SEQUENCE LISTING

<110> MacroGenics, Inc.
Loo, Deryk
Huang, Ling

<120> Antibodies Reactive with B7-H3, Immunologically Active Fragments Thereof and Uses Thereof

<130> 1301.0071I

<150> US 61/311,057
<151> 2010-03-05

<150> US 61/310,695
<151> 2010-03-04

<150> US 61/310,692
<151> 2010-03-04

<160> 116

<170> PatentIn version 3.5

<210> 1
<211> 316
<212> PRT
<213> Homo sapiens

<400> 1

```
Met Leu Arg Arg Arg Gly Ser Pro Gly Met Gly Val His Val Gly Ala
1               5                  10                  15

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

Val Pro Glu Asp Pro Val Val Ala Leu Val Gly Thr Asp Ala Thr Leu
        35                  40                  45

Cys Cys Ser Phe Ser Pro Glu Pro Gly Phe Ser Leu Ala Gln Leu Asn
    50                  55                  60

Leu Ile Trp Gln Leu Thr Asp Thr Lys Gln Leu Val His Ser Phe Ala
65                  70                  75                  80

Glu Gly Gln Asp Gln Gly Ser Ala Tyr Ala Asn Arg Thr Ala Leu Phe
                85                  90                  95

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

Arg Val Ala Asp Glu Gly Ser Phe Thr Cys Phe Val Ser Ile Arg Asp
        115                 120                 125
```

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

Pro Ser Met Thr Leu Glu Pro Asn Lys Asp Leu Arg Pro Gly Asp Thr
145                 150                 155                 160

Val Thr Ile Thr Cys Ser Ser Tyr Arg Gly Tyr Pro Glu Ala Glu Val
                165                 170                 175

Phe Trp Gln Asp Gly Gln Gly Val Pro Leu Thr Gly Asn Val Thr Thr
            180                 185                 190

Ser Gln Met Ala Asn Glu Gln Gly Leu Phe Asp Val His Ser Val Leu
        195                 200                 205

Arg Val Val Leu Gly Ala Asn Gly Thr Tyr Ser Cys Leu Val Arg Asn
    210                 215                 220

Pro Val Leu Gln Gln Asp Ala His Gly Ser Val Thr Ile Thr Gly Gln
225                 230                 235                 240

Pro Met Thr Phe Pro Pro Glu Ala Leu Trp Val Thr Val Gly Leu Ser
                245                 250                 255

Val Cys Leu Ile Ala Leu Leu Val Ala Leu Ala Phe Val Cys Trp Arg
            260                 265                 270

Lys Ile Lys Gln Ser Cys Glu Glu Glu Asn Ala Gly Ala Glu Asp Gln
        275                 280                 285

Asp Gly Glu Gly Glu Gly Ser Lys Thr Ala Leu Gln Pro Leu Lys His
    290                 295                 300

Ser Asp Ser Lys Glu Asp Asp Gly Gln Glu Ile Ala
305                 310                 315
```

<210> 2
<211> 948
<212> DNA
<213> Homo sapiens

<400> 2
atgctgcgtc ggcggggcag ccctggcatg ggtgtgcatg tgggtgcagc cctgggagca 60

ctgtggttct gcctcacagg agccctggag gtccaggtcc ctgaagaccc agtggtggca 120

ctggtgggca ccgatgccac cctgtgctgc tccttctccc ctgagcctgg cttcagcctg 180

gcacagctca acctcatctg gcagctgaca gataccaaac agctggtgca cagctttgct 240

gagggccagg accagggcag cgcctatgcc aaccgcacgg ccctcttccc ggacctgctg 300

gcacagggca acgcatccct gaggctgcag cgcgtgcgtg tggcggacga gggcagcttc 360

acctgcttcg tgagcatccg ggatttcggc agcgctgccg tcagcctgca ggtggccgct 420

ccctactcga agcccagcat gaccctggag cccaacaagg acctgcggcc aggggacacg 480

gtgaccatca cgtgctccag ctaccggggc taccctgagg ctgaggtgtt ctggcaggat 540

gggcagggtg tgcccctgac tggcaacgtg accacgtcgc agatggccaa cgagcagggc 600

ttgtttgatg tgcacagcgt cctgcgggtg gtgctgggtg cgaatggcac ctacagctgc 660

ctggtgcgca accccgtgct gcagcaggat gcgcacggct ctgtcaccat cacagggcag 720

cctatgacat tccccccaga ggccctgtgg gtgaccgtgg ggctgtctgt ctgtctcatt 780

gcactgctgg tggccctggc tttcgtgtgc tggagaaaga tcaaacagag ctgtgaggag 840

gagaatgcag gagctgagga ccaggatggg gagggagaag gctccaagac agccctgcag 900

cctctgaaac actctgacag caaagaagat gatggacaag aaatagcc 948

<210> 3
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Amino Acid Sequence of BRCA84D Variable Light Chain

<400> 3

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

Asp Arg Val Ser Val Thr Cys Lys Ala Ser Gln Asn Val Asp Thr Asn
20 25 30

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

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

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

Glu Asp Leu Ala Glu Tyr Phe Cys Gln Gln Tyr Asn Asn Tyr Pro Phe
85 90 95

Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 4
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding BRCA84D Variable Light Chain

<400> 4
gacattgcga tgacccagtc tcaaaaattc atgtccacat cagtaggaga cagggtcagc 60

gtcacctgca aggccagtca gaatgtggat actaatgtag cctggtatca acagaaacca 120

gggcaatctc ctaaagcact gatttactcg gcatcctacc ggtacagtgg agtccctgat 180

cgcttcacag gcagtggatc tgggacagat ttcactctca ccatcaacaa tgtgcagtct 240

gaagacttgg cagagtattt ctgtcagcaa tataacaact atccattcac gttcggctcg 300

gggacaaagt tggaaataaa a 321

<210> 5
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> BRCA84D Variable Light Chain CDR1

<400> 5

Lys Ala Ser Gln Asn Val Asp Thr Asn Val Ala
1 5 10

<210> 6
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding BRCA84D Variable Light Chain CDR1

<400> 6
aaggccagtc agaatgtgga tactaatgta gcc 33

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

<220>
<223> BRCA84D Variable Light Chain CDR2

<400> 7

Ser Ala Ser Tyr Arg Tyr Ser
1 5

<210> 8
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding BRCA84D Variable Light Chain CDR2

<400> 8
tcggcatcct accggtacag t 21

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

<220>
<223> BRCA84D Variable Light Chain CDR3

<400> 9

Gln Gln Tyr Asn Asn Tyr Pro Phe Thr
1 5

<210> 10
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding BRCA84D Variable Light Chain CDR3

<400> 10
cagcaatata acaactatcc attcacg 27

<210> 11
<211> 122
<212> PRT
<213> Artificial Sequence

<220>
<223> Amino Acid Sequence of BRCA84D Variable Heavy Chain

<400> 11

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

```
Ser Arg Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe
            20                  25                  30

Gly Met His Trp Val Arg Gln Ala Pro Glu Lys Gly Leu Glu Trp Val
        35                  40                  45

Ala Tyr Ile Ser Ser Asp Ser Ser Ala Ile Tyr Tyr Ala Asp Thr Val
    50                  55                  60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Pro Lys Asn Thr Leu Phe
65                  70                  75                  80

Leu Gln Met Thr Ser Leu Arg Ser Glu Asp Thr Ala Met Tyr Tyr Cys
                85                  90                  95

Gly Arg Gly Arg Glu Asn Ile Tyr Tyr Gly Ser Arg Leu Asp Tyr Trp
            100                 105                 110

Gly Gln Gly Thr Thr Leu Thr Val Ser Ser
        115                 120
```

<210> 12
<211> 366
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding BRCA84D Variable Heavy Chain

<400> 12
gatgtgcagc tggtggagtc tgggggaggc ttagtgcagc ctggagggtc ccggaaactc 60

tcctgtgcag cctctggatt cactttcagt agctttggaa tgcactgggt tcgtcaggct 120

ccagagaagg ggctggagtg ggtcgcatac attagtagtg acagtagtgc catctactat 180

gcagacacag tgaagggccg attcaccatc tccagagaca atcccaagaa caccctgttc 240

ctgcaaatga ccagtctaag gtctgaggac acggccatgt attactgtgg aagagggagg 300

gaaaacattt actacggtag taggcttgac tactggggcc aaggcaccac tctcacagtc 360

tcctca 366

<210> 13
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> BRCA84D Variable Heavy Chain CDR1

<400> 13

Phe Gly Met His
1

<210> 14
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding BRCA84D Variable Heavy Chain CDR1

<400> 14
tttggaatgc ac 12

<210> 15
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> BRCA84D Variable Heavy Chain CDR2

<400> 15

Tyr Ile Ser Ser Asp Ser Ser Ala Ile Tyr Tyr Ala Asp Thr Val Lys
1 5 10 15

<210> 16
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding BRCA84D Variable Heavy Chain CDR2

<400> 16
tacattagta gtgacagtag tgccatctac tatgcagaca cagtgaag 48

<210> 17
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> BRCA84D Variable Heavy Chain CDR3

<400> 17

Gly Arg Glu Asn Ile Tyr Tyr Gly Ser Arg Leu Asp Tyr
1 5 10

<210> 18
<211> 39

<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding BRCA84D Variable Heavy Chain CDR3

<400> 18
gggagggaaa acatttacta cggtagtagg cttgactac 39

<210> 19
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Amino Acid Sequence of BRCA69D Variable Light Chain

<400> 19

Asp Ile Gln Met Thr Gln Thr Thr Ser Ser Leu Ser Ala Ser Leu Gly
1 5 10 15

Asp Arg Val Thr Ile Ser Cys Arg Ala Ser Gln Asp Ile Ser Asn Tyr
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Thr Val Lys Leu Leu Ile
35 40 45

Tyr Tyr Thr Ser Arg Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

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

Glu Asp Ile Ala Thr Tyr Phe Cys Gln Gln Gly Asn Thr Leu Pro Pro
85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 20
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding BRCA69D Variable Light Chain

<400> 20
gatatccaga tgacacagac tacatcctcc ctgtctgcct ctctgggaga cagagtcacc 60

atcagttgca gggcaagtca ggacattagt aattatttaa actggtatca gcagaaacca 120

gatggaactg ttaaactcct gatctactac acatcacgat tacactcagg agtcccatca 180

aggttcagtg gcagtgggtc tggaacagat tattctctca ccattgacaa cctggagcaa 240

gaagatattg ccacttactt ttgccaacag ggtaatacgc ttcctccgac gttcggtgga 300

ggcaccaaac tggaaatcaa a 321

<210> 21
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> BRCA69D Variable Light Chain CDR1

<400> 21

Arg Ala Ser Gln Asp Ile Ser Asn Tyr Leu Asn
1 5 10

<210> 22
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding BRCA69D Variable Light Chain CDR1

<400> 22
agggcaagtc aggacattag taattattta aac 33

<210> 23
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> BRCA69D Variable Light Chain CDR2

<400> 23

Tyr Thr Ser Arg Leu His Ser
1 5

<210> 24
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding BRCA69D Variable Light Chain CDR2

<400> 24

tacacatcac gattacactc a 21

<210> 25
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> BRCA69D Variable Light Chain CDR3

<400> 25

Gln Gln Gly Asn Thr Leu Pro Pro Thr
1 5

<210> 26
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding BRCA69D Variable Light Chain CDR3

<400> 26
caacagggta atacgcttcc tccgacg 27

<210> 27
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Amino Acid Sequence of BRCA69D Variable Heavy Chain

<400> 27

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
1 5 10 15

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

Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Thr Ile Tyr Pro Gly Asp Gly Asp Thr Arg Tyr Thr Gln Lys Phe
50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met Gln Leu Ser Ser Leu Ala Ser Glu Asp Ser Ala Val Tyr Tyr Cys

85 90 95

Ala Arg Arg Gly Ile Pro Arg Leu Trp Tyr Phe Asp Val Trp Gly Ala
100 105 110

Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 28
<211> 360
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding BRCA69D Variable Heavy Chain

<400> 28
caggttcagc tccagcagtc tggggctgag ctggcaagac ctggggcttc agtgaagttg 60

tcctgcaagg cttctggcta cacctttact agctactgga tgcagtgggt aaaacagagg 120

cctggacagg gtctggaatg gattgggact atttatcctg gagatggtga tactaggtac 180

actcagaagt tcaagggcaa ggccacattg actgcagata aatcctccag cacagcctac 240

atgcaactca gcagcttggc atctgaggac tctgcggtct attactgtgc aagaagaggg 300

attccacggc tttggtactt cgatgtctgg ggcgcaggga ccacggtcac cgtctcctca 360

<210> 29
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> BRCA69D Variable Heavy Chain CDR1

<400> 29

Ser Tyr Trp Met Gln
1 5

<210> 30
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding BRCA69D Variable Heavy Chain CDR1

<400> 30
agctactgga tgcag 15

<210> 31

<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> BRCA69D Variable Heavy Chain CDR2

<400> 31

Thr Ile Tyr Pro Gly Asp Gly Asp Thr Arg Tyr Thr Gln Lys Phe Lys
1 5 10 15

Gly

<210> 32
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding BRCA69D Variable Heavy Chain CDR2

<400> 32
actatttatc ctggagatgg tgatactagg tacactcaga agttcaaggg c 51

<210> 33
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> BRCA69D Variable Heavy Chain CDR3

<400> 33

Arg Gly Ile Pro Arg Leu Trp Tyr Phe Asp Val
1 5 10

<210> 34
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding BRCA69D Variable Heavy Chain CDR3

<400> 34
agagggattc cacggctttg gtacttcgat gtc 33

<210> 35
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Amino Acid Sequence of PRCA157 Variable Light Chain

<400> 35

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

Glu Thr Val Thr Ile Thr Cys Arg Ala Ser Glu Ser Ile Tyr Ser Tyr
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Gln Gly Lys Ser Pro Gln Leu Leu Val
35 40 45

Tyr Asn Thr Lys Thr Leu Pro Glu Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Gln Phe Ser Leu Lys Ile Asn Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Gly Arg Tyr Tyr Cys Gln His His Tyr Gly Thr Pro Pro
85 90 95

Trp Thr Phe Gly Gly Gly Thr Asn Leu Glu Ile Lys
100 105

<210> 36
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding PRCA157 Variable Light Chain

<400> 36
gacatccaga tgactcagtc tccagcctcc ctatctgtat ctgtgggaga aactgtcacc 60

attacatgtc gagcaagtga gagtatttac agttatttag catggtatca gcagaaacag 120

ggaaaatctc ctcagctcct ggtctataat acaaaaacct taccagaggg tgtgccatca 180

aggttcagtg gcagtggatc aggcacacag ttttctctga agatcaacag cctgcagcct 240

gaagattttg ggagatatta ctgtcaacat cattatggta ctcctccgtg gacgttcggt 300

ggaggcacca acctggaaat caaa 324

<210> 37
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> PRCA157 Variable Light Chain CDR1

<400> 37

Arg Ala Ser Glu Ser Ile Tyr Ser Tyr Leu Ala
1 5 10

<210> 38
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding PRCA157 Variable Light Chain CDR1

<400> 38
cgagcaagtg agagtattta cagttattta gca 33

<210> 39
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> PRCA157 Variable Light Chain CDR2

<400> 39

Asn Thr Lys Thr Leu Pro Glu
1 5

<210> 40
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding PRCA157 Variable Light Chain CDR2

<400> 40
aatacaaaaa ccttaccaga g 21

<210> 41
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> PRCA157 Variable Light Chain CDR3

<400> 41

Gln His His Tyr Gly Thr Pro Pro Trp
1 5

<210> 42
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding PRCA157 Variable Light Chain CDR3

<400> 42
caacatcatt atggtactcc tccgtgg 27

<210> 43
<211> 117
<212> PRT
<213> Artificial Sequence

<220>
<223> Amino Acid Sequence of PRCA157 Variable Heavy Chain

<400> 43

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

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30

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

Ala Thr Ile Asn Ser Gly Gly Ser Asn Thr Tyr Tyr Pro Asp Ser Leu
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Arg Ser Leu Lys Ser Glu Asp Thr Ala Met Tyr Tyr Cys
85 90 95

Ala Arg His Asp Gly Gly Ala Met Asp Tyr Trp Gly Gln Gly Thr Ser
100 105 110

Val Thr Val Ser Ser
115

<210> 44
<211> 351
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding PRCA157 Variable Heavy Chain

<400> 44
gaggtgcagc aggtggagtc ggggggagac ttagtgaagc ctggagggtc cctgaaactc 60

tcctgtgcag cctctggatt cactttcagt tcctatggca tgtcttgggt tcgccagact 120

ccagacaaga ggctggagtg ggtcgcaacc attaatagtg gtggaagtaa cacctactat 180

ccagacagtt tgaaggggcg attcaccatc tccagagaca atgccaagaa caccctttac 240

ctgcaaatgc gcagtctgaa gtctgaggac acagccatgt attactgtgc aagacatgac 300

gggggagcta tggactactg gggtcaagga acctcagtca ccgtctcctc a 351

<210> 45
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> PRCA157 Variable Heavy Chain CDR1

<400> 45

Ser Tyr Gly Met Ser
1 5

<210> 46
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding PRCA157 Variable Heavy Chain CDR1

<400> 46
tcctatggca tgtct 15

<210> 47
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> PRCA157 Variable Heavy Chain CDR2

<400> 47

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

Leu Lys Gly

<210> 48
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding PRCA157 Variable Heavy Chain CDR2

<400> 48
gtcgcaacca ttaatagtgg tggaagtaac acctactatc cagacagttt gaagggg 57

<210> 49
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> PRCA157 Variable Heavy Chain CDR3

<400> 49

His Asp Gly Gly Ala Met Asp Tyr
1 5

<210> 50
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding PRCA157 Variable Heavy Chain CDR3

<400> 50
catgacgggg gagctatgga ctac 24

<210> 51
<211> 218
<212> PRT
<213> Homo sapiens

<400> 51

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

Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
20 25 30

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

```
Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
    50                  55                  60

Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
65                  70                  75                  80

His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
                85                  90                  95

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

Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu
        115                 120                 125

Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
    130                 135                 140

Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
145                 150                 155                 160

Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
                165                 170                 175

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
            180                 185                 190

Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
        195                 200                 205

Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
    210                 215
```

<210> 52
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Amino Acid Linker Sequence

<400> 52

```
Gly Gly Gly Ser Gly Gly Gly Gly
1               5
```

<210> 53
<211> 24
<212> DNA

<213> Artificial Sequence

<220>
<223> Polynucleotide Encoding Amino Acid Linker Sequence

<400> 53
ggaggcggat ccggaggcgg aggc 24

<210> 54
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> DART C-Terminal Amino acid Sequence

<400> 54

Leu Gly Gly Cys
1

<210> 55
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Hinge Domain

<400> 55

Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro
1 5 10

<210> 56
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Hinge Domain

<400> 56

Glu Ser Lys Tyr Gly Pro Pro Cys Pro Ser
1 5 10

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

<220>
<223> DART C-Terminal Amino Acid Sequence

<400> 57

Val Glu Pro Lys Ser Cys
1 5

<210> 58
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Encoding DART C-Terminal Seuquence

<400> 58
gttgagccca aatcttgt 18

<210> 59
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> DART Cysteine-Containing Sequence

<400> 59

Leu Gly Gly Cys Phe Asn Arg Gly Glu Cys
1 5 10

<210> 60
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Encoding DART C-Terminal Cysteine-Containing Sequence

<400> 60
ctgggaggct gcttcaacag gggagagtgt 30

<210> 61
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> DART Cysteine Containing Sequence

<400> 61

Phe Asn Arg Gly Glu Cys
1 5

<210> 62
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Encoding DART Cysteine-Containing Sequence

<400> 62
ttcaacaggg gagagtgt 18

<210> 63
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> DART E-Coil Amino acid Sequence

<400> 63

Glu Val Ala Ala Leu Glu Lys Glu Val Ala Ala Leu Glu Lys Glu Val
1 5 10 15

Ala Ala Leu Glu Lys Glu Val Ala Ala Leu Glu Lys
20 25

<210> 64
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> DART K-Coil Amino Acid Sequence

<400> 64

Lys Val Ala Ala Leu Lys Glu Lys Val Ala Ala Leu Lys Glu Lys Val
1 5 10 15

Ala Ala Leu Lys Glu Lys Val Ala Ala Leu Lys Glu
20 25

<210> 65
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Linker

<400> 65

Gly Gly Gly Asn Ser
1 5

<210> 66
<211> 383
<212> PRT

<213> Homo sapiens

<400> 66

```
Met Gly Leu Gly Pro Val Phe Leu Leu Leu Ala Gly Ile Phe Pro Phe
1               5                  10                  15

Ala Pro Pro Gly Ala Ala Ala Glu Pro His Ser Leu Arg Tyr Asn Leu
            20                  25                  30

Thr Val Leu Ser Trp Asp Gly Ser Val Gln Ser Gly Phe Leu Thr Glu
        35                  40                  45

Val His Leu Asp Gly Gln Pro Phe Leu Arg Cys Asp Arg Gln Lys Cys
    50                  55                  60

Arg Ala Lys Pro Gln Gly Gln Trp Ala Glu Asp Val Leu Gly Asn Lys
65                  70                  75                  80

Thr Trp Asp Arg Glu Thr Arg Asp Leu Thr Gly Asn Gly Lys Asp Leu
                85                  90                  95

Arg Met Thr Leu Ala His Ile Lys Asp Gln Lys Glu Gly Leu His Ser
            100                 105                 110

Leu Gln Glu Ile Arg Val Cys Glu Ile His Glu Asp Asn Ser Thr Arg
        115                 120                 125

Ser Ser Gln His Phe Tyr Tyr Asp Gly Glu Leu Phe Leu Ser Gln Asn
    130                 135                 140

Leu Glu Thr Lys Glu Trp Thr Met Pro Gln Ser Ser Arg Ala Gln Thr
145                 150                 155                 160

Leu Ala Met Asn Val Arg Asn Phe Leu Lys Glu Asp Ala Met Lys Thr
                165                 170                 175

Lys Thr His Tyr His Ala Met His Ala Asp Cys Leu Gln Glu Leu Arg
            180                 185                 190

Arg Tyr Leu Lys Ser Gly Val Val Leu Arg Arg Thr Val Pro Pro Met
        195                 200                 205

Val Asn Val Thr Arg Ser Glu Ala Ser Glu Gly Asn Ile Thr Val Thr
    210                 215                 220

