

PCTAU2016050005-seq1-000001-EN-20160111  
SEQUENCE LISTING

<110> AdAlta Pty Ltd

<120> CXCR4 binding molecules

<130> 518714

<160> 105

<170> PatentIn version 3.5

<210> 1

<211> 97

<212> PRT

<213> Homo sapiens

<400> 1

Leu Gln Val Asp Ile Val Pro Ser Gln Gly Glu Ile Ser Val Gly Glu  
1 5 10 15  
Ser Lys Phe Phe Leu Cys Gln Val Ala Gly Asp Ala Lys Asp Lys Asp  
20 25 30  
Ile Ser Trp Phe Ser Pro Asn Gly Glu Lys Leu Thr Pro Asn Gln Gln  
35 40 45  
Arg Ile Ser Val Val Trp Asn Asp Asp Ser Ser Ser Thr Leu Thr Ile  
50 55 60  
Tyr Asn Ala Asn Ile Asp Asp Ala Gly Ile Tyr Lys Cys Val Val Thr  
65 70 75 80  
Gly Glu Asp Gly Ser Glu Ser Glu Ala Thr Val Asn Val Lys Ile Phe  
85 90 95  
Gln

<210> 2

<211> 90

<212> PRT

<213> Artificial Sequence

<220>

<223> i-body

<220>

<221> A'aa

<222> (23)..(23)

<223> Q or K

<220>

<221> B'aa

<222> (24)..(24)

<223> V or A

<220>

<221> X

<222> (27)..(32)

<223> any amino acid

<220>

<221> Y'aa

<222> (80)..(80)

<223> any amino acid and any number of amino acids between 10 and 20 inclusive

&lt;400&gt; 2

Leu Gln Val Asp Ile Val Pro Ser Gln Gly Glu Ile Ser Val Gly Glu  
 1 5 10 15  
 Ser Lys Phe Phe Leu Cys A'aa B'aa Ala Gly Xaa Xaa Xaa Xaa Xaa Xaa  
 20 25 30  
 Ile Ser Trp Phe Ser Pro Asn Gly Glu Lys Leu Thr Pro Asn Gln Gln  
 35 40 45  
 Arg Ile Ser Val Val Trp Asn Asp Asp Ser Ser Ser Thr Leu Thr Ile  
 50 55 60  
 Tyr Asn Ala Asn Ile Asp Asp Ala Gly Ile Tyr Lys Cys Val Val Y'aa  
 65 70 75 80  
 Glu Ala Thr Val Asn Val Lys Ile Phe Gln  
 85 90

&lt;210&gt; 3

&lt;211&gt; 97

&lt;212&gt; PRT

&lt;213&gt; Bos taurus

&lt;400&gt; 3

Leu Gln Val Asp Ile Val Pro Ser Gln Gly Glu Ile Ser Val Gly Glu  
 1 5 10 15  
 Ser Lys Phe Phe Leu Cys Gln Val Ala Gly Asp Ala Lys Asp Lys Asp  
 20 25 30  
 Ile Ser Trp Phe Ser Pro Asn Gly Glu Lys Leu Thr Pro Asn Gln Gln  
 35 40 45  
 Arg Ile Ser Val Val Trp Asn Asp Asp Ser Ser Ser Thr Leu Thr Ile  
 50 55 60  
 Tyr Asn Ala Asn Ile Asp Asp Ala Gly Ile Tyr Lys Cys Val Val Thr  
 65 70 75 80  
 Ala Glu Asp Gly Thr Glu Ser Glu Ala Thr Val Asn Val Lys Ile Phe  
 85 90 95

Gln

&lt;210&gt; 4

&lt;211&gt; 97

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 4

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

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Tyr Asn Ala Asn Ile Asp Asp Ala Gly Ile Tyr Lys Cys Val Val Thr  
65 70 75 80  
Ala Glu Asp Gly Thr Gln Ser Glu Ala Thr Val Asn Val Lys Ile Phe  
85 90 95

Gln

<210> 5  
<211> 97  
<212> PRT  
<213> Rattus rattus

<400> 5

Leu Gln Val Asp Ile Val Pro Ser Gln Gly Glu Ile Ser Val Gly Glu  
1 5 10 15  
Ser Lys Phe Phe Leu Cys Gln Val Ala Gly Asp Ala Lys Asp Lys Asp  
20 25 30  
Ile Ser Trp Phe Ser Pro Asn Gly Glu Lys Leu Ser Pro Asn Gln Gln  
35 40 45  
Arg Ile Ser Val Val Trp Asn Asp Asp Asp Ser Ser Thr Leu Thr Ile  
50 55 60  
Tyr Asn Ala Asn Ile Asp Asp Ala Gly Ile Tyr Lys Cys Val Val Thr  
65 70 75 80  
Ala Glu Asp Gly Thr Gln Ser Glu Ala Thr Val Asn Val Lys Ile Phe  
85 90 95

Gln

<210> 6  
<211> 97  
<212> PRT  
<213> Gallus gallus

<400> 6

Leu Gln Val Asp Ile Val Pro Ser Gln Gly Glu Ile Ser Val Gly Glu  
1 5 10 15  
Ser Lys Phe Phe Leu Cys Gln Val Ala Gly Glu Ala Lys Tyr Lys Asp  
20 25 30  
Ile Ser Trp Phe Ser Pro Asn Gly Glu Lys Leu Thr Pro Asn Gln Gln  
35 40 45  
Arg Ile Ser Val Val Arg Asn Asp Asp Phe Ser Ser Thr Leu Thr Ile  
50 55 60  
Tyr Asn Ala Asn Ile Asp Asp Ala Gly Ile Tyr Lys Cys Val Val Ser  
65 70 75 80  
Ser Val Glu Glu Gly Asp Ser Glu Ala Thr Val Asn Val Lys Ile Phe  
85 90 95

Gln

<210> 7  
<211> 94  
<212> PRT

<213> *Xenopus laevis*

&lt;400&gt; 7

Leu Glu Val Asn Ile Val Pro Asp Gln Gly Glu Ile Ser Leu Gly Glu  
 1 5 10 15  
 Ser Lys Phe Phe Leu Cys Gln Val Ser Gly Glu Ala Thr Asp Ile Ser  
 20 25 30  
 Trp Tyr Ser Pro Thr Gly Glu Lys Leu Leu Asn Gln Gln Gln Ile Ser  
 35 40 45  
 Val Val Lys Asn Asp Glu Tyr Thr Ser Thr Leu Thr Ile Tyr Asn Val  
 50 55 60  
 Ser Ser Gln Asp Ala Gly Ile Tyr Lys Cys Val Ala Ser Ser Glu Thr  
 65 70 75 80  
 Glu Gly Glu Ser Glu Gly Thr Val Asn Leu Lys Ile Tyr Gln  
 85 90

