of mutein shown in SEQ ID NO: 71

<400> 81	
gcctcagacg	aggagattca ggatgtgtca gggacgtggt atctgaaggc catgacggtg 60
gacttcagcc	gcggggacgc gatatggacg agcgtaacac cgatgaccct gactacactg 120
gagggcggca	acctggaggc gaaggtcacc atgatgtatg ccggccgcag ccaggaagtc 180
aaagcggttt	tagaaaggac cgacgaaccg ggcaaataca ccatgatggg tggcagccat 240
gtggcgtag	tcacccgtag ccctgtcaaa gatcactata tctttttattc cgaaggccccg 300
ctgcagggcg	cgccggtgcc aggggtgtgg ctcgtgggca gagaccccaa gaacaacctg 360
gaagccttgg	aggactttga gaaagccgca ggagcccgcg gactcagcac ggagagcatc 420
ctcatcccca	ggcagagcga aaccagctct ccaggg 456

<210> 82
 <211> 153
 <212> PRT
 <213> Artificial

eo1f-seq1

<220>

<223> Mutein of human tear lipocalin

<400> 82

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

Lys Ala Met Thr Val Asp Arg Phe Lys Ile Ala Ser Trp Pro Arg Ser
20 25 30

Val Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala
35 40 45

Lys Val Thr Met Asn Trp Trp Gly Arg Ser Gln Glu Val Lys Ala Val
50 55 60

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

His Val Ala Tyr Ile Ile Arg Ser His Val Lys Asp His Tyr Ile Phe
85 90 95

Tyr Ser Glu Gly Asn Leu Gln Gly Glu Thr Val Pro Gly Val Trp Leu
100 105 110

Val Gly Arg Asp Pro Lys Asn Asn Leu Glu Ala Leu Glu Asp Phe Glu
115 120 125

Lys Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro
130 135 140

Arg Gln Ser Glu Thr Ser Ser Pro Gly
145 150

<210> 83

<211> 203

<212> PRT

<213> Artificial

<220>

<223> Mutein of human tear lipocalin

<400> 83

Ala Ser Asp Glu Glu Ile Gln Asp Val Ser Gly Thr Trp Tyr Leu Lys
1 5 10 15

Ala Met Thr Val Asp Arg Phe Lys Ile Ala Ser Trp Pro Arg Ser Val
20 25 30

Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala Lys
35 40 45

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

<210> 84
 <211> 210
 <212> PRT
 <213> Artificial

<220>
 <223> Mutein of human tear lipocalin

<400> 84

Gly Ala Ser Asp Glu Glu Ile Gln Asp Val Ser Gly Thr Trp Tyr Leu
 1 5 10 15
 Lys Ala Met Thr Val Asp Arg Phe Lys Ile Ala Ser Trp Pro Arg Ser
 20 25 30
 Val Thr Pro Met Thr Leu Thr Thr Leu Glu Gly Gly Asn Leu Glu Ala
 35 40 45
 Lys Val Thr Met Asn Trp Trp Gly Arg Ser Gln Glu Val Lys Ala Val
 50 55 60
 Leu Glu Arg Thr Asp Glu Pro Gly Lys Tyr Thr Ala Gln Gly Asp Arg
 65 70 75 80