Cys Arg Ala Ser Gly Phe Tyr Pro Trp Asn Ile Thr Leu Ser Trp Arg
```

225 230 235 240

Gln Asp Gly Val Ser Leu Ser His Asp Thr Gln Gln Trp Gly Asp Val
245 250 255

Leu Pro Asp Gly Asn Gly Thr Tyr Gln Thr Trp Val Ala Thr Arg Ile
260 265 270

Cys Gln Gly Glu Glu Gln Arg Phe Thr Cys Tyr Met Glu His Ser Gly
275 280 285

Asn His Ser Thr His Pro Val Pro Ser Gly Lys Val Leu Val Leu Gln
290 295 300

Ser His Trp Gln Thr Phe His Val Ser Ala Val Ala Ala Ala Ala Ile
305 310 315 320

Phe Val Ile Ile Ile Phe Tyr Val Arg Cys Cys Lys Lys Lys Thr Ser
325 330 335

Ala Ala Glu Gly Pro Glu Leu Val Ser Leu Gln Val Leu Asp Gln His
340 345 350

Pro Val Gly Thr Ser Asp His Arg Asp Ala Thr Gln Leu Gly Phe Gln
355 360 365

Pro Leu Met Ser Asp Leu Gly Ser Thr Gly Ser Thr Glu Gly Ala
370 375 380

<210> 67
<211> 305
<212> PRT
<213> Homo sapiens

<400> 67

Pro His Ser Leu Arg Tyr Asn Leu Met Val Leu Ser Gln Asp Gly Ser
1 5 10 15

Val Gln Ser Gly Phe Leu Ala Glu Gly His Leu Asp Gly Gln Pro Phe
20 25 30

Leu Arg Tyr Asp Arg Gln Lys Arg Arg Ala Lys Pro Gln Gly Gln Trp
35 40 45

Ala Glu Asp Val Leu Gly Ala Lys Thr Trp Asp Thr Glu Thr Glu Asp
50 55 60

Leu Thr Glu Asn Gly Gln Asp Leu Arg Arg Thr Leu Thr His Ile Lys
65 70 75 80

Asp Gln Lys Gly Gly Leu His Ser Leu Gln Glu Ile Arg Val Cys Glu
85 90 95

Ile His Glu Asp Ser Ser Thr Arg Gly Ser Arg His Phe Tyr Tyr Asp
100 105 110

Gly Glu Leu Phe Leu Ser Gln Asn Leu Glu Thr Gln Glu Ser Thr Val
115 120 125

Pro Gln Ser Ser Arg Ala Gln Thr Leu Ala Met Asn Val Thr Asn Phe
130 135 140

Trp Lys Glu Asp Ala Met Lys Thr Lys Thr His Tyr Arg Ala Met Gln
145 150 155 160

Ala Asp Cys Leu Gln Lys Leu Gln Leu Pro Pro Met Val Asn Val Ile
165 170 175

Cys Ser Glu Val Ser Glu Gly Asn Ile Thr Val Thr Cys Arg Ala Ser
180 185 190

Ser Phe Tyr Pro Arg Asn Ile Thr Leu Thr Trp Arg Gln Asp Gly Val
195 200 205

Ser Leu Ser His Asn Thr Gln Gln Trp Gly Asp Val Leu Pro Asp Gly
210 215 220

Asn Gly Thr Tyr Gln Thr Trp Val Ala Thr Arg Ile Arg Gln Gly Glu
225 230 235 240

Glu Gln Arg Phe Thr Cys Tyr Met Glu His Ser Gly Asn His Gly Thr
245 250 255

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

Asp Phe Pro Tyr Val Ser Ala Ala Met Pro Cys Phe Val Ile Ile Ile
275 280 285

Ile Leu Cys Val Pro Cys Cys Lys Lys Lys Thr Ser Ala Ala Glu Gly
290 295 300

Pro
305

<210> 68
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized BRCA84D-1 Variable Light Chain

<400> 68

Asp Ile Gln Leu Thr Gln Ser Pro Ser Phe Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Asn Val Asp Thr Asn
20 25 30

Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Ser Ala Ser Tyr Arg Tyr Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Asn Asn Tyr Pro Phe
85 90 95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 69
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding Humanized BRCA84D-1 Variable Light Chain

<400> 69
gacatccagc tgacccagtc cccctccttc ctgtctgcct ccgtgggcga cagagtgacc 60

atcacatgca aggcctccca gaacgtggac accaacgtgg cctggtatca gcagaagcct 120

ggcaaggccc ctaagctgct gatctactcc gcctcctacc ggtactccgg cgtgccttcc 180

aggttctccg gctccggctc tggcaccgac ttcaccctga ccatctccag cctgcagcct 240

gaggacttcg ccacctacta ctgccagcag tacaacaact acccctttcac cttcggccag 300

ggcaccaagc tggaaatcaa g 321

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

<220>
<223> Humanized BRCA84D-1 Variable Light Chain CDR1

<400> 70

Lys Ala Ser Gln Asn Val Asp Thr Asn Val Ala
1 5 10

<210> 71
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding Humanized BRCA84D-1 Variable Light Chain CDR1

<400> 71
aaggccagtc agaatgtgga tactaatgta gcc 33

<210> 72
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized BRCA84D-1 Variable Light Chain CDR2

<400> 72

Ser Ala Ser Tyr Arg Tyr Ser
1 5

<210> 73
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding Humanized BRCA84D-1 Variable Light Chain CDR2

<400> 73
tcggcatcct accggtacag t 21

<210> 74
<211> 9
<212> PRT

<213> Artificial Sequence

<220>
<223> Humanized BRCA84D-1 Variable Light Chain CDR3

<400> 74

Gln Gln Tyr Asn Asn Tyr Pro Phe Thr
1 5

<210> 75
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding Humanized BRCA84D-1 Variable Light Chain CDR3

<400> 75
cagcaatata acaactatcc attcacg 27

<210> 76
<211> 534
<212> PRT
<213> Homo sapiens

<400> 76

Met Leu Arg Arg Arg Gly Ser Pro Gly Met Gly Val His Val Gly Ala
1 5 10 15

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

Val Pro Glu Asp Pro Val Val Ala Leu Val Gly Thr Asp Ala Thr Leu
35 40 45

Cys Cys Ser Phe Ser Pro Glu Pro Gly Phe Ser Leu Ala Gln Leu Asn
50 55 60

Leu Ile Trp Gln Leu Thr Asp Thr Lys Gln Leu Val His Ser Phe Ala
65 70 75 80

Glu Gly Gln Asp Gln Gly Ser Ala Tyr Ala Asn Arg Thr Ala Leu Phe
85 90 95

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

Arg Val Ala Asp Glu Gly Ser Phe Thr Cys Phe Val Ser Ile Arg Asp
115 120 125

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

Pro Ser Met Thr Leu Glu Pro Asn Lys Asp Leu Arg Pro Gly Asp Thr
145                 150                 155                 160

Val Thr Ile Thr Cys Ser Ser Tyr Gln Gly Tyr Pro Glu Ala Glu Val
                165                 170                 175

Phe Trp Gln Asp Gly Gln Gly Val Pro Leu Thr Gly Asn Val Thr Thr
            180                 185                 190

Ser Gln Met Ala Asn Glu Gln Gly Leu Phe Asp Val His Ser Ile Leu
        195                 200                 205

Arg Val Val Leu Gly Ala Asn Gly Thr Tyr Ser Cys Leu Val Arg Asn
    210                 215                 220

Pro Val Leu Gln Gln Asp Ala His Ser Ser Val Thr Ile Thr Pro Gln
225                 230                 235                 240

Arg Ser Pro Thr Gly Ala Val Glu Val Gln Val Pro Glu Asp Pro Val
                245                 250                 255

Val Ala Leu Val Gly Thr Asp Ala Thr Leu Arg Cys Ser Phe Ser Pro
            260                 265                 270

Glu Pro Gly Phe Ser Leu Ala Gln Leu Asn Leu Ile Trp Gln Leu Thr
        275                 280                 285

Asp Thr Lys Gln Leu Val His Ser Phe Thr Glu Gly Arg Asp Gln Gly
    290                 295                 300

Ser Ala Tyr Ala Asn Arg Thr Ala Leu Phe Pro Asp Leu Leu Ala Gln
305                 310                 315                 320

Gly Asn Ala Ser Leu Arg Leu Gln Arg Val Arg Val Ala Asp Glu Gly
                325                 330                 335

Ser Phe Thr Cys Phe Val Ser Ile Arg Asp Phe Gly Ser Ala Ala Val
            340                 345                 350

Ser Leu Gln Val Ala Ala Pro Tyr Ser Lys Pro Ser Met Thr Leu Glu
        355                 360                 365
```

```
Pro Asn Lys Asp Leu Arg Pro Gly Asp Thr Val Thr Ile Thr Cys Ser
    370                 375                 380

Ser Tyr Arg Gly Tyr Pro Glu Ala Glu Val Phe Trp Gln Asp Gly Gln
385                 390                 395                 400

Gly Val Pro Leu Thr Gly Asn Val Thr Thr Ser Gln Met Ala Asn Glu
                405                 410                 415

Gln Gly Leu Phe Asp Val His Ser Val Leu Arg Val Val Leu Gly Ala
            420                 425                 430

Asn Gly Thr Tyr Ser Cys Leu Val Arg Asn Pro Val Leu Gln Gln Asp
        435                 440                 445

Ala His Gly Ser Val Thr Ile Thr Gly Gln Pro Met Thr Phe Pro Pro
    450                 455                 460

Glu Ala Leu Trp Val Thr Val Gly Leu Ser Val Cys Leu Ile Ala Leu
465                 470                 475                 480

Leu Val Ala Leu Ala Phe Val Cys Trp Arg Lys Ile Lys Gln Ser Cys
                485                 490                 495

Glu Glu Glu Asn Ala Gly Ala Glu Asp Gln Asp Gly Glu Gly Glu Gly
            500                 505                 510

Ser Lys Thr Ala Leu Gln Pro Leu Lys His Ser Asp Ser Lys Glu Asp
        515                 520                 525

Asp Gly Gln Glu Ile Ala
    530
```

<210> 77
<211> 1602
<212> DNA
<213> Homo sapiens

<400> 77
atgctgcgtc ggcggggcag ccctggcatg ggtgtgcatg tgggtgcagc cctgggagca 60

ctgtggttct gcctcacagg agccctggag gtccaggtcc ctgaagaccc agtggtggca 120

ctggtgggca ccgatgccac cctgtgctgc tccttctccc ctgagcctgg cttcagcctg 180

gcacagctca acctcatctg gcagctgaca gataccaaac agctggtgca cagctttgct 240

gagggccagg accagggcag cgcctatgcc aaccgcacgg ccctcttccc ggacctgctg 300

gcacagggca acgcatccct gaggctgcag cgcgtgcgtg tggcggacga gggcagcttc 360

acctgcttcg tgagcatccg ggatttcggc agcgctgccg tcagcctgca ggtggccgct 420

ccctactcga agcccagcat gaccctggag cccaacaagg acctgcggcc aggggacacg 480

gtgaccatca cgtgctccag ctaccagggc taccctgagg ctgaggtgtt ctggcaggat 540

gggcagggtg tgcccctgac tggcaacgtg accacgtcgc agatggccaa cgagcagggc 600

ttgtttgatg tgcacagcat cctgcgggtg gtgctgggtg caaatggcac ctacagctgc 660

ctggtgcgca accccgtgct gcagcaggat gcgcacagct ctgtcaccat cacaccccag 720

agaagcccca caggagccgt ggaggtccag gtccctgagg acccggtggt ggccctagtg 780

ggcaccgatg ccaccctgcg ctgctccttc tcccccgagc ctggcttcag cctggcacag 840

ctcaacctca tctggcagct gacagacacc aaacagctgg tgcacagttt caccgaaggc 900

cgggaccagg gcagcgccta tgccaaccgc acggccctct tcccggacct gctggcacaa 960

ggcaatgcat ccctgaggct gcagcgcgtg cgtgtggcgg acgagggcag cttcacctgc 1020

ttcgtgagca tccgggattt cggcagcgct gccgtcagcc tgcaggtggc cgctccctac 1080

tcgaagccca gcatgaccct ggagcccaac aaggacctgc ggccagggga cacggtgacc 1140

atcacgtgct ccagctaccg gggctaccct gaggctgagg tgttctggca ggatgggcag 1200

ggtgtgcccc tgactggcaa cgtgaccacg tcgcagatgg ccaacgagca gggcttgttt 1260

gatgtgcaca gcgtcctgcg ggtggtgctg ggtgcgaatg gcacctacag ctgcctggtg 1320

cgcaaccccg tgctgcagca ggatgcgcac ggctctgtca ccatcacagg gcagcctatg 1380

acattccccc cagaggccct gtgggtgacc gtggggctgt ctgtctgtct cattgcactg 1440

ctggtggccc tggctttcgt gtgctggaga aagatcaaac agagctgtga ggaggagaat 1500

gcaggagctg aggaccagga tggggaggga gaaggctcca agacagccct gcagcctctg 1560

aaacactctg acagcaaaga agatgatgga caagaaatag cc 1602

<210> 78

<400> 78
000

<210> 79

<400> 79
000

<210> 80
<211> 122
<212> PRT
<213> Artificial Sequence

<220>

<223> Amino Acid Sequence of Humanized BRCA84D-1 Variable Heavy Chain

<400> 80

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1               5                  10                  15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe
            20                  25                  30

Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45

Ala Tyr Ile Ser Ser Asp Ser Ser Ala Ile Tyr Tyr Ala Asp Thr Val
    50                  55                  60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65                  70                  75                  80

Leu Gln Met Asn Ser Leu Arg Asp Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg Gly Arg Glu Asn Ile Tyr Tyr Gly Ser Arg Leu Asp Tyr Trp
            100                 105                 110

Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120
```

<210> 81
<211> 366
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding Humanized BRCA84D-1 Variable Heavy Chain

<400> 81

```
gaggtgcagc tggtcgagtc tggcggagga ctggtgcagc ctggcggctc cctgagactg       60

tcttgcgccg cctccggctt caccttctcc agcttcggca tgcactgggt ccgccaggct      120

ccaggcaagg gactggaatg ggtggcctac atctcctccg actcctccgc catctactac      180

gccgacaccg tgaagggcag gttcaccatc tcccgggaca acgccaagaa ctccctgtac      240

ctgcagatga actccctgcg ggacgaggac accgccgtgt actactgcgc cagaggccgg      300

gagaatatct actacggctc ccggctggat tattggggcc agggcaccac cgtgaccgtg      360

tcctct                                                                 366
```

<210> 82
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized BRCA84D-1 Variable Heavy Chain CDR1

<400> 82

Phe Gly Met His
1

<210> 83
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding Humanized BRCA84D-1 Variable Heavy Chain CDR1

<400> 83
tttggaatgc ac 12

<210> 84
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized BRCA84D Variable Heavy Chain CDR2

<400> 84

Tyr Ile Ser Ser Asp Ser Ser Ala Ile Tyr Tyr Ala Asp Thr Val Lys
1 5 10 15

<210> 85
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding Humanized BRCA84D-1 Variable Heavy Chain CDR2

<400> 85
tacattagta gtgacagtag tgccatctac tatgcagaca cagtgaag 48

<210> 86
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized BRCA84D-1 Variable Heavy Chain CDR3

<400> 86

Gly Arg Glu Asn Ile Tyr Tyr Gly Ser Arg Leu Asp Tyr
1 5 10

<210> 87
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Sequence Encoding Humanized BRCA84D-1 Variable Heavy Chain CDR3

<400> 87
gggagggaaa acatttacta cggtagtagg cttgactac 39

<210> 88

<400> 88
000

<210> 89
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> hBRCA84D-2VL

<400> 89

Asp Ile Gln Leu Thr Gln Ser Pro Ser Phe Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Asn Val Asp Thr Asn
20 25 30

Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Ala Leu Ile
35 40 45

Tyr Ser Ala Ser Tyr Arg Tyr Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Asn Asn Tyr Pro Phe
85 90 95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 90
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Encoding hBRCA84D-2VL

<400> 90
gacatccagc tgacccagtc cccctccttc ctgtctgcct ccgtgggcga cagagtgacc 60

atcacatgca aggcctccca gaacgtggac accaacgtgg cctggtatca gcagaagcct 120

ggcaaggccc ctaaggcgct gatctactcc gcctcctacc ggtactccgg cgtgccttcc 180

aggttctccg gctccggctc tggcaccgac ttcaccctga ccatctccag cctgcagcct 240

gaggacttcg ccacctacta ctgccagcag tacaacaact acccctttcac cttcggccag 300

ggcaccaagc tggaaatcaa g 321

<210> 91
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> hBRCA84D-3VL

<400> 91

Asp Ile Gln Leu Thr Gln Ser Pro Ser Phe Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Ser Val Thr Cys Lys Ala Ser Gln Asn Val Asp Thr Asn
20 25 30

Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Ser Ala Ser Tyr Arg Tyr Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Asn Asn Tyr Pro Phe
85 90 95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 92
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Encoding hBRCA84D-3VL

<400> 92
gacatccagc tgacccagtc cccctccttc ctgtctgcct ccgtgggcga cagagtgtcc 60

gtcacatgca aggcctccca gaacgtggac accaacgtgg cctggtatca gcagaagcct 120

ggcaaggccc ctaagctgct gatctactcc gcctcctacc ggtactccgg cgtgccttcc 180

aggttctccg gctccggctc tggcaccgac ttcaccctga ccatctccag cctgcagcct 240

gaggacttcg ccacctacta ctgccagcag tacaacaact acccctttcac cttcggccag 300

ggcaccaagc tggaaatcaa g 321

<210> 93
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> hBRCA84D-4VL

<400> 93

Asp Ile Gln Leu Thr Gln Ser Pro Ser Phe Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Asn Val Asp Thr Asn
20 25 30

Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Ser Ala Ser Tyr Arg Tyr Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Asn Asn Tyr Pro Phe
85 90 95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 94
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Encoding hBRCA84D-4VL

<400> 94
gacatccagc tgacccagtc cccctccttc ctgtctgcct ccgtgggcga cagagtgacc 60

atcacatgca aggcctccca gaacgtggac accaacgtgg cctggtatca gcagaagcct 120

ggccaggccc ctaagctgct gatctactcc gcctcctacc ggtactccgg cgtgccttcc 180

aggttctccg gctccggctc tggcaccgac ttcaccctga ccatctccag cctgcagcct 240

gaggacttcg ccacctacta ctgccagcag tacaacaact acccctttcac cttcggccag 300

ggcaccaagc tggaaatcaa g 321

<210> 95
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> hBRCA84D-5VL

<400> 95

Asp Ile Gln Leu Thr Gln Ser Pro Ser Phe Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Asn Val Asp Thr Asn
20 25 30

Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Lys Ala Leu Ile
35 40 45

Tyr Ser Ala Ser Tyr Arg Tyr Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Asn Asn Tyr Pro Phe
85 90 95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 96

<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Encoding hBRCA84D-5VL

<400> 96
gacatccagc tgacccagtc cccctccttc ctgtctgcct ccgtgggcga cagagtgacc 60

atcacatgca aggcctccca gaacgtggac accaacgtgg cctggtatca gcagaagcct 120

ggccaggccc ctaaggcgct gatctactcc gcctcctacc ggtactccgg cgtgccttcc 180

aggttctccg gctccggctc tggcaccgac ttcaccctga ccatctccag cctgcagcct 240

gaggacttcg ccacctacta ctgccagcag tacaacaact acccctttcac cttcggccag 300

ggcaccaagc tggaaatcaa g 321

<210> 97
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> hBRCA84D-6VL

<400> 97

Asp Ile Gln Leu Thr Gln Ser Pro Ser Phe Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Asn Val Asp Thr Asn
20 25 30

Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Ser Ala Ser Tyr Arg Tyr Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Glu Tyr Tyr Cys Gln Gln Tyr Asn Asn Tyr Pro Phe
85 90 95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 98
<211> 321

<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Encoding hBRCA84D-6VL

<400> 98
gacatccagc tgacccagtc cccctccttc ctgtctgcct ccgtgggcga cagagtgacc 60

atcacatgca aggcctccca gaacgtggac accaacgtgg cctggtatca gcagaagcct 120

ggcaaggccc ctaagctgct gatctactcc gcctcctacc ggtactccgg cgtgccttcc 180

aggttctccg gctccggctc tggcaccgac ttcaccctga ccatctccag cctgcagcct 240

gaggacttcg ccgagtacta ctgccagcag tacaacaact acccctttcac cttcggccag 300

ggcaccaagc tggaaatcaa g 321

<210> 99
<211> 122
<212> PRT
<213> Artificial Sequence

<220>
<223> hBRCA84D-2VH

<400> 99

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

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe
20 25 30

Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Tyr Ile Ser Ser Asp Ser Ser Ala Ile Tyr Tyr Ala Asp Thr Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Asp Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Gly Arg Gly Arg Glu Asn Ile Tyr Tyr Gly Ser Arg Leu Asp Tyr Trp
100 105 110

Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 100
<211> 366
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Encoding hBRCA84D-2VH

<400> 100
gaggtgcagc tggtcgagtc tggcggagga ctggtgcagc ctggcggctc cctgagactg 60

tcttgcgccg cctccggctt caccttctcc agcttcggca tgcactgggt ccgccaggct 120

ccaggcaagg gactggaatg ggtggcctac atctcctccg actcctccgc catctactac 180

gccgacaccg tgaagggcag gttcaccatc tcccgggaca acgccaagaa ctccctgtac 240

ctgcagatga actccctgcg ggacgaggac accgccgtgt actactgcgg cagaggccgg 300

gagaatatct actacggctc ccggctggat tattggggcc agggcaccac cgtgaccgtg 360

tcctct 366

<210> 101
<211> 122
<212> PRT
<213> Artificial Sequence

<220>
<223> hBRCA84D-3VH

<400> 101

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

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe
20 25 30

Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Tyr Ile Ser Ser Asp Ser Ser Ala Ile Tyr Tyr Ala Asp Thr Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Asp Glu Asp Thr Ala Met Tyr Tyr Cys
85 90 95

Gly Arg Gly Arg Glu Asn Ile Tyr Tyr Gly Ser Arg Leu Asp Tyr Trp
100 105 110

Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 102
<211> 366
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Encoding hBRCA84D-3VH

<400> 102
gaggtgcagc tggtcgagtc tggcggagga ctggtgcagc ctggcggctc cctgagactg 60

tcttgcgccg cctccggctt caccttctcc agcttcggca tgcactgggt ccgccaggct 120

ccaggcaagg gactggaatg ggtggcctac atctcctccg actcctccgc catctactac 180

gccgacaccg tgaagggcag gttcaccatc tcccgggaca acgccaagaa ctccctgtac 240

ctgcagatga actccctgcg ggacgaggac accgccatgt actactgcgg cagaggccgg 300

gagaatatct actacggctc ccggctggat tattggggcc agggcaccac cgtgaccgtg 360

tcctct 366

<210> 103
<211> 122
<212> PRT
<213> Artificial Sequence

<220>
<223> hBRCA84D-4VH

<400> 103

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

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe
20 25 30

Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Tyr Ile Ser Ser Asp Ser Ser Ala Ile Tyr Tyr Ala Asp Thr Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys

85 90 95

Ala Arg Gly Arg Glu Asn Ile Tyr Tyr Gly Ser Arg Leu Asp Tyr Trp
100 105 110

Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 104
<211> 366
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Encoding hBRCA84D-4VH

<400> 104
gaggtgcagc tggtcgagtc tggcggagga ctggtgcagc ctggcggctc cctgagactg 60

tcttgcgccg cctccggctt caccttctcc agcttcggca tgcactgggt ccgccaggct 120

ccaggcaagg gactggaatg ggtggcctac atctcctccg actcctccgc catctactac 180

gccgacaccg tgaagggcag gttcaccatc tcccgggaca acgccaagaa ctccctgtac 240

ctgcagatga actccctgcg gagcgaggac accgccgtgt actactgcgc cagaggccgg 300

gagaatatct actacggctc ccggctggat tattggggcc agggcaccac cgtgaccgtg 360

tcctct 366

<210> 105
<211> 214
<212> PRT
<213> Artificial Sequence

<220>
<223> chBRCA84D Light Chain

<400> 105

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

Asp Arg Val Ser Val Thr Cys Lys Ala Ser Gln Asn Val Asp Thr Asn
20 25 30

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

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

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

Glu Asp Leu Ala Glu Tyr Phe Cys Gln Gln Tyr Asn Asn Tyr Pro Phe
85 90 95

Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys Arg Thr Val Ala Ala
100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145 150 155 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
165 170 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
180 185 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
195 200 205

Phe Asn Arg Gly Glu Cys
210

<210> 106
<211> 645
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Encoding chBRCA84D Light Chain

<400> 106
gacattgcga tgacccagtc tcaaaaattc atgtccacat cagtaggaga cagggtcagc 60

gtcacctgca aggccagtca gaatgtggat actaatgtag cctggtatca acagaaacca 120

gggcaatctc ctaaagcact gatttactcg gcatcctacc ggtacagtgg agtccctgat 180

cgcttcacag gcagtggatc tgggacagat ttcactctca ccatcaacaa tgtgcagtct 240

gaagacttgg cagagtattt ctgtcagcaa tataacaact atccattcac gttcggctcg 300

gggacaaagt tggaaataaa acgtacggtg gctgcaccat ctgtcttcat cttcccgcca 360

tctgatgagc agttgaaatc tggaactgcc tctgttgtgt gcctgctgaa taacttctat 420

cccagagagg ccaaagtaca gtggaaggtg gataacgccc tccaatcggg taactcccag 480

gagagtgtca cagagcagga cagcaaggac agcacctaca gcctcagcag caccctgacg 540

ctgagcaaag cagactacga gaaacacaaa gtctacgcct gcgaagtcac ccatcagggc 600

ctgagctcgc ccgtcacaaa gagcttcaac aggggagagt gttag 645

<210> 107
<211> 452
<212> PRT
<213> Artificial Sequence

<220>
<223> chBRCA84D Heavy Chain

<400> 107

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

Ser Arg Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe
20 25 30

Gly Met His Trp Val Arg Gln Ala Pro Glu Lys Gly Leu Glu Trp Val
35 40 45

Ala Tyr Ile Ser Ser Asp Ser Ser Ala Ile Tyr Tyr Ala Asp Thr Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Pro Lys Asn Thr Leu Phe
65 70 75 80

Leu Gln Met Thr Ser Leu Arg Ser Glu Asp Thr Ala Met Tyr Tyr Cys
85 90 95

Gly Arg Gly Arg Glu Asn Ile Tyr Tyr Gly Ser Arg Leu Asp Tyr Trp
100 105 110

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

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

Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr
145 150 155 160

Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro
165 170 175

Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr
180 185 190

Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn
195 200 205

His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Pro Lys Ser
210 215 220

Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu
225 230 235 240

Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu
245 250 255

Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser
260 265 270

His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu
275 280 285

Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr
290 295 300

Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn
305 310 315 320

Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro
325 330 335

Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln
340 345 350

Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val
355 360 365

Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val
370 375 380

Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro
385 390 395 400

Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr

405 410 415

Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val
420 425 430

Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu
435 440 445

Ser Pro Gly Lys
450

<210> 108
<211> 1359
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Encoding chBRCA84D Heavy Chain

<400> 108
gatgtgcagc tggtggagtc tgggggaggc ttagtgcagc ctggagggtc ccggaaactc 60

tcctgtgcag cctctggatt cactttcagt agctttggaa tgcactgggt tcgtcaggct 120

ccagagaagg ggctggagtg ggtcgcatac attagtagtg acagtagtgc catctactat 180

gcagacacag tgaagggccg attcaccatc tccagagaca atcccaagaa caccctgttc 240

ctgcaaatga ccagtctaag gtctgaggac acggccatgt attactgtgg aagagggagg 300

gaaaacattt actacggtag taggcttgac tactggggcc aaggcaccac tctcacagtc 360

tcctcagcct ccaccaaggg cccatcggtc ttcccctgg caccctcctc caagagcacc 420

tctgggggca cagcggccct gggctgcctg gtcaaggact acttccccga accggtgacg 480

gtgtcgtgga actcaggcgc cctgaccagc ggcgtgcaca ccttcccggc tgtcctacag 540

tcctcaggac tctactccct cagcagcgtg gtgaccgtgc cctccagcag cttgggcacc 600

cagacctaca tctgcaacgt gaatcacaag cccagcaaca ccaaggtgga caagagagtt 660

gagcccaaat cttgtgacaa aactcacaca tgcccaccgt gcccagcacc tgaactcctg 720

gggggaccgt cagtcttcct cttccccca aaacccaagg acaccctcat gatctcccgg 780

acccctgagg tcacatgcgt ggtggtggac gtgagccacg aagaccctga ggtcaagttc 840

aactggtacg tggacggcgt ggaggtgcat aatgccaaga caaagccgcg ggaggagcag 900

tacaacagca cgtaccgtgt ggtcagcgtc ctcaccgtcc tgcaccagga ctggctgaat 960

ggcaaggagt acaagtgcaa ggtctccaac aaagccctcc cagccccat cgagaaaacc 1020

atctccaaag ccaaagggca gccccgagaa ccacaggtgt acaccctgcc cccatcccgg 1080

gatgagctga ccaagaacca ggtcagcctg acctgcctgg tcaaaggctt ctatcccagc 1140

gacatcgccg tggagtggga gagcaatggg cagccggaga acaactacaa gaccacgcct 1200

cccgtgctgg actccgacgg ctccttcttc ctctacagca agctcaccgt ggacaagagc 1260

aggtggcagc aggggaacgt cttctcatgc tccgtgatgc atgaggctct gcacaaccac 1320

tacacgcaga agagcctctc cctgtctccg ggtaaatga 1359

<210> 109
<211> 270
<212> PRT
<213> Artificial Sequence

<220>
<223> TCR VL x hBRCA84D VH-2-E Coil DART Chain

<400> 109

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

Glu Arg Ala Thr Leu Ser Cys Ser Ala Thr Ser Ser Val Ser Tyr Met
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Trp Ile Tyr
35 40 45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly Ser
50 55 60

Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu
65 70 75 80

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

Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly Gly Ser Gly Gly
100 105 110

Gly Gly Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro
115 120 125

Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser
130 135 140

Ser Phe Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu
145 150 155 160

Trp Val Ala Tyr Ile Ser Ser Asp Ser Ser Ala Ile Tyr Tyr Ala Asp

165 170 175

Thr Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser
180 185 190

Leu Tyr Leu Gln Met Asn Ser Leu Arg Asp Glu Asp Thr Ala Val Tyr
195 200 205

Tyr Cys Gly Arg Gly Arg Glu Asn Ile Tyr Tyr Gly Ser Arg Leu Asp
210 215 220

Tyr Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Cys Gly
225 230 235 240

Gly Gly Glu Val Ala Ala Leu Glu Lys Glu Val Ala Ala Leu Glu Lys
245 250 255

Glu Val Ala Ala Leu Glu Lys Glu Val Ala Ala Leu Glu Lys
260 265 270

<210> 110
<211> 810
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Encoding TCR VL x hBRCA84D VH-2-E Coil DART Chain

<400> 110
gaaattgtgt tgacacagtc tccagccacc ctgtctttgt ctccagggga aagagccacc 60

ctctcctgca gtgccacctc aagtgtaagt tacatgcact ggtatcagca gaaaccaggg 120

aaagccccta agcgctggat ctatgacaca tccaaactgg cttctggggt cccatcaagg 180

ttcagcggca gtggatctgg gacagaattt actctcacaa tcagcagcct gcagcctgaa 240

gattttgcaa cttattactg tcagcagtgg agtagtaacc cgctcacgtt tggccagggg 300

accaagcttg agatcaaagg aggcggatcc ggcggcggag gcgaggtgca gctggtcgag 360

tctggcggag gactggtgca gcctggcggc tccctgagac tgtcttgcgc cgcctccggc 420

ttcaccttct ccagcttcgg catgcactgg gtccgccagg ctccaggcaa gggactggaa 480

tgggtggcct acatctcctc cgactcctcc gccatctact acgccgacac cgtgaagggc 540

aggttcacca tctcccggga caacgccaag aactccctgt acctgcagat gaactccctg 600

cgggacgagg acaccgccgt gtactactgc ggcagaggcc gggagaatat ctactacggc 660

tcccggctgg attattgggg ccagggcacc accgtgaccg tgtcctccgg aggatgtggc 720

ggtggagaag tggccgcact ggagaaagag gttgctgctt tggagaagga ggtcgctgca 780

cttgaaaagg aggtcgcagc cctggagaaa 810

<210> 111
<211> 269
<212> PRT
<213> Artificial Sequence

<220>
<223> hBRCA84DVL-2 x TCR VH - K coil Chain

<400> 111

Asp Ile Gln Leu Thr Gln Ser Pro Ser Phe Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Asn Val Asp Thr Asn
20 25 30

Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Ala Leu Ile
35 40 45

Tyr Ser Ala Ser Tyr Arg Tyr Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Asn Asn Tyr Pro Phe
85 90 95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly Gly Ser Gly
100 105 110

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

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Lys Phe
130 135 140

Thr Ser Tyr Val Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
145 150 155 160

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

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

Thr Ala Tyr Leu Gln Met Asn Ser Leu Arg Ser Glu Asp Thr Ala Val
195 200 205

His Tyr Cys Ala Arg Gly Ser Tyr Tyr Asp Tyr Asp Gly Phe Val Tyr
210 215 220

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Cys Gly Gly
225 230 235 240

Gly Lys Val Ala Ala Leu Lys Glu Lys Val Ala Ala Leu Lys Glu Lys
245 250 255

Val Ala Ala Leu Lys Glu Lys Val Ala Ala Leu Lys Glu
260 265

<210> 112
<211> 807
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Encoding hBRCA84DVL-2 x TCR VH - K coil Chain

<400> 112
gacatccagc tgacccagtc cccctccttc ctgtctgcct ccgtgggcga cagagtgacc 60

atcacatgca aggcctccca gaacgtggac accaacgtgg cctggtatca gcagaagcct 120

ggcaaggccc ctaaggcgct gatctactcc gcctcctacc ggtactccgg cgtgccttcc 180

aggttctccg gctccggctc tggcaccgac ttcaccctga ccatctccag cctgcagcct 240

gaggacttcg ccacctacta ctgccagcag tacaacaact acccctttcac cttcggccag 300

ggcaccaagc tggaaatcaa gggaggcgga tccggcggcg gaggccaggt tcagctggtg 360

cagtctggag ctgaggtgaa gaagcctggg gcctcagtga aggtctcctg caaggccagc 420

ggttacaagt ttaccagcta cgtgatgcac tgggtgcgac aggcccctgg acaagggctt 480

gagtggatcg gatatattaa tccttacaat gatgttacta agtacaatga gaagttcaaa 540

ggcagagtca cgattaccgc ggacaaatcc acgagcacag cctacctgca gatgaacagc 600

ctgagatccg aggacacggc cgtgcactac tgtgcgagag ggagctacta tgattacgac 660

gggtttgttt actggggcca agggactctg gtcactgtga gctccggagg atgtggcggt 720

ggaaaagtgg ccgcactgaa ggagaaagtt gctgctttga aagagaaggt cgccgcactt 780

aaggaaaagg tcgcagccct gaaagag 807

<210> 113
<211> 274

<212> PRT
<213> Artificial Sequence

<220>
<223> NKG2D VL x hBRCA84D VH-2-E Coil DART Chain

<400> 113

Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
1 5 10 15

Ser Ile Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn
20 25 30

Ala Val Asn Trp Tyr Gln Gln Leu Pro Gly Lys Ala Pro Lys Leu Leu
35 40 45

Ile Tyr Tyr Asp Asp Leu Leu Pro Ser Gly Val Ser Asp Arg Phe Ser
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Phe Leu Ala Ile Ser Gly Leu Gln
65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu
85 90 95

Asn Gly Pro Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly
100 105 110

Gly Ser Gly Gly Gly Gly Glu Val Gln Leu Val Glu Ser Gly Gly Gly
115 120 125

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
130 135 140

Phe Thr Phe Ser Ser Phe Gly Met His Trp Val Arg Gln Ala Pro Gly
145 150 155 160

Lys Gly Leu Glu Trp Val Ala Tyr Ile Ser Ser Asp Ser Ser Ala Ile
165 170 175

Tyr Tyr Ala Asp Thr Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn
180 185 190

Ala Lys Asn Ser Leu Tyr Leu Gln Met Asn Ser Leu Arg Asp Glu Asp
195 200 205

Thr Ala Val Tyr Tyr Cys Gly Arg Gly Arg Glu Asn Ile Tyr Tyr Gly

210 215 220

Ser Arg Leu Asp Tyr Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
225 230 235 240

Gly Gly Cys Gly Gly Gly Glu Val Ala Ala Leu Glu Lys Glu Val Ala
245 250 255

Ala Leu Glu Lys Glu Val Ala Ala Leu Glu Lys Glu Val Ala Ala Leu
260 265 270

Glu Lys

<210> 114
<211> 822
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Encoding NKG2D VL x hBRCA84D VH-2-E Coil DART Chain

<400> 114
cagtctgccc tgactcagcc tgcctccgtg tctgggtctc ctggacagtc aatcaccatc 60

tcctgttctg gaagcagctc caacatcgga aataatgctg ttaactggta ccagcagctc 120

ccaggaaagg ctcccaaact cctcatctat tatgatgacc tactgccctc aggggtctct 180

gaccgattct ctggctccaa gtctggcacc tcagccttcc tggccatcag tgggctccag 240

tctgaggatg aggctgatta ttactgtgca gcatgggatg acagcctgaa tggtccagtg 300

ttcggcggag ggaccaagct gaccgtccta ggaggcggat ccggcggcgg aggcgaggtg 360

cagctggtcg agtctggcgg aggactggtg cagcctggcg gctccctgag actgtcttgc 420

gccgcctccg gcttcacctt ctccagcttc ggcatgcact gggtccgcca ggctccaggc 480

aagggactgg aatgggtggc ctacatctcc tccgactcct ccgccatcta ctacgccgac 540

accgtgaagg gcaggttcac catctcccgg gacaacgcca agaactccct gtacctgcag 600

atgaactccc tgcgggacga ggacaccgcc gtgtactact gcggcagagg ccgggagaat 660

atctactacg gctcccggct ggattattgg ggccagggca ccaccgtgac cgtgtcctcc 720

ggaggatgtg gcggtggaga agtggccgca ctggagaaag aggttgctgc tttggagaag 780

gaggtcgctg cacttgaaaa ggaggtcgca gccctggaga aa 822

<210> 115
<211> 270
<212> PRT

<213> Artificial Sequence

<220>
<223> hBRCA84DVL-2 x NKG2D VH - K coil Chain

<400> 115

Asp Ile Gln Leu Thr Gln Ser Pro Ser Phe Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Asn Val Asp Thr Asn
20 25 30

Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Ala Leu Ile
35 40 45

Tyr Ser Ala Ser Tyr Arg Tyr Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Asn Asn Tyr Pro Phe
85 90 95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly Gly Ser Gly
100 105 110

Gly Gly Gly Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Lys
115 120 125

Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
130 135 140

Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
145 150 155 160

Glu Trp Val Ala Phe Ile Arg Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala
165 170 175

Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn
180 185 190

Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val
195 200 205

Tyr Tyr Cys Ala Lys Asp Arg Gly Leu Gly Asp Gly Thr Tyr Phe Asp
210 215 220

```
Tyr Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Cys Gly
225                 230                 235                 240

Gly Gly Lys Val Ala Ala Leu Lys Glu Lys Val Ala Ala Leu Lys Glu
                245                 250                 255

Lys Val Ala Ala Leu Lys Glu Lys Val Ala Ala Leu Lys Glu
            260                 265                 270
```

<210> 116
<211> 810
<212> DNA
<213> Artificial Sequence

<220>
<223> Polynucleotide Encoding hBRCA84DVL-2 x NKG2D VH - K coil Chain

<400> 116

```
gacatccagc tgacccagtc cccctccttc ctgtctgcct ccgtgggcga cagagtgacc       60

atcacatgca aggcctccca gaacgtggac accaacgtgg cctggtatca gcagaagcct      120

ggcaaggccc ctaaggcgct gatctactcc gcctcctacc ggtactccgg cgtgccttcc      180

aggttctccg gctccggctc tggcaccgac ttcaccctga ccatctccag cctgcagcct      240

gaggacttcg ccacctacta ctgccagcag tacaacaact acccctttcac cttcggccag      300

ggcaccaagc tggaaatcaa gggaggcgga tccggcggcg gaggccaggt acagctggtg      360

gagtctgggg gaggcctggt caagcctgga gggtccctga gactctcctg tgcagcgtct      420

ggattcacct tcagtagcta tggcatgcac tgggtccgcc aggctccagg caaggggctg      480

gagtgggtgg catttatacg gtatgatgga agtaataaat actatgcaga ctccgtgaag      540

ggccgattca ccatctccag agacaattcc aagaacacgc tgtatctgca aatgaacagc      600

ctgagagctg aggacacggc tgtgtattac tgtgcgaaag atcgaggttt gggggatgga      660

acctactttg actactgggg ccaagggacc acggtcaccg tctcctccgg aggatgtggc      720

ggtggaaaag tggccgcact gaaggagaaa gttgctgctt tgaaagagaa ggtcgccgca      780

cttaaggaaa aggtcgcagc cctgaaagag                                       810
```