WHAT IS CLAIMED:

1. A chimeric antigen receptor (CAR), comprising:

(a) an extracellular antigen binding domain comprising an anti-CD20 single domain antibody (sdAb), an anti-CD19 sdAb and an anti-CD22 sdAb;

(b) a transmembrane domain; and

(c) an intracellular signaling domain,

wherein the anti-CD20 sdAb is closer to the transmembrane domain than the anti-CD19 sdAb or the anti-CD22 sdAb to the transmembrane domain.

2. The CAR of claim 1, wherein the anti-CD19 sdAb is at the N-terminus of the anti-CD22 sdAb.

3. The CAR of claim 1, wherein the anti-CD19 sdAb is at the C-terminus of the anti-CD22 sdAb.

4. A chimeric antigen receptor (CAR), comprising:

(a) an extracellular antigen binding domain comprising an anti-CD20 single domain antibody (sdAb), an anti-CD19 sdAb and an anti-CD22 sdAb;

(b) a transmembrane domain; and

(c) an intracellular signaling domain,

wherein the anti-CD19 sdAb is closer to the transmembrane domain than the anti-CD20 sdAb or the anti-CD22 sdAb to the transmembrane domain.

5. The CAR of claim 4, wherein the anti-CD20 sdAb is at the N-terminus of the anti-CD22 sdAb.

6. The CAR of claim 4, wherein the anti-CD20 sdAb is at the C-terminus of the anti-CD22 sdAb.

7. A chimeric antigen receptor (CAR), comprising:

(a) an extracellular antigen binding domain comprising an anti-CD20 single domain antibody (sdAb), an anti-CD19 sdAb and an anti-CD22 sdAb;

(b) a transmembrane domain; and

(c) an intracellular signaling domain,

wherein the anti-CD22 sdAb is closer to the transmembrane domain than the anti-CD19 sdAb or the anti-CD20 sdAb to the transmembrane domain.

8. The CAR of claim 7, wherein the anti-CD19 sdAb is at the N-terminus of the anti-CD20 sdAb.

9. The CAR of claim 7, wherein the anti-CD19 sdAb is at the C-terminus of the anti-CD20

sdAb.

10. The CAR of any one of claims 1 to 9, wherein the anti-CD20 sdAb, the anti-CD19 sdAb and the anti-CD22 sdAb are fused to each other directly or via one or more peptide linker(s); and wherein the one or more peptide linker(s) comprises no more than 20, 19, 18, 17, 16, 15, 14, 13, 12, 11, 10, 9, 8, 7, 6, or 5 amino acids.

11. The CAR of claim 10, wherein the one or more peptide linker(s) is (GGGGS)n, n is 1, 2, 3, or 4.

12. A chimeric antigen receptor (CAR), comprising:

(a) an extracellular antigen binding domain comprising an anti-CD20 single domain antibody (sdAb), an anti-CD19 sdAb and an anti-CD22 sdAb;

(b) a transmembrane domain; and

(c) an intracellular signaling domain;

wherein the anti-CD20 sdAb, the anti-CD19 sdAb and the anti-CD22 sdAb are fused to each other directly or via one or more peptide linker(s); and

wherein the one or more peptide linker(s) comprises no more than 20, 19, 18, 17, 16, 15, 14, 13, 12, 11, 10, 9, 8, 7, 6, or 5 amino acids.

13. The CAR of claim 12, wherein the one or more peptide linker(s) is (GGGGS)n, n is 1, 2, 3, or 4.

14. The CAR of any one of claims 1 to 13, wherein:

(I) the anti-CD20 sdAb comprises:

(i) a CDR1 comprising the amino acid sequence of SEQ ID NO: 1 or 310; a CDR2 comprising the amino acid sequence of SEQ ID NO: 2; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 3;

(ii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 4; a CDR2 comprising the amino acid sequence of SEQ ID NO: 5; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 6;

(iii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 1 or 310; a CDR2 comprising the amino acid sequence of SEQ ID NO: 7; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 8;

(iv) a CDR1 comprising the amino acid sequence of SEQ ID NO: 4; a CDR2 comprising the amino acid sequence of SEQ ID NO: 9; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 10;

(v) a CDR1 comprising the amino acid sequence of SEQ ID NO: 11 or 311; a CDR2 comprising the amino acid sequence of SEQ ID NO: 12; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 8;

(vi) a CDR1 comprising the amino acid sequence of SEQ ID NO: 13; a CDR2 comprising the amino acid sequence of SEQ ID NO: 9; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 10;

(vii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 14 or 312; a CDR2 comprising the amino acid sequence of SEQ ID NO: 15; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 16;

(viii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 17; a CDR2 comprising the amino acid sequence of SEQ ID NO: 18; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 19;

(ix) a CDR1 comprising the amino acid sequence of SEQ ID NO: 20 or 312; a CDR2 comprising the amino acid sequence of SEQ ID NO: 21; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 16;

(x) a CDR1 comprising the amino acid sequence of SEQ ID NO: 22; a CDR2 comprising the amino acid sequence of SEQ ID NO: 23; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 19;

(xi) a CDR1 comprising the amino acid sequence of SEQ ID NO: 24 or 313; a CDR2 comprising the amino acid sequence of SEQ ID NO: 25; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 26;

(xii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 27; a CDR2 comprising the amino acid sequence of SEQ ID NO: 28; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 29;

