SEQUENCE LISTING

<110> MASSACHUSETTS INSTITUTE OF TECHNOLOGY
Sasisekharan, Ram
Robinson, Luke N
Tharakaraman, Kannan

<120> Novel, full spectrum anti-dengue antibody

<130> 0492611-1258

<160> 44

<170> PatentIn version 3.5

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<213> Artificial Sequence

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<223> wt 4E11 HC

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

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

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

Ile Gly Arg Ile Asp Pro Ala Asn Gly Asp Thr Lys Tyr Asp Pro Lys
50 55 60

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

Tyr Leu His Leu Ser Ser Leu Thr Ser Gly Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Ser Arg Gly Trp Glu Gly Phe Ala Tyr Trp Gly Gln Gly Thr Leu
100 105 110

Val Thr Val Ser Ala
115

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Glu Leu Val Met Thr Gln Thr Pro Ala Ser Leu Ala Val Ser Leu Gly

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

Gly Asn Ser Phe Met His Trp Tyr Gln Gln Lys Ala Gly Gln Pro Pro
35 40 45

Lys Leu Leu Ile Tyr Arg Ala Ser Asn Leu Glu Ser Gly Ile Pro Ala
50 55 60

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

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

Glu Val Pro Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg
100 105 110

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

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Tyr Met Ser Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile
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Gly Arg Ile

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Thr Lys Tyr Asp Pro Lys Phe Gln Gly Lys Ala Thr Ile Thr Ala Asp
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Thr Ser Ser Asn Thr Ala Tyr Leu His Leu Ser Ser Leu Thr Ser Gly
            20   25   30

Asp Thr Ala Val Tyr Tyr Cys Ser Arg
        35   40

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<223> wt 4E11 HC FR4

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Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ala
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<223> wt 4E11 HC CDR1

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Gly Phe Asn Ile Lys Asp Thr
1   5

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Asp Pro Ala Asn Gly Asp
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Gly Trp Glu Gly Phe Ala Tyr
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<400> 10

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

Gln Arg Ala Thr Ile Ser Cys
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Trp Tyr Gln Gln Lys Ala Gly Gln Pro Pro Lys Leu Leu Ile Tyr
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Gly Ile Pro Ala Arg Phe Ser Gly Ser Gly Ser Arg Thr Asp Phe Thr
1 5 10 15

Leu Thr Ile Asn Pro Val Glu Ala Asp Asp Val Ala Thr Tyr Phe Cys
20 25 30

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Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg
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Arg Ala Ser Glu Asn Val Asp Arg Tyr Gly Asn Ser Phe Met His
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Arg Ala Ser Asn Leu Glu Ser
1 5

<210> 16
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Gln Arg Ser Asn Glu Val Pro Trp Thr
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<213> Dengue virus type 1

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

Cys Lys Ile Pro Phe Ser Ser Gln Asp Glu Lys Gly Val Thr Gln Asn
35 40 45

Gly Arg Leu Ile Thr Ala Asn Pro Ile Val Thr Asp Lys Glu Lys Pro
50 55 60

Val Asn Ile Glu Ala Glu Pro Pro Phe Gly Glu Ser Tyr Ile Val Val
65 70 75 80

Gly Ala Gly Glu Lys Ala Leu Lys Leu Ser Trp Phe Lys
85 90

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<213> Dengue virus type 2

<400> 18

Met Cys Thr Gly Lys Phe Lys Val Val Lys Glu Ile Ala Glu Thr Gln
1 5 10 15

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

Cys Lys Ile Pro Phe Glu Ile Met Asp Leu Glu Lys Lys His Val Leu
35 40 45

Gly Arg Leu Ile Thr Val Asn Pro Ile Val Ile Glu Lys Asp Ser Pro
50 55 60

Ile Asn Ile Glu Ala Glu Pro Pro Phe Gly Asp Ser Tyr Ile Ile Ile
65 70 75 80

Gly Val Glu Pro Gly Gln Leu Lys Leu Asn Trp Phe Lys
85 90

<210> 19
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<212> PRT
<213> Dengue virus type 3

<400> 19

Met Cys Thr Asn Thr Phe Val Leu Lys Lys Glu Val Ser Glu Thr Gln
1 5 10 15

His Gly Thr Ile Leu Ile Lys Val Glu Tyr Lys Gly Glu Asp Ala Pro
20 25 30

Cys Lys Ile Pro Phe Ser Thr Glu Asp Gly Gln Gly Lys Ala His Asn
35 40 45

Gly Arg Leu Ile Thr Ala Asn Pro Val Val Thr Lys Lys Glu Glu Pro
50 55 60

Val Asn Ile Glu Ala Glu Pro Pro Phe Gly Glu Ser Asn Ile Val Ile
65 70 75 80

Gly Ile Gly Asp Asn Ala Leu Lys Ile Asn Trp Tyr Lys
85 90

<210> 20
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<400> 20

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

His Gly Thr Thr Val Val Lys Val Lys Tyr Glu Gly Ala Gly Ala Pro
            20                  25                  30

Cys Lys Val Pro Ile Glu Ile Arg Asp Val Asn Lys Glu Lys Val Val
        35                  40                  45

Gly Arg Ile Ile Ser Ser Thr Pro Leu Ala Glu Asn Thr Asn Ser Val
    50                  55                  60