&lt;210&gt; 8

&lt;211&gt; 94

&lt;212&gt; PRT

<213> *Xenopus laevis*

&lt;400&gt; 8

Leu Glu Val Asn Ile Val Pro Asp Gln Gly Glu Ile Ser Leu Gly Glu  
 1 5 10 15  
 Ser Lys Phe Phe Leu Cys Gln Val Ser Gly Glu Ala Thr Asp Ile Ser  
 20 25 30  
 Trp Tyr Ser Pro Thr Gly Glu Lys Leu Val Thr Gln Gln Gln Ile Ser  
 35 40 45  
 Val Val Arg Ser Asp Asp Tyr Thr Ser Thr Leu Thr Ile Tyr Asn Ala  
 50 55 60  
 Ser Ser Gln Asp Ala Gly Ile Tyr Lys Cys Val Ala Ser Asn Glu Ala  
 65 70 75 80  
 Glu Gly Glu Ser Glu Gly Thr Val Asn Leu Lys Ile Tyr Gln  
 85 90

&lt;210&gt; 9

&lt;211&gt; 93

&lt;212&gt; PRT

<213> *Homo sapiens*

&lt;400&gt; 9

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

Gln Thr Gln Glu Ala Thr Val Val Leu Glu Ile Tyr Gln  
85 90

<210> 10  
<211> 93  
<212> PRT  
<213> Mus musculus

<400> 10

Leu Gln Val Thr Ile Ser Leu Ser Lys Val Glu Leu Ser Val Gly Glu  
1 5 10 15  
Ser Lys Phe Phe Thr Cys Thr Ala Ile Gly Glu Pro Glu Ser Ile Asp  
20 25 30  
Trp Tyr Asn Pro Gln Gly Glu Lys Ile Ile Ser Thr Gln Arg Val Met  
35 40 45  
Leu Gln Lys Glu Gly Val Arg Ser Arg Leu Thr Ile Tyr Asn Ala Asn  
50 55 60  
Ile Glu Asp Ala Gly Ile Tyr Arg Cys Gln Ala Thr Asp Ala Lys Gly  
65 70 75 80  
Gln Thr Gln Glu Ala Thr Val Val Leu Glu Ile Tyr Gln  
85 90

<210> 11  
<211> 103  
<212> PRT  
<213> Artificial sequence

<220>  
<223> ADCX-99 protein sequence

<400> 11

Leu Gln Val Asp Ile Val Pro Ser Gln Gly Glu Ile Ser Val Gly Glu  
1 5 10 15  
Ser Lys Phe Phe Leu Cys Gln Val Ala Gly Ser Gly Ser Asp Ile Arg  
20 25 30  
Ile Ser Trp Phe Ser Pro Asn Gly Glu Lys Leu Thr Pro Asn Gln Gln  
35 40 45  
Arg Ile Ser Val Val Trp Asn Asp Asp Ser Ser Ser Thr Leu Thr Ile  
50 55 60  
Tyr Asn Ala Asn Ile Asp Asp Ala Gly Ile Tyr Lys Cys Val Val Tyr  
65 70 75 80  
Arg Thr Gly Gly Tyr Arg His Arg Ala Leu Val Leu Gly Glu Ala Thr  
85 90 95  
Val Asn Val Lys Ile Phe Gln  
100

<210> 12  
<211> 6  
<212> PRT  
<213> Artificial sequence

<220>  
<223> ADCX\_99 CDR1 protein sequence

&lt;400&gt; 12

Ser Gly Ser Asp Ile Arg  
1 5

&lt;210&gt; 13

&lt;211&gt; 14

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; ADCX-99 CDR3 protein sequence

&lt;400&gt; 13

Tyr Arg Thr Gly Gly Tyr Arg His Arg Ala Leu Val Leu Gly  
1 5 10

&lt;210&gt; 14

&lt;211&gt; 100

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; protein sequence encoding ADCX-272

&lt;400&gt; 14

Leu Gln Val Asp Ile Val Pro Ser Gln Gly Glu Ile Ser Val Gly Glu  
1 5 10 15Ser Lys Phe Phe Leu Cys Gln Val Ala Gly His Leu Glu Val Arg Ser  
20 25 30Ile Ser Trp Phe Ser Pro Asn Gly Glu Lys Leu Thr Pro Asn Gln Gln  
35 40 45Arg Ile Ser Val Val Trp Asn Asp Asp Ser Ser Ser Thr Leu Thr Ile  
50 55 60Tyr Asn Ala Asn Ile Asp Asp Ala Gly Ile Tyr Lys Cys Val Val Glu  
65 70 75 80Gln Arg Gly Arg Ser Gln Ser Tyr Phe Ser Glu Ala Thr Val Asn Val  
85 90 95Lys Ile Phe Gln  
100

&lt;210&gt; 15

&lt;211&gt; 6

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; protein sequence encoding ADCX-272 CDR1

&lt;400&gt; 15

His Leu Glu Val Arg Ser  
1 5

&lt;210&gt; 16

&lt;211&gt; 11

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> protein sequence encoding ADCX-272 CDR3

<400> 16

Glu Gln Arg Gly Arg Ser Gln Ser Tyr Phe Ser  
1 5 10

<210> 17

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> protein sequence encoding ADCX-6

<400> 17

Leu Gln Val Asp Ile Val Pro Ser Gln Gly Glu Ile Ser Val Gly Glu  
1 5 10 15

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

Ile Ser Trp Phe Ser Pro Asn Gly Glu Lys Leu Thr Pro Asn Gln Gln  
35 40 45

Arg Ile Ser Val Val Trp Asn Asp Asp Ser Ser Ser Thr Leu Thr Ile  
50 55 60

Tyr Asn Ala Asn Ile Asp Asp Ala Gly Ile Tyr Lys Cys Val Val Glu  
65 70 75 80

Asp His Pro Gln Tyr Ser Lys Met Glu Glu Ala Thr Val Asn Val Lys  
85 90 95

Ile Phe Gln

<210> 18

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> protein sequence encoding ADCX-6 CDR1

<400> 18

Leu Thr Ser Leu Glu Gly  
1 5

<210> 19

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> protein sequence encoding ADCX-6 CDR3

<400> 19

Glu Asp His Pro Gln Tyr Ser Lys Met Glu  
1 5 10

<210> 20

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> protein sequence encoding ADCX-54

<400> 20

Leu Gln Val Asp Ile Val Pro Ser Gln Gly Glu Ile Ser Val Gly Glu  
 1 5 10 15  
 Ser Lys Phe Phe Leu Cys Gln Val Ala Gly Arg Thr Ile Ile Val Glu  
 20 25 30  
 Ile Ser Trp Phe Ser Pro Asn Gly Glu Lys Leu Thr Pro Asn Gln Gln  
 35 40 45  
 Arg Ile Ser Val Val Trp Asn Asp Asp Ser Ser Ser Thr Leu Thr Ile  
 50 55 60  
 Tyr Asn Ala Asn Ile Asp Asp Ala Gly Ile Tyr Lys Cys Val Val Val  
 65 70 75 80  
 Leu Ser Ile Arg Gly Lys Trp Glu Leu Glu Ala Thr Val Asn Val Lys  
 85 90 95  
 Ile Phe Gln

<210> 21

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> protein sequence encoding ADCX-54 CDR1