eo1f-seq1

His Val Ala Tyr Ile Ile Arg Ser His Val Lys Asp His Tyr Ile Phe
85 90 95

Tyr Ser Glu Gly Asn Leu Gln Gly Glu Thr Val Pro Gly Val Trp Leu
100 105 110

Val Gly Arg Asp Pro Lys Asn Asn Leu Glu Ala Leu Glu Asp Phe Glu
115 120 125

Lys Ala Ala Gly Ala Arg Gly Leu Ser Thr Glu Ser Ile Leu Ile Pro
130 135 140

Arg Gln Ser Glu Thr Ser Ser Pro Gly Lys Leu Gly Gly Gly Gly Ser
145 150 155 160

Leu Ala Glu Ala Lys Glu Ala Ala Asn Ala Glu Leu Asp Ser Tyr Gly
165 170 175

Val Ser Asp Phe Tyr Lys Arg Leu Ile Asp Lys Ala Lys Thr Val Glu
180 185 190

Gly Val Glu Ala Leu Lys Asp Ala Ile Leu Ala Ala Leu Pro Gly Lys
195 200 205

Leu Asn
210

<210> 85
<211> 48
<212> PRT
<213> artificial

<220>
<223> Albumin binding domain (ABD)
<400> 85

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

Gly Val Ser Asp Phe Tyr Lys Arg Leu Ile Asp Lys Ala Lys Thr Val
20 25 30

Glu Gly Val Glu Ala Leu Lys Asp Ala Ile Leu Ala Ala Leu Pro Gly
35 40 45

<210> 86
<211> 456
<212> DNA
<213> artificial

<220>
<223> DNA sequence of mutein shown in SEQ ID NO: 62

eo1f-seq1

<400> 86
gcaagtgatg aagaaattca ggatgttagc ggcacctggt atctgaaagc aatgaccggt 60
gatcgcttta aaatcgcaag ctggcctcgt agcgttaccc cgatgaccct gaccaccctg 120
gaagggtgta atctggaagc aaaagttacc atgaattggt ggggtcgtag ccaagaagtt 180
aaagcagttc tggaacgtac cgatgaaccg ggtaaataca ccgcacaggg tgatcgtcac 240
gttgcataata tcattcgtag ccctgtgaaa gaccactaca tcttttatag cgaaggtaat 300
ctgcaggggtg aaaccgttcc ggggtgtttg ctgggtgggtc gtgatccgaa aaataacctg 360
gaagcactgg aagattttga aaaagcagcc ggtgcacgtg gtctgagcac cgaaagcatt 420
ctgattccgc gtcagagcga aaccagcagt ccggga 456

<210> 87
<211> 459
<212> DNA
<213> artificial

<220>
<223> DNA sequence of mutein shown in SEQ ID NO: 82

<400> 87
ggtgcaagtg atgaagaaat tcaggatgtt agcggcacct ggtatctgaa agcaatgacc 60
gttgatcgct ttaaaatcgc aagctggcct cgtagcgta ccccgatgac cctgaccacc 120
ctggaagggtg gtaatctgga agcaaaagtt accatgaatt ggtggggtcg tagccaagaa 180
gttaaagcag ttctggaacg taccgatgaa ccgggtaaat acaccgcaca ggggtgatcg 240
catgttgcac atatcattcg tagccatgtg aaagaccact acatctttta tagcgaaggt 300
aatctgcagg gtgaaaccgt tccgggtgtt tggctggttg gtcgtgatcc gaaaaataac 360
ctggaagcac tggaagattt tgaaaaagca gccggtgcac gtggtctgag caccgaaagc 420
attctgattc cgcgtcagag cgaaaccagc agtccggga 459

<210> 88
<211> 609
<212> DNA
<213> artificial

<220>
<223> DNA sequence of mutein shown in SEQ ID NO: 83

<400> 88
gcgagcgatg aagagatcca agacgtcagc ggcacctggt acctgaaagc aatgactgtc 60
gaccgtttta agatcgcgag ctggccgcgt agcgttacgc caatgaccct gacgaccctg 120
gagggcggca acttgaagc gaagggtgacg atgaattggt ggggtcgcag ccaagaagtg 180
aaagccgttc tggagcgac ggacgagccg ggtaagtata ccgcgcaggg tgatcgtcac 240
gtggcatata tcattcgcag cccgggtgaag gaccactaca ttttctactc tgagggtaat 300
ttgcaggggtg aaaccgttcc tggcgttttg ctggctgggtc gtgatccgaa aaacaatctg 360
gaagcactgg aggattttga gaaagctgcc ggtgcgcgtg gcctgtcgac cgagtctatt 420
ctgattccgc gccagtccga aacctccagc ccgggtggcg gtggtagcct ggcagaggcg 480

eo1f-seq1

aaagaagcgg ctaacgctga gctggacagc tacggcgtga gcgatttcta taaacgtctg	540
atcgataagg ccaagaccgt cgagggtggt gaagcgtga aagacgccat cctggcggca	600
ttgccgggt	609

<210> 89
 <211> 630
 <212> DNA
 <213> artificial

<220>
 <223> DNA sequence of mutein shown in SEQ ID NO: 84

<400> 89 ggtgcaagt atgaagaaat tcaggatgtt agcggcacct ggtatctgaa agcaatgacc	60
gttgatcgct ttaaaatcgc aagctggcct cgtagcgta cccgatgac cctgaccacc	120
ctggaaggtg gtaatctgga agcaaaagtt accatgaatt ggtggggtcg tagccaagaa	180
gttaaagcag ttctggaacg taccgatgaa ccgggtaaat acaccgcaca gggatgatcgt	240
catgttgc ataatcattcg tagccatgtg aaagaccact acatctttta tagcgaaggt	300
aatctgcagg gtgaaaccgt tccgggtggt tggctggtg gtcgtgatcc gaaaaataac	360
ctggaagcac tggaagattt tgaaaaagca gccggtgcac gtggtctgag caccgaaagc	420
attctgattc cgcgtcagag cgaaaccagc agtccgggta agcttgagg tggcggaagc	480
ctggcagaag caaaagaagc agcaaacgca gaactggata gctatggtgt tagcgatttc	540
tataaacgcc tgatcgataa agccaaaacc gttgaaggtg ttgaagcact gaaagatgca	600
attctggcag cactgccggg taagcttaat	630