CLAIMS

1. An isolated anti-human CD45RC antibody or binding fragment thereof, wherein said antibody or binding fragment thereof comprises:

(a) a HCVR which comprises the following three CDRs:

(i) V_H-CDR1 of sequence SEQ ID NO: 1;

(ii) V_H-CDR2 with a sequence selected from the group comprising sequences SEQ ID NOs: 4, 5, 6, 7, 8, 9, 10, 11, 100, 116, 117, 118 and 119; and

(iii) V_H-CDR3 of sequence SEQ ID NO: 3; and

(b) a LCVR which comprises the following three CDRs:

(i) V_L-CDR1 with a sequence selected from the group comprising sequences SEQ ID NO: 15 (SASSSVS-X_{12}-YMH) and SEQ ID NO: 18 (RASSSVS-X_{12}-YMH), wherein X_{12} is absent or is selected from Asn (N), Ser (S) and Gly (G);

(ii) V_L-CDR2 with a sequence selected from the group comprising sequences SEQ ID NOs: 16, 19, 20, 22, 111, 120 and 127; and

(iii) V_L-CDR3 with a sequence selected from the group comprising sequences SEQ ID NOs: 17 and 21.

2. The isolated antibody or binding fragment thereof according to claim **1**, wherein said antibody or binding fragment thereof comprises:

(a) a HCVR which comprises the following three CDRs:

(i) V_H-CDR1 of sequence SEQ ID NO: 1;

(ii) V_H-CDR2 with a sequence selected from the group comprising sequences SEQ ID NOs: 4 and 5; and

(iii) V_H-CDR3 of sequence SEQ ID NO: 3; and

(b) a LCVR which comprises the following three CDRs:

(i) V_L-CDR1 of sequence SEQ ID NO: 15, wherein X_{12} is absent;

(ii) V_L-CDR2 of sequence SEQ ID NO: 16; and

(iii) V_L-CDR3 of sequence SEQ ID NO: 17.

3. The isolated antibody or binding fragment thereof according to claim **1** or **2**, wherein said antibody or binding fragment thereof comprises:

(a) a HCVR which comprises the following three CDRs:

(i) V_H-CDR1 of sequence SEQ ID NO: 1;

(ii) V_H-CDR2 of sequence 4; and

(iii) V_H-CDR3 of sequence SEQ ID NO: 3; and

(b) a LCVR which comprises the following three CDRs:

(i) V_L-CDR1 of sequence SEQ ID NO: 15, wherein X_{12} is absent;

(ii) V_L-CDR2 of sequence SEQ ID NO: 16; and

(iii) V_L-CDR3 of sequence SEQ ID NO: 17.

4. The isolated antibody or binding fragment thereof according to claim **1**, wherein said antibody or binding fragment thereof comprises:

(a) a HCVR which comprises the following three CDRs:

(i) V_H-CDR1 of sequence SEQ ID NO: 1;

(ii) V_H-CDR2 with a sequence selected from the group comprising sequences SEQ ID NOs: 4, 6, and 100; and

(iii) V_H-CDR3 of sequence SEQ ID NO: 3; and

(b) a LCVR which comprises the following three CDRs:

(i) V_L-CDR1 with a sequence selected from the group comprising sequences SEQ ID NOs: 15 and 18, wherein X_{12} is absent;

(ii) V_L-CDR2 of sequence SEQ ID NO: 16; and

(iii) V_L-CDR3 of sequence SEQ ID NO: 17.

5. The isolated antibody or binding fragment thereof according to claim **1**, wherein said antibody or binding fragment thereof comprises:

(a) a HCVR which comprises the following three CDRs:

(i) V_H-CDR1 of sequence SEQ ID NO: 1;

(ii) V_H-CDR2 with a sequence selected from the group comprising sequences SEQ ID NOs: 4 and 118; and

(iii) V_H-CDR3 of sequence SEQ ID NO: 3; and

(b) a LCVR which comprises the following three CDRs:

(i) V_L-CDR1 of sequence SEQ ID NO: 15, wherein X_{12} is absent;

(ii) V_L-CDR2 of sequence SEQ ID NO: 120; and

(iii) V_L-CDR3 of sequence SEQ ID NO: 17.

6. The isolated antibody or binding fragment thereof according to any one of claims **1** to **5**, wherein said antibody or binding fragment thereof comprises:

1) a HCVR of sequence SEQ ID NO: 61 and a LCVR of sequence SEQ ID NO: 81;

2) a HCVR of sequence SEQ ID NO: 62 and a LCVR of sequence SEQ ID NO: 82;

3) a HCVR of sequence SEQ ID NO: 62 and a LCVR of sequence SEQ ID NO: 83;

4) a HCVR of sequence SEQ ID NO: 62 and a LCVR of sequence SEQ ID NO: 84;

5) a HCVR of sequence SEQ ID NO: 63 and a LCVR of sequence SEQ ID NO: 82;

6) a HCVR of sequence SEQ ID NO: 63 and a LCVR of sequence SEQ ID NO: 83;

7) a HCVR of sequence SEQ ID NO: 63 and a LCVR of sequence SEQ ID NO: 84;

8) a HCVR of sequence SEQ ID NO: 64 and a LCVR of sequence SEQ ID NO: 82;

9) a HCVR of sequence SEQ ID NO: 64 and a LCVR of sequence SEQ ID NO: 83;

10) a HCVR of sequence SEQ ID NO: 64 and a LCVR of sequence SEQ ID NO: 84;