<400> 21

Arg Thr Ile Ile Val Glu  
 1 5

<210> 22

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> protein sequence encoding ADCX-54 CDR3

<400> 22

Val Leu Ser Ile Arg Gly Lys Trp Glu Leu  
 1 5 10

<210> 23

<211> 103

<212> PRT

<213> Artificial Sequence

<220>

<223> protein sequence encoding ADCX-LS

<400> 23

Leu Gln Val Asp Ile Val Pro Ser Gln Gly Glu Ile Ser Val Gly Glu  
 1 5 10 15  
 Ser Lys Phe Phe Leu Cys Gln Val Ala Gly Ile Ala Tyr Phe Ser Thr  
 20 25 30

Ile Ser Trp Phe Ser Pro Asn Gly Glu Lys Leu Thr Pro Asn Gln Gln  
35 40 45  
Arg Ile Ser Val Val Trp Asn Asp Asp Ser Ser Ser Thr Leu Thr Ile  
50 55 60  
Tyr Asn Ala Asn Ile Asp Asp Ala Gly Ile Tyr Lys Cys Val Val Gln  
65 70 75 80  
Val Ser Asp His Pro Glu Ala Gly Ile Leu Trp Arg Gly Glu Ala Thr  
85 90 95  
Val Asn Val Lys Ile Phe Gln  
100

<210> 24  
<211> 6  
<212> PRT  
<213> Artificial sequence

<220>  
<223> protein sequence encoding ADCX-LS CDR1

<400> 24

Ile Ala Glu Phe Ser Thr  
1 5

<210> 25  
<211> 14  
<212> PRT  
<213> Artificial sequence

<220>  
<223> protein sequence encoding ADCX-LS CDR3

<400> 25

Gln Val Ser Asp His Pro Glu Ala Gly Ile Leu Trp Arg Gly  
1 5 10

<210> 26  
<211> 99  
<212> PRT  
<213> Artificial sequence

<220>  
<223> protein sequence encoding ADCX-668

<400> 26

Leu Gln Val Asp Ile Val Pro Ser Gln Gly Glu Ile Ser Val Gly Glu  
1 5 10 15

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

Ile Ser Trp Phe Thr Pro Asn Gly Glu Lys Leu Thr Pro Asn Gln Gln  
35 40 45

Arg Ile Ser Val Val Trp Asn Asp Asp Ser Ser Ser Thr Leu Thr Ile  
50 55 60

Tyr Asn Ala Asn Ile Asp Asp Ala Gly Ile Tyr Lys Cys Val Val Trp  
65 70 75 80

Thr Arg Pro Val Thr Ser Ser Met His Glu Ala Thr Val Asn Val Lys

Ile Phe Gln

<210> 27  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> protein sequence encoding ADCX-668 CDR1

<400> 27

Thr Ile Trp Tyr Glu Gln  
1 5

<210> 28  
<211> 10  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> protein sequence encoding ADCX-668 CDR3

<400> 28

Trp Thr Arg Pro Val Thr Ser Ser Met His  
1 5 10

<210> 29  
<211> 100  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> protein sequence encoding ADCX306

<400> 29

Leu Gln Val Asp Ile Val Pro Ser Gln Gly Glu Ile Ser Val Gly Glu  
1 5 10 15

Ser Lys Phe Phe Leu Cys Gln Val Ala Gly Phe Gln Glu Trp Val Asn  
20 25 30

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

Ser Val Val Trp Asn Asp Asp Ser Ser Ser Thr Leu Thr Ile Tyr Asn  
50 55 60

Ala Asn Ile Asp Asp Ala Gly Ile Tyr Lys Cys Val Val Thr Met Pro  
65 70 75 80

His Thr Leu Asn Asn Leu Asp Val Arg Thr Glu Ala Thr Val Asn Val  
85 90 95

Lys Ile Phe Gln  
100

<210> 30  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>

<223> protein sequence encoding ADCX306 CDR1

<400> 30

Phe Gln Glu Trp Val Asn  
1 5

<210> 31

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> protein sequence encoding ADCX306 CDR3

<400> 31

Thr Met Pro His Thr Leu Asn Asn Leu Asp Val Arg Thr  
1 5 10

<210> 32

<211> 309

<212> DNA

<213> Artificial Sequence

<220>

<223> nucleotide sequence encoding ADCX-99

<400> 32

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| ctgcaagtag atattgtgcc gagccagggc gaaattagcg tgggcgaaag caaatttttc  | 60  |
| ttatgccagg tggcgggctc tgggagtgat attcggatca gctggtttag cccgaacggt  | 120 |
| gaaaaactga ccccgaaatca gcaacgtatc agcgttgtgt ggaacgatga tagctctagt | 180 |
| accctgacga tttacaatgc gaacattgat gacgcgggca tttataaatg cgtgggtatat | 240 |
| aggacggggg ggtatcgatc tcgtgctctt gtgctggggg aagccaccgt taatgtgaaa  | 300 |
| atctttcag                                                          | 309 |

<210> 33

<211> 300

<212> DNA

<213> Artificial Sequence

<220>

<223> nucleotide sequence encoding ADCX-272

<400> 33

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| ctgcaagtag atattgtgcc gagccagggc gaaattagcg tgggcgaaag caaatttttc  | 60  |
| ttatgccagg tggcggggcca tttgtaggtg aggtcgatca gctggtttag cccgaacggt | 120 |
| gaaaaactga ccccgaaatca gcaacgtatc agcgttgtgt ggaacgatga tagctctagt | 180 |
| accctgacga tttacaatgc gaacattgat gacgcgggca tttataaatg cgtggtagag  | 240 |
| cagcgggggc ggtcgcagtc ttatttttcg gaagccaccg ttaatgtgaa aatctttcag  | 300 |

<210> 34

<211> 297

<212> DNA

<213> Artificial Sequence

<220>

<223> nucleotide sequence encoding ADCX-6

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<400> 34  
ctgcaagtgg acattgtccc gagccagggg gagatttcgg tgggcgagtc caagttcttt 60  
ctgtgtcaag ttgccggtct gaccagcctg gaaggtatta gctggttcag cccgaacggc 120  
gaaaaactga cgccaaatca gcagcgtatt agcgtcgttt ggaatgacga ctctagcagc 180  
accttgacga tctacaacgc gaacatcgat gatgcgggta tctataagtg cgttgctcag 240  
gatcaccgcg aatacagcaa aatggaagag gcaaccgtta atgtgaaaat ctttcag 297

<210> 35  
<211> 297  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> nucleotide sequence encoding ADCX-54

<400> 35  
ctgcaagtag atattgtgcc gagccagggc gaaattagcg tgggcgaaag caaatTTTTc 60  
ttatgccagg tggcgggccg gacgattatt gtgtagatca gctggtttag cccgaacggg 120  
gaaaaactga cccgaatca gcaacgtatc agcgttgtgt ggaacgatga tagctctagt 180  
accctgacga tttacaatgc gaacattgat gacgcgggca tttataaatg cgtggtagtg 240  
ctgtctattc ggggtaagtg gtagctggaa gccaccgtta atgtgaaaat ctttcag 297