(xiii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 14 or 312; a CDR2 comprising the amino acid sequence of SEQ ID NO: 30; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 16;

(xiv) a CDR1 comprising the amino acid sequence of SEQ ID NO: 17; a CDR2 comprising the amino acid sequence of SEQ ID NO: 31; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 19;

(xv) a CDR1 comprising the amino acid sequence of SEQ ID NO: 1 or 310; a CDR2 comprising the amino acid sequence of SEQ ID NO: 32; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 3;

(xvi) a CDR1 comprising the amino acid sequence of SEQ ID NO: 4; a CDR2 comprising the amino acid sequence of SEQ ID NO: 33; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 6;

(xvii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 20 or 312; a CDR2 comprising the amino acid sequence of SEQ ID NO: 34; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 16;

(xviii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 22; a CDR2 comprising the amino acid sequence of SEQ ID NO: 35; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 19;

(xix) a CDR1 comprising the amino acid sequence of SEQ ID NO: 20 or 312; a CDR2 comprising the amino acid sequence of SEQ ID NO: 36; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 16;

(xx) a CDR1 comprising the amino acid sequence of SEQ ID NO: 20 or 312; a CDR2 comprising the amino acid sequence of SEQ ID NO: 37; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 16; or

(xxi) a CDR1 comprising the amino acid sequence of SEQ ID NO: 20 or 312; a CDR2 comprising the amino acid sequence of SEQ ID NO: 38; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 16;

(xxii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 283 or 314; a CDR2 comprising the amino acid sequence of SEQ ID NO: 284; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 285;

(xx) a CDR1 comprising the amino acid sequence of SEQ ID NO: 286; a CDR2 comprising the amino acid sequence of SEQ ID NO: 287; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 288;

(xxi) a CDR1 comprising the amino acid sequence of SEQ ID NO: 289 or 315; a CDR2 comprising the amino acid sequence of SEQ ID NO: 290; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 291;

(xxii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 292; a CDR2 comprising the amino acid sequence of SEQ ID NO: 293; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 294;

(xxiii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 295 or 312; a CDR2 comprising the amino acid sequence of SEQ ID NO: 296; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 297; or

(xxiv) a CDR1 comprising the amino acid sequence of SEQ ID NO: 298; a CDR2 comprising the amino acid sequence of SEQ ID NO: 299; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 300;

(II) the anti-CD19 sdAb comprises:

(i) a CDR1 comprising the amino acid sequence of SEQ ID NO: 73 or 316; a CDR2 comprising the amino acid sequence of SEQ ID NO: 74; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 75;

(ii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 76; a CDR2 comprising the amino acid sequence of SEQ ID NO: 77; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 78;

(iii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 79 or 317; a CDR2 comprising the amino acid sequence of SEQ ID NO: 80; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 81;

(iv) a CDR1 comprising the amino acid sequence of SEQ ID NO: 82; a CDR2 comprising the amino acid sequence of SEQ ID NO: 83; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 84;

(v) a CDR1 comprising the amino acid sequence of SEQ ID NO: 73 or 316; a CDR2 comprising the amino acid sequence of SEQ ID NO: 307; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 75; or

(vi) a CDR1 comprising the amino acid sequence of SEQ ID NO: 76; a CDR2 comprising the amino acid sequence of SEQ ID NO: 77; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 78;

(III) the anti-CD22 sdAb comprises:

(i) a CDR1 comprising the amino acid sequence of SEQ ID NO: 93 or 318; a CDR2 comprising the amino acid sequence of SEQ ID NO: 94; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 95;

(ii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 96; a CDR2 comprising the amino acid sequence of SEQ ID NO: 97; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 98;

(iii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 99 or 319; a CDR2 comprising the amino acid sequence of SEQ ID NO: 100; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 101;

(iv) a CDR1 comprising the amino acid sequence of SEQ ID NO: 102; a CDR2 comprising the amino acid sequence of SEQ ID NO: 103; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 104;

(v) a CDR1 comprising the amino acid sequence of SEQ ID NO: 105 or 320; a CDR2 comprising the amino acid sequence of SEQ ID NO: 106; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 107;

(vi) a CDR1 comprising the amino acid sequence of SEQ ID NO: 108; a CDR2 comprising the amino acid sequence of SEQ ID NO: 109; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 110;

(vii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 111 or 321; a CDR2 comprising the amino acid sequence of SEQ ID NO: 112; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 113;

(viii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 114; a CDR2 comprising the amino acid sequence of SEQ ID NO: 115; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 116;

(ix) a CDR1 comprising the amino acid sequence of SEQ ID NO: 117 or 322; a CDR2 comprising the amino acid sequence of SEQ ID NO: 118; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 119;

(x) a CDR1 comprising the amino acid sequence of SEQ ID NO: 120; a CDR2 comprising the amino acid sequence of SEQ ID NO: 121; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 122;

(xi) a CDR1 comprising the amino acid sequence of SEQ ID NO: 123 or 323; a CDR2 comprising the amino acid sequence of SEQ ID NO: 124; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 125; or

(xii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 126; a CDR2 comprising the amino acid sequence of SEQ ID NO: 127; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 128.

15. A chimeric antigen receptor (CAR), comprising:

(a) an extracellular antigen binding domain comprising at least two of an anti-CD