11) a HCVR of sequence SEQ ID NO: 101 and a LCVR of sequence SEQ ID NO: 85;

12) a HCVR of sequence SEQ ID NO: 101 and a LCVR of sequence SEQ ID NO: 103;

13) a HCVR of sequence SEQ ID NO: 65 and a LCVR of sequence SEQ ID NO: 85;

14) a HCVR of sequence SEQ ID NO: 65 and a LCVR of sequence SEQ ID NO: 103;

15) a HCVR of sequence SEQ ID NO: 62 and a LCVR of sequence SEQ ID NO: 85;

16) a HCVR of sequence SEQ ID NO: 101 and a LCVR of sequence SEQ ID NO: 82;

17) a HCVR of sequence SEQ ID NO: 121 and a LCVR of sequence SEQ ID NO: 85;

18) a HCVR of sequence SEQ ID NO: 122 and a LCVR of sequence SEQ ID NO: 85;

19) a HCVR of sequence SEQ ID NO: 123 and a LCVR of sequence SEQ ID NO: 85;

20) a HCVR of sequence SEQ ID NO: 124 and a LCVR of sequence SEQ ID NO: 85;

21) a HCVR of sequence SEQ ID NO: 63 and a LCVR of sequence SEQ ID NO: 85;

22) a HCVR of sequence SEQ ID NO: 67 and a LCVR of sequence SEQ ID NO: 85;

23) a HCVR of sequence SEQ ID NO: 67 and a LCVR of sequence SEQ ID NO: 103; or

24) a HCVR of sequence SEQ ID NO: 61 and a LCVR of sequence SEQ ID NO: 113; or

25) a HCVR of sequence SEQ ID NO: 61 and a LCVR of sequence SEQ ID NO: 126; or

26) a HCVR and a LCVR comprising a sequence of the non-CDR regions sharing at least 70% of identity with the sequence of the non-CDR regions of the HCVR and LCVR according to 1) to 25).

7. The isolated antibody or binding fragment thereof according to claim **1**, wherein said antibody or binding fragment thereof comprises:

(a) a HCVR which comprises the following three CDRs:

(i) V_H-CDR1 of sequence SEQ ID NO: 1;

(ii) V_H-CDR2 with a sequence selected from the group comprising sequences SEQ ID NOs: 4, 5, 6, 7, 8, 9, 10, 11, 100, 116, 117, 118 and 119; and

(iii) V_H-CDR3 of sequence SEQ ID NO: 3; and

(b) a LCVR which comprises the following three CDRs:

(i) V_L-CDR1 with a sequence selected from the group comprising sequences SEQ ID NOs: 15 and 18, wherein X_{12} in SEQ ID NOs: 15 and 18 is selected from Asn (N), Ser (S) and Gly (G);

(ii) V_L-CDR2 with a sequence selected from the group comprising sequences SEQ ID NOs: 16, 19, 20, 22, 111, 120 and 127; and

(iii) V_L-CDR3 with a sequence selected from the group comprising sequences SEQ ID NOs: 17 and 21;

preferably wherein the amino acid residue at Kabat position L71 of the LCVR is Phe (F).

8. A nucleic acid encoding the isolated antibody or binding fragment thereof according to any one of claims **1** to **7**.

9. An expression vector comprising the nucleic acid according to claim **8**.

10. A cell comprising the nucleic acid according to claim **8** or the expression vector according to claim **9**.

11. A pharmaceutical composition comprising the isolated antibody or binding fragment thereof according to any one of claims **1** to **7**, the nucleic acid according to claim **8**, the expression vector according to claim **9** or the cell according to claim **10**, and at least one pharmaceutically acceptable excipient.

12. Use of the isolated antibody or binding fragment thereof according to any one of claims **1** to **7**, the nucleic acid according to claim **8**, the expression vector according to claim **9**, the cell according to claim **10** or the pharmaceutical composition according to claim **11**, in the manufacture of a medicament.

13. Use of the isolated antibody or binding fragment thereof according to any one of claims **1** to **7**, the nucleic acid according to claim **8**, the expression vector according to claim **9**, the cell according to claim **10** or the pharmaceutical composition according to claim **11**, in the manufacture of a medicament for :

- inducing immune tolerance in a subject in need thereof; and/or

- preventing and/or reducing transplant rejections.

14. Use of the isolated antibody or binding fragment thereof according to any one of claims **1** to **7**, the nucleic acid according to claim **8**, the expression vector according to claim **9**, the cell according to claim **10** or the pharmaceutical composition according to claim **11**, in the manufacture of a medicament for preventing, reducing and/or treating $CD45RC^{high}$-related conditions.

15. The use according to claim **14**, wherein the $CD45RC^{high}$-related condition is selected from the group comprising autoimmune diseases, undesired immune responses, monogenic diseases, lymphoma and cancer.

16. Use of the isolated antibody or binding fragment thereof according to any one of claims **1** to **7**, the nucleic acid according to claim **8**, the expression vector according to claim **9**, the composition according to claim **10** or the pharmaceutical composition according to claim **11**, in the manufacture of a medicament for preventing and/or treating graft-versus-host disease (GVHD).

17. An *in vitro* method for detecting or quantifying hCD45RC in a sample, cell, tissue or organ, comprising contacting said sample, cell, tissue or organ with the isolated antibody or binding fragment thereof according to any one of claims **1** to **7.**

18. An *in vitro* method according to claim 17, wherein the isolated antibody or binding fragment thereof is labelled.