<210> 36  
<211> 309  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> nucleotide sequence encoding ADCX-LS

<400> 36  
ctgcaagtag atattgtgcc gagccagggc gaaattagcg tgggcgaaag caaatTTTTc 60  
ttatgccagg tggcgggcat tgcttatttt agtactatca gctggtttag cccgaacggg 120  
gaaaaactga cccgaatca gcaacgtatc agcgttgtgt ggaacgatga tagctctagt 180  
accctgacga tttacaatgc gaacattgat gacgcgggca tttataaatg cgtggtagag 240  
gtttcggatc atccgtaggc ggggtattttg tggcgggggtg aagccaccgt taatgtgaaa 300  
atctttcag 309

<210> 37  
<211> 297  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> nucleotide sequence encoding ADCX-668

<400> 37  
ctgcaagttg acattgtgcc gagccagggc gaaattagcg tgggcgaaag caaatTTTTc 60  
ttatgccagg tggcgggcac tatttggtat tagcagatca gctggtttac cccgaacggg 120  
gaaaaactga cccgaatca gcaacgtatc agcgttgtgt ggaacgatga tagctctagt 180  
accctgacga tttacaatgc gaacattgat gacgcgggca tttataaatg cgtggtagtg 240

acgcgtcctg ttactttcttc gatgcatgaa gccaccgtta atgtgaaaat ctttcag 297

<210> 38  
 <211> 300  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> nucleotide sequence encoding ADCX306

<400> 38  
 ctgcaagtgg acattgtgcc gagccaaggc gagatttccg tcggcgagag caaattcttt 60  
 ctgtgtcagg ttgcgggttt tcaagaatgg gtcaattggt tctctccgaa tgggtgaaaag 120  
 ctgacgccga accagcagcg cattagcgtt gtatggaatg atgacagcag cagcaccctg 180  
 acgatctaca acgcaaacad cgacgatgcc ggtatctata agtgcgttgt caccatgccca 240  
 cacaccttga acaatctgga tgttcgtacc gaggcgactg tgaacgtgaa aatcttccag 300

<210> 39  
 <211> 105  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> consensus amino acid sequence

<220>  
 <221> Zaa  
 <222> (1)..(1)  
 <223> any amino acid(s) selected from M, EAEA, MA or MP or absent

<220>  
 <221> A'aa  
 <222> (25)..(25)  
 <223> Q or K

<220>  
 <221> B'aa  
 <222> (26)..(26)  
 <223> V or A

<220>  
 <221> X1aa  
 <222> (30)..(30)  
 <223> G, K, L or Y

<220>  
 <221> X2aa  
 <222> (32)..(32)  
 <223> D, H, G or N

<220>  
 <221> X3aa  
 <222> (33)..(33)  
 <223> I, V, M, F, Q or Y

<220>  
 <221> Y'1aa  
 <222> (82)..(82)  
 <223> Y or W

<220>  
 <221> Y'2aa

<222> (84)..(84)  
 <223> T, V or I

<220>  
 <221> Y'3aa  
 <222> (86)..(86)  
 <223> G or A

<220>  
 <221> Y'4aa  
 <222> (91)..(91)  
 <223> A or Y

<220>  
 <221> Y'5aa  
 <222> (93)..(93)  
 <223> V, R or K

<400> 39

Zaa Met Leu Gln Val Asp Ile Val Pro Ser Gln Gly Glu Ile Ser Val  
 1 5 10 15  
 Gly Glu Ser Lys Phe Phe Leu Cys A'aa B'aa Ala Gly Ser X1aa Ser X2aa  
 20 25 30  
 X3aa Arg Ile Ser Trp Phe Ser Pro Asn Gly Glu Lys Leu Thr Pro Asn  
 35 40 45  
 Gln Gln Arg Ile Ser Val Val Trp Asn Asp Asp Ser Ser Ser Thr Leu  
 50 55 60  
 Thr Ile Tyr Asn Ala Asn Ile Asp Asp Ala Gly Ile Tyr Lys Cys Val  
 65 70 75 80  
 Val Y'1aa Arg Y'2aa Gly Y'3aa Tyr Arg His Arg Y'4aa Leu Y'5aa Leu Gly Glu  
 85 90 95  
 Ala Thr Val Asn Val Lys Ile Phe Gln  
 100 105

<210> 40  
 <211> 103  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> protein sequence encoding AM3-114

<400> 40

Leu Gln Val Asp Ile Val Pro Tyr Gln Gly Glu Ile Ser Val Gly Glu  
 1 5 10 15  
 Ser Lys Phe Phe Leu Cys Gln Val Ala Gly Ser Leu Ser Gly Ile Arg  
 20 25 30  
 Ile Ser Trp Phe Ser Pro Asn Gly Glu Lys Leu Thr Pro Asn Gln Gln  
 35 40 45  
 Arg Ile Ser Val Val Trp Asn Asp Asp Ser Ser Ser Thr Leu Thr Ile  
 50 55 60  
 Tyr Asn Ala Asn Ile Asp Asp Ala Gly Ile Tyr Lys Cys Val Val Trp  
 65 70 75 80  
 Arg Thr Gly Gly Tyr Arg His Arg Tyr Leu Val Leu Gly Glu Ala Thr  
 85 90 95

Val Asn Val Lys Ile Phe Gln  
100

<210> 41  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> protein sequence encoding AM3-114 CDR1

<400> 41

Ser Leu Ser Gly Ile Arg  
1 5

<210> 42  
<211> 14  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> protein sequence encoding AM3-114 CDR3

<400> 42

Trp Arg Thr Gly Gly Tyr Arg His Arg Tyr Leu Val Leu Gly  
1 5 10

<210> 43  
<211> 314  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> nucleotide sequence encoding AM3-114

<400> 43  
atggcgctgc aggtggatat tgtgccgagc cagggcgaaa ttagcgtggg cgaaagcaaa 60  
ttttttctgt gccaggtggc gggcagcctg agcggcattc gtattagctg gtttagcccg 120  
aacggcgaaa aactgacccc gaaccagcag cgtattagcg tgggtgtggaa cgatgatagc 180  
agcagcaccc tgaccattta taacgcgaac attgatgatg cgggcattta taaatgcgtg 240  
gtgtggcgta ccggcggcta tcgtcatcgt tatctggtgc tgggcgaagc gaccgtgaac 300  
gtgaaaattt ttca 314

<210> 44  
<211> 103  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> protein sequence encoding AM3-920