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

Gly Val Gly Asn Ser Ala Leu Thr Leu His Trp Phe Arg
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<220>
<223> HC of provided antibody agents

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

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

Ile Gly Arg Ile Asp Pro Glu Asn Gly Asp Thr Lys Tyr Asp Pro Lys
    50                  55                  60

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

Tyr Leu His Leu Ser Ser Leu Thr Ser Gly Asp Thr Ala Val Tyr Tyr
                85                  90                  95

Cys Ser Arg Gly Trp Glu Gly Phe Ala Tyr Trp Gly Gln Gly Thr Leu
            100                 105                 110
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Val Thr Val Ser Ala
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<210> 22
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<220>
<223> LC of provided antibody agents

<400> 22

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

Gly Asn Ser Phe Met His Trp Tyr Gln Gln Lys Ala Gly Gln Pro Pro
        35   40   45

Lys Leu Leu Ile Tyr Arg Ala Ser Glu Leu Gln Trp Gly Ile Pro Ala
    50   55   60

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

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

Glu Val Pro Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg
            100   105   110

<210> 23
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<223> HC CDR1 of provided antibody agents

<400> 23

Gly Phe Asn Ile Lys Asp Thr
1   5

<210> 24
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<223> HC CDR2 of provided antibody agents

<400> 24

Asp Pro Glu Asn Gly Asp

1 5

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<212> PRT
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<223> HC CDR3 of provided antibody agents

<400> 25

Gly Trp Glu Gly Phe Ala Tyr
1 5

<210> 26
<211> 15
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<223> LC CDR1 of provided antibody agents

<400> 26

Arg Ala Ser Glu Asn Val Asp Lys Tyr Gly Asn Ser Phe Met His
1 5 10 15

<210> 27
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<223> LC CDR2 of provided antibody agents

<400> 27

Arg Ala Ser Glu Leu Gln Trp
1 5

<210> 28
<211> 9
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<400> 28

Gln Arg Ser Asn Glu Val Pro Trp Thr
1 5

<210> 29
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<400> 29

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

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

Ile Gly Arg Ile Asp Pro Glu Asn Gly Asp Thr Lys Tyr Asp Pro Lys
    50                  55                  60

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

Tyr Leu His Leu Ser Ser Leu Thr Ser Gly Asp Thr Ala Val Tyr Tyr
                85                  90                  95

Cys Ser Arg Gly Trp Glu Gly Phe Ala Tyr Trp Gly Gln Gly Thr Leu
            100                 105                 110

Val Thr Val Ser Ala
        115


<210>  30
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<220>
<223>  Chemically synthesized polypeptide

<400>  30

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

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

Gly Asn Ser Phe Met His Trp Tyr Gln Gln Lys Ala Gly Gln Pro Pro
        35                  40                  45

Lys Leu Leu Ile Tyr Arg Ala Ser Glu Leu Gln Trp Gly Ile Pro Ala
    50                  55                  60

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

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

Glu Val Pro Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg
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100 105 110

<210> 31
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<220>
<223> Chemically synthesized polypeptide

<400> 31

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

Ala Ser Val Arg Leu Ser Cys Thr Ala Ser
20 25

<210> 32
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<220>
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Tyr Met Ser Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile
1 5 10 15

Gly Arg Ile

<210> 33
<211> 41
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<220>
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<400> 33

Thr Lys Tyr Asp Pro Lys Phe Gln Gly Lys Ala Thr Ile Thr Ala Asp
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Thr Ser Ser Asn Thr Ala Tyr Leu His Leu Ser Ser Leu Thr Ser Gly
20 25 30

Asp Thr Ala Val Tyr Tyr Cys Ser Arg
35 40

<210> 34
<211> 11
<212> PRT
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<220>
<223> Chemically synthesized polypeptide

<400> 34

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ala
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<210> 35
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<220>
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<400> 35

Gly Phe Asn Ile Lys Asp Thr
1 5

<210> 36
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<220>
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<400> 36

Asp Pro Glu Asn Gly Asp
1 5

<210> 37
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<220>
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<400> 37

Gly Trp Glu Gly Phe Ala Tyr
1 5

<210> 38
<211> 23
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<220>
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<400> 38

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

Gln Arg Ala Thr Ile Ser Cys
20

<210> 39

<211> 15
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<220>
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<400> 39

Trp Tyr Gln Gln Lys Ala Gly Gln Pro Pro Lys Leu Leu Ile Tyr
1 5 10 15

<210> 40
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<220>
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<400> 40

Gly Ile Pro Ala Arg Phe Ser Gly Ser Gly Ser Arg Thr Asp Phe Thr
1 5 10 15

Leu Thr Ile Asn Pro Val Glu Ala Asp Asp Val Ala Thr Tyr Phe Cys
20 25 30

<210> 41
<211> 11
<212> PRT
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<400> 41

Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg
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<210> 42
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<400> 42

Arg Ala Ser Glu Asn Val Asp Lys Tyr Gly Asn Ser Phe Met His
1 5 10 15

<210> 43
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<220>
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Arg Ala Ser Glu Leu Gln Trp
1 5

<210> 44
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Chemically synthesized polypeptide

<400> 44

Gln Arg Ser Asn Glu Val Pro Trp Thr
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