<400> 44

Leu Gln Val Asp Ile Val Pro Ser Gln Gly Glu Ile Ser Val Gly Glu  
1 5 10 15

Ser Lys Phe Phe Leu Cys Gln Val Ala Gly Ser Gly Ser Gly Ile Arg  
20 25 30

Ile Ser Trp Phe Ser Pro Asn Gly Glu Lys Leu Thr Pro Asn Gln Gln  
Page 15

35

40

45

Arg Ile Ser Val Val Trp Asn Asp Asp Ser Ser Ser Thr Leu Thr Ile  
 50 55 60

Tyr Asn Ala Asn Ile Asp Asp Ala Gly Ile Tyr Lys Cys Val Val Trp  
 65 70 75 80

Arg Thr Gly Gly Tyr Arg His Arg Tyr Leu Val Leu Gly Glu Ala Thr  
 85 90 95

Val Asn Val Lys Ile Phe Gln  
 100

&lt;210&gt; 45

&lt;211&gt; 6

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; protein sequence encoding AM3-920 CDR1

&lt;400&gt; 45

Ser Gly Ser Gly Ile Arg  
 1 5

&lt;210&gt; 46

&lt;211&gt; 14

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; protein sequence encoding AM3-920 CDR3

&lt;400&gt; 46

Trp Arg Thr Gly Gly Tyr Arg His Arg Tyr Leu Val Leu Gly  
 1 5 10

&lt;210&gt; 47

&lt;211&gt; 313

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; nucleotide sequence encoding AM3-920

&lt;400&gt; 47

atggcgctgc aggtggatat tgtgccgagc cagggcgaaa ttagcgtggg cgaaagcaaa 60

ttttttctgt gccaggtggc gggcagcggc agcggcattc gtattagctg gtttagcccg 120

aacggcgaaa aactgacccc gaaccagcag cgtattagcg tgggtgtggaa cgatgataca 180

gcagcaccct gaccatttat aacgcgaaca ttgatgatgc gggcatttat aaatgcgtgg 240

tgtggcgtag cggcggctat cgtcatcggt atctggtgct gggcgaagcg accgtgaacg 300

tgaaaatttt tca 313

&lt;210&gt; 48

&lt;211&gt; 103

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; protein sequence encoding AM4-1121

&lt;400&gt; 48

Leu Gln Val Asp Ile Val Pro Ser Gln Gly Glu Ile Ser Val Gly Glu  
 1 5 10 15  
 Ser Lys Phe Phe Leu Cys Gln Val Ala Gly Ser Lys Ser Gly Ile Arg  
 20 25 30  
 Ile Ser Trp Phe Ser Pro Asn Gly Glu Lys Leu Thr Pro Asn Gln Gln  
 35 40 45  
 Arg Ile Ser Val Val Trp Asn Asp Asp Ser Ser Ser Thr Leu Thr Ile  
 50 55 60  
 Tyr Asn Ala Asn Ile Asp Asp Ala Gly Ile Tyr Lys Cys Val Val Tyr  
 65 70 75 80  
 Arg Thr Gly Gly Tyr Arg His Arg Tyr Leu Arg Leu Gly Glu Ala Thr  
 85 90 95  
 Val Asn Val Lys Ile Phe Gln  
 100

&lt;210&gt; 49

&lt;211&gt; 6

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; protein sequence encoding AM4-1121 CDR1

&lt;400&gt; 49

Ser Lys Ser Gly Ile Arg  
 1 5

&lt;210&gt; 50

&lt;211&gt; 14

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; protein sequence encoding AM4-1121 CDR3

&lt;400&gt; 50

Tyr Arg Thr Gly Gly Tyr Arg His Arg Tyr Leu Arg Leu Gly  
 1 5 10

&lt;210&gt; 51

&lt;211&gt; 313

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; nucleotide sequence encoding AM4-1121

&lt;400&gt; 51

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| atggcgctgc aggtggatat tgtgccgagc cagggcgaaa ttagcgtggg cgaaagcaaa | 60  |
| ttttttctgt gccaggtggc gggcagcaaa agcggcattc gtattagctg gtttagcccg | 120 |
| aacggcgaaa aactgacccc gaaccagcag cgtattagcg tggtgtggaa cgatgataca | 180 |
| gcagcaccct gaccatttat aacgcgaaca ttgatgatgc gggcatttat aaatgcgtgg | 240 |
| tgtatcgtac cggcggctat cgtcacgtt atctgcgtct gggcgaagcg accgtgaacg  | 300 |

tgaaaatttt tca

<210> 52  
 <211> 103  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> protein sequence encoding AM4-613  
 <400> 52

Leu Gln Val Asp Ile Val Pro Ser Gln Gly Glu Ile Ser Val Gly Glu  
 1 5 10 15  
 Ser Lys Phe Phe Leu Cys Gln Val Ala Gly Ser Lys Ser Asp Val Arg  
 20 25 30  
 Ile Ser Trp Phe Ser Pro Asn Gly Glu Lys Leu Thr Pro Asn Gln Gln  
 35 40 45  
 Arg Ile Ser Val Val Trp Asn Asp Asp Ser Ser Ser Thr Leu Thr Ile  
 50 55 60  
 Tyr Asn Ala Asn Ile Asp Asp Ala Gly Ile Tyr Lys Cys Val Val Trp  
 65 70 75 80  
 Arg Thr Gly Gly Tyr Arg His Arg Tyr Leu Val Leu Gly Glu Ala Thr  
 85 90 95  
 Val Asn Val Lys Ile Phe Gln  
 100

<210> 53  
 <211> 6  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> protein sequence encoding AM4-613 CDR1  
 <400> 53

Ser Lys Ser Asp Val Arg  
 1 5

<210> 54  
 <211> 14  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> protein sequence encoding AM4-613 CDR3  
 <400> 54

Trp Arg Thr Gly Gly Tyr Arg His Arg Tyr Leu Val Leu Gly  
 1 5 10

<210> 55  
 <211> 313  
 <212> DNA  
 <213> Artificial sequence

<220>  
 <223> nucleotide sequence encoding AM4-613

PCTAU2016050005-seq1-000001-EN-20160111

<400> 55  
 atggcgctgc aggtggatat tgtgccgagc cagggcgaaa ttagcgtggg cgaaagcaaa 60  
 ttttttctgt gccaggtggc gggcagcaaa agcgatgtgc gtattagctg gtttagcccg 120  
 aacggcgaaa aactgacccc gaaccagcag cgtattagcg tgggtgtggaa cgatgatata 180  
 gcagcaccct gaccatttat aacgcgaaca ttgatgatgc gggcatttat aaatgcgtgg 240  
 tgtggcgtag cggcggttat cgtcatcggt atctggtgct gggcgaagcg accgtgaacg 300  
 tgaaaatttt tca 313

<210> 56  
 <211> 103  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> protein sequence encoding AM3-523

<400> 56  
 Leu Gln Val Asp Ile Val Pro Ser Gln Gly Glu Ile Ser Val Gly Glu  
 1 5 10 15  
 Ser Lys Phe Phe Leu Cys Gln Val Ala Gly Ser Gly Ser His Met Arg  
 20 25 30  
 Ile Ser Trp Phe Ser Pro Asn Gly Glu Lys Leu Thr Pro Asn Gln Gln  
 35 40 45  
 Arg Ile Ser Val Val Trp Asn Asp Asp Ser Ser Ser Thr Leu Thr Ile  
 50 55 60  
 Tyr Asn Ala Asn Ile Asp Asp Ala Gly Ile Tyr Lys Cys Val Val Trp  
 65 70 75 80  
 Arg Val Gly Gly Tyr Arg His Arg Ala Leu Val Leu Gly Glu Ala Thr  
 85 90 95  
 Val Asn Val Lys Ile Phe Gln  
 100

<210> 57  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> protein sequence encoding AM3-523 CDR1

<400> 57  
 Ser Gly Ser His Met Arg  
 1 5

<210> 58  
 <211> 14  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> protein sequence encoding AM3-523 CDR3

<400> 58  
 Trp Arg Val Gly Gly Tyr Arg His Arg Ala Leu Val Leu Gly

1

5

10

&lt;210&gt; 59

&lt;211&gt; 314

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; nucleotide sequence encoding AM3-523

&lt;400&gt; 59

atggcgctgc aggtggatat tgtgccgagc cagggcgaaa ttagcgtggg cgaaagcaaa 60

ttttttctgt gccaggtggc gggcagcggc agccatatgc gtattagctg gtttagcccg 120

aacggcgaaa aactgacccc gaaccagcag cgtattagcg tgggtgtggaa cgatgatagc 180

agcagcaccc tgaccattta taacgcgaac attgatgatg cgggcattta taaatgcgtg 240

gtgtggcgtg tgggcggcta tcgtcatcgt gcgctgggtg tgggcgaagc gaccgtgaac 300

gtgaaaattt ttca 314

&lt;210&gt; 60

&lt;211&gt; 103

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; protein sequence encoding AM4-661

&lt;400&gt; 60

Leu Gln Val Asp Ile Val Pro Ser Gln Gly Glu Ile Ser Val Gly Glu  
1 5 10 15Ser Lys Phe Phe Leu Cys Gln Val Ala Gly Ser Lys Ser Asp Phe Arg  
20 25 30Ile Ser Trp Phe Ser Pro Asn Gly Glu Lys Leu Thr Pro Asn Gln Gln  
35 40 45Arg Ile Ser Val Val Trp Asn Asp Asp Ser Ser Ser Thr Leu Thr Ile  
50 55 60Tyr Asn Ala Asn Ile Asp Asp Ala Gly Ile Tyr Lys Cys Val Val Tyr  
65 70 75 80Arg Thr Gly Gly Tyr Arg His Arg Tyr Leu Val Leu Gly Glu Ala Thr  
85 90 95Val Asn Val Lys Ile Phe Gln  
100

&lt;210&gt; 61

&lt;211&gt; 6

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; protein sequence encoding AM4-661 CDR1

&lt;400&gt; 61

Ser Lys Ser Asp Phe Arg  
1 5

&lt;210&gt; 62

<211> 14  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> protein sequence encoding AM4-661 CDR3

<400> 62

Tyr Arg Thr Gly Gly Tyr Arg His Arg Tyr Leu Val Leu Gly  
 1 5 10

<210> 63  
 <211> 314  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> nucleotide sequence encoding AM4-661

<400> 63  
 atggcgctgc aggtggatat tgtgccgagc cagggcgaaa ttagcgtggg cgaaagcaaa 60  
 ttttttctgt gccaggtggc gggcagcaaa agcaacattc gtattagctg gtttagcccg 120  
 aacggcgaaa aactgacccc gaaccagcag cgtattagcg tgggtgtggaa cgatgatagc 180  
 agcagcaccc tgaccattta taacgcgaac attgatgatg cgggcattta taaatgcgtg 240  
 gtgtatcgta ccggcggcta tcgtcatcgt tatctgaaac tgggcgaagc gaccgtgaac 300  
 gtgaaaattt ttca 314

<210> 64  
 <211> 103  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> protein sequence encoding AM3-466

<400> 64

Leu Gln Val Asp Ile Val Pro Ser Gln Gly Glu Ile Ser Val Gly Glu  
 1 5 10 15  
 Ser Lys Phe Phe Leu Cys Gln Val Ala Gly Ser Gly Ser His Gln Arg  
 20 25 30  
 Ile Ser Trp Phe Ser Pro Asn Gly Glu Lys Leu Thr Pro Asn Gln Gln  
 35 40 45  
 Arg Ile Ser Val Val Trp Asn Asp Asp Ser Ser Ser Thr Leu Thr Ile  
 50 55 60  
 Tyr Asn Ala Asn Ile Asp Asp Ala Gly Ile Tyr Lys Cys Val Val Trp  
 65 70 75 80  
 Arg Thr Gly Ala Tyr Arg His Arg Ala Leu Val Leu Gly Glu Ala Thr  
 85 90 95  
 Val Asn Val Lys Ile Phe Gln  
 100

<210> 65  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence

&lt;220&gt;

&lt;223&gt; protein sequence encoding AM3-466 CDR1

&lt;400&gt; 65

Ser Gly Ser His Gln Arg  
 1 5

&lt;210&gt; 66

&lt;211&gt; 14

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; protein sequence encoding AM3-466 CDR3

&lt;400&gt; 66

Trp Arg Thr Gly Ala Tyr Arg His Arg Ala Leu Val Leu Gly  
 1 5 10

&lt;210&gt; 67

&lt;211&gt; 314

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; nucleotide sequence encoding AM3-466

&lt;400&gt; 67

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atggcgctgc aggtggatat tgtgccgagc cagggcgaaa ttagcgtggg cgaaagcaaa      60
ttttttctgt gccaggtggc gggcagcggc agccatcagc gtattagctg gtttagcccg      120
aacggcgaaa aactgacccc gaaccagcag cgtattagcg tgggtgtggaa cgatgatagc      180
agcagcaccc tgaccattta taacgcgaac attgatgatg cgggcattta taaatgcgtg      240
gtgtggcgta ccggcgcgta tcgtcatcgt gcgctgggtg tgggcgaagc gaccgtgaac      300
gtgaaaattt ttca                                     314

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&lt;210&gt; 68

&lt;211&gt; 103

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; protein sequence encoding AM5-245

&lt;400&gt; 68

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

Arg Thr Gly Gly Tyr Arg His Arg Ala Leu Val Leu Gly Glu Ala Thr  
                             85                            90                            95

Val Asn Val Lys Ile Phe Gln  
                             100

<210> 69  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> protein sequence encoding AM5-245 CDR1  
 <400> 69

Ser Gly Ser His Ile Arg  
   1                            5

<210> 70  
 <211> 14  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> protein sequence encoding AM5-245 CDR3  
 <400> 70

Trp Arg Thr Gly Gly Tyr Arg His Arg Ala Leu Val Leu Gly  
   1                            5                            10

<210> 71  
 <211> 314  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> nucleotide sequence encoding AM5-245

<400> 71  
 atggcgctgc aggtggatat tgtgccgagc cagggcgaaa ttagcgtggg cgaaagcaaa 60  
 ttttttctgt gccaggcggc gggcagcggc agccatattc gtattagctg gtttagcccg 120  
 aacggcgaaa aactgacccc gaaccagcag cgtattagcg tgggtgtggaa cgatgatagc 180  
 agcagcaccc tgaccattta taacgcgaac attgatgatg cgggcattta taaatgcgtg 240  
 gtgtggcgta ccggcggcta tcgtcatcgt gcgctggtgc tgggcgaagc gaccgtgaac 300  
 gtgaaaattt ttca 314

<210> 72  
 <211> 103  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> protein sequence encoding AM4-272  
 <400> 72

Leu Gln Val Asp Ile Val Pro Ser Gln Gly Glu Ile Ser Val Gly Glu  
   1                            5                            10                            15

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

Ile Ser Trp Phe Ser Pro Asn Gly Glu Lys Leu Thr Pro Asn Gln Gln  
35 40 45  
Arg Ile Ser Val Val Trp Asn Asp Asp Ser Ser Ser Thr Leu Thr Ile  
50 55 60  
Tyr Asn Ala Asn Ile Asp Asp Ala Gly Ile Tyr Lys Cys Val Val Tyr  
65 70 75 80  
Arg Ile Gly Gly Tyr Arg His Arg Tyr Leu Val Leu Gly Glu Ala Thr  
85 90 95  
Val Asn Val Lys Ile Phe Gln  
100

<210> 73  
<211> 6  
<212> PRT  
<213> Artificial sequence

<220>  
<223> protein sequence encoding AM4-272 CDR1  
<400> 73

Ser Tyr Ser Asp Tyr Arg  
1 5

<210> 74  
<211> 14  
<212> PRT  
<213> Artificial sequence

<220>  
<223> protein sequence encoding AM4-272 CDR3  
<400> 74

Tyr Arg Ile Gly Gly Tyr Arg His Arg Tyr Leu Val Leu Gly  
1 5 10

<210> 75  
<211> 300  
<212> DNA  
<213> Artificial sequence

<220>  
<223> nucleotide sequence encoding AM4-272

<400> 75  
ctgcaagtag atattgtgcc gagccagggc gaaattagcg tgggcgaaag caaatTTTTc 60  
ttatgccagg tggcgggcca tttgtagggt aggtcgatca gctggtttag cccgaacggt 120  
gaaaaactga cccggaatca gcaacgtatc agcgttgtgt ggaacgatga tagctctagt 180  
accctgacga tttacaatgc gaacattgat gacgcgggca tttataaatg cgtggttagag 240  
cagcgggggc ggtcgcagtc ttatttttcg gaagccaccg ttaatgtgaa aatctttcag 300

<210> 76  
<211> 103  
<212> PRT  
<213> Artificial sequence

<220>  
<223> protein sequence encoding AM4-746

&lt;400&gt; 76

Leu Gln Val Asp Ile Val Pro Ser Gln Gly Glu Ile Ser Val Gly Glu  
 1 5 10 15  
 Ser Lys Phe Phe Leu Cys Gln Val Ala Gly Ser Lys Ser Asn Ile Arg  
 20 25 30  
 Ile Ser Trp Phe Ser Pro Asn Gly Glu Lys Leu Thr Pro Asn Gln Gln  
 35 40 45  
 Arg Ile Ser Val Val Trp Asn Asp Asp Ser Ser Ser Thr Leu Thr Ile  
 50 55 60  
 Tyr Asn Ala Asn Ile Asp Asp Ala Gly Ile Tyr Lys Cys Val Val Tyr  
 65 70 75 80  
 Arg Thr Gly Gly Tyr Arg His Arg Tyr Leu Lys Leu Gly Glu Ala Thr  
 85 90 95  
 Val Asn Val Lys Ile Phe Gln  
 100

&lt;210&gt; 77

&lt;211&gt; 6

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; protein sequence encoding AM4-746 CDR1

&lt;400&gt; 77

Ser Lys Ser Asn Ile Arg  
 1 5

&lt;210&gt; 78

&lt;211&gt; 14

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; protein sequence encoding AM4-746 CDR3

&lt;400&gt; 78

Tyr Arg Thr Gly Gly Tyr Arg His Arg Tyr Leu Lys Leu Gly  
 1 5 10

&lt;210&gt; 79

&lt;211&gt; 314

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; nucleotide sequence encoding AM4-746

&lt;400&gt; 79

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| atggcgctgc aggtggatat tgtgccgagc cagggcgaaa ttagcgtggg cgaaagcaaa | 60  |
| ttttttctgt gccaggtggc gggcagcaaa agcaacattc gtattagctg gtttagcccg | 120 |
| aacggcgaaa aactgacccc gaaccagcag cgtattagcg tggtgtggaa cgatgatagc | 180 |
| agcagcacc tgaccattta taacgcgaac attgatgatg cgggcattta taaatgcgtg  | 240 |
| gtgtatcgta ccggcggcta tcgtcatcgt tatctgaaac tgggcgaagc gaccgtgaac | 300 |

gtgaaaattt ttca

&lt;210&gt; 80

&lt;211&gt; 243

&lt;212&gt; PRT

&lt;213&gt; Artificial sequence

&lt;220&gt;

<223> protein sequence encoding AM3-114-Im7-FH-SA21 dual specificity  
i-body

&lt;400&gt; 80

Met Ala Leu Gln Val Asp Ile Val Pro Ser Gln Gly Glu Ile Ser Val  
 1 5 10 15  
 Gly Glu Ser Lys Phe Phe Leu Cys Gln Val Ala Gly Ser Leu Ser Gly  
 20 25 30  
 Ile Arg Ile Ser Trp Phe Ser Pro Asn Gly Glu Lys Leu Thr Pro Asn  
 35 40 45  
 Gln Gln Arg Ile Ser Val Val Trp Asn Asp Asp Ser Ser Ser Thr Leu  
 50 55 60  
 Thr Ile Tyr Asn Ala Asn Ile Asp Asp Ala Gly Ile Tyr Lys Cys Val  
 65 70 75 80  
 Val Trp Arg Thr Gly Gly Tyr Arg His Arg Tyr Leu Val Leu Gly Glu  
 85 90 95  
 Ala Thr Val Asn Val Lys Ile Phe Gln Gly Gly Gly Gly Ser Glu Leu  
 100 105 110  
 Lys Asn Ser Ile Ser Asp Tyr Thr Glu Ala Glu Phe Val Gln Leu Leu  
 115 120 125  
 Lys Glu Ile Glu Lys Glu Asn Val Ala Ala Thr Asp Asp Val Leu Asp  
 130 135 140  
 Val Leu Leu Glu His Phe Val Lys Ile Thr Glu His Pro Asp Gly Thr  
 145 150 155 160  
 Asp Leu Ile Tyr Tyr Pro Ser Asp Asn Arg Asp Asp Ser Pro Glu Gly  
 165 170 175  
 Ile Val Lys Glu Ile Lys Glu Trp Arg Ala Ala Asn Gly Lys Pro Gly  
 180 185 190  
 Phe Lys Gln Gly Gly Gly Gly Gly Ser Asp Tyr Lys Asp Asp Asp Asp  
 195 200 205  
 Lys Gly Ser Gly His His His His His His His His Gly Gly Gly Gly  
 210 215 220  
 Ser Arg Leu Ile Glu Asp Ile Cys Leu Pro Arg Trp Gly Cys Leu Trp  
 225 230 235 240  
 Glu Asp Asp

&lt;210&gt; 81

&lt;211&gt; 732

&lt;212&gt; DNA

&lt;213&gt; Artificial sequence

&lt;220&gt;

<223> nucleotide sequence encoding AM3-114-Im7-FH-SA21 dual specificity i-body

<400> 81  
 atggccctgc aagtcgacat cgttccgtca caaggtgaaa tcagcgtggg tgagtccaaa 60  
 ttctttctgt gccaggctgc aggcagcctg agcggatatcc gtattagctg gttcagcccg 120  
 aatggcgaaa agctgacgcc gaaccagcag cgtatctctg tggtttgga cgacgacagc 180  
 agcagcacc tgaccatcta taacgccaat attgatgatg caggcattta caaatgtgtg 240  
 gtgtggcgca ccggtggtta ccgccaccgt tacctggttt tgggcgaggg gacgggtcaat 300  
 gttaagattt tccaagggtg cggtggttagc gagctgaaga actccatcag cgactatacc 360  
 gaagcggaat ttgttcagtt gctgaaagaa attgagaaag aaaatgtcgc ggccactgat 420  
 gacgtcttag acgtgctgct ggagcatttt gttaagatca ccgagcacc ggacggtagc 480  
 gatctcatct actatcctag cgataaccgc gacgattctc cagagggcat tgtcaaagaa 540  
 attaaggaat ggcgtgctgc aaatggtaaa ccgggtttca aacagggtgg tgggtggcggc 600  
 agcgactaca aagatgatga cgacaagggt agcggccacc atcaccacca tcatcaccac 660  
 ggcggcggcg gctcgcgttt gattgaagat atctgcctgc cgcgttgggg ttgtctgtgg 720  
 gaggacgatt aa 732

<210> 82  
 <211> 105  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> amino acid sequence encoding 21H5 i-body

<400> 82  
 Leu Gln Val Asp Ile Val Pro Ser Gln Gly Glu Ile Ser Val Gly Glu  
 1 5 10 15  
 Ser Lys Phe Phe Leu Cys Gln Val Ala Gly Asp Ala Lys Asp Lys Asp  
 20 25 30  
 Ile Ser Trp Phe Ser Pro Asn Gly Glu Lys Leu Thr Pro Asn Gln Gln  
 35 40 45  
 Arg Ile Ser Val Val Trp Asn Asp Asp Ser Ser Ser Thr Leu Thr Ile  
 50 55 60  
 Tyr Asn Ala Asn Ile Asp Asp Ala Gly Ile Tyr Lys Cys Val Val Thr  
 65 70 75 80  
 Gly Ser Asp Ala Met Ser Asn Tyr Ser Tyr Pro Ile Ser Glu Ser Glu  
 85 90 95  
 Ala Thr Val Asn Val Lys Ile Phe Gln  
 100 105

<210> 83  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> amino acid sequence encoding AM4-774 CDR1  
 Page 27

<400> 83

Ser Lys Ser Val Ile Arg  
1 5

<210> 84

<211> 14

<212> PRT

<213> Artificial sequence

<220>

<223> amino acid sequence encoding AM4-774 CDR3

<400> 84

Tyr Arg Thr Gly Gly Tyr Arg His Arg Tyr Leu Val Leu Gly  
1 5 10

<210> 85

<211> 6

<212> PRT

<213> Artificial sequence

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<210> 86

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Tyr Arg Thr Gly Gly Tyr Arg His Arg Tyr Leu Val Leu Gly  
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Ser Lys Ser Asp Phe Arg  
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Ile Thr Ser Glu Gly His  
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Val Tyr

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Ser Lys Asp Asp Ile Arg  
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Val Gly Asn His Ile Arg  
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&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; amino acid sequence encoding AM5-95 CDR3

&lt;400&gt; 104

Trp Arg Thr Gly Gly Tyr Arg His Arg Ala Leu Val Leu Gly  
 1 5 10

&lt;210&gt; 105

&lt;211&gt; 352

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 105

Met Glu Gly Ile Ser Ile Tyr Thr Ser Asp Asn Tyr Thr Glu Glu Met  
 1 5 10 15

Gly Ser Gly Asp Tyr Asp Ser Met Lys Glu Pro Cys Phe Arg Glu Glu  
 20 25 30

Asn Ala Asn Phe Asn Lys Ile Phe Leu Pro Thr Ile Tyr Ser Ile Ile  
 35 40 45

Phe Leu Thr Gly Ile Val Gly Asn Gly Leu Val Ile Leu Val Met Gly  
 50 55 60

Tyr Gln Lys Lys Leu Arg Ser Met Thr Asp Lys Tyr Arg Leu His Leu  
 65 70 75 80

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

Asp Ala Val Ala Asn Trp Tyr Phe Gly Asn Phe Leu Cys Lys Ala Val  
 100 105 110

His Val Ile Tyr Thr Val Asn Leu Tyr Ser Ser Val Leu Ile Leu Ala  
 115 120 125

Phe Ile Ser Leu Asp Arg Tyr Leu Ala Ile Val His Ala Thr Asn Ser  
 130 135 140

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

Trp Ile Pro Ala Leu Leu Leu Thr Ile Pro Asp Phe Ile Phe Ala Asn  
 165 170 175

Val Ser Glu Ala Asp Asp Arg Tyr Ile Cys Asp Arg Phe Tyr Pro Asn  
 180 185 190

Asp Leu Trp Val Val Val Phe Gln Phe Gln His Ile Met Val Gly Leu  
 195 200 205

Ile Leu Pro Gly Ile Val Ile Leu Ser Cys Tyr Cys Ile Ile Ile Ser  
 210 215 220

Lys Leu Ser His Ser Lys Gly His Gln Lys Arg Lys Ala Leu Lys Thr  
 225 230 235 240

Thr Val Ile Leu Ile Leu Ala Phe Phe Ala Cys Trp Leu Pro Tyr Tyr  
 245 250 255

Ile Gly Ile Ser Ile Asp Ser Phe Ile Leu Leu Glu Ile Ile Lys Gln  
 260 265 270

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Cys | Glu | Phe | Glu | Asn | Thr | Val | His | Lys | Trp | Ile | Ser | Ile | Thr | Glu |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Ala | Leu | Ala | Phe | Phe | His | Cys | Cys | Leu | Asn | Pro | Ile | Leu | Tyr | Ala | Phe |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Leu | Gly | Ala | Lys | Phe | Lys | Thr | Ser | Ala | Gln | His | Ala | Leu | Thr | Ser | Val |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Ser | Arg | Gly | Ser | Ser | Leu | Lys | Ile | Leu | Ser | Lys | Gly | Lys | Arg | Gly | Gly |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| His | Ser | Ser | Val | Ser | Thr | Glu | Ser | Glu | Ser | Ser | Ser | Phe | His | Ser | Ser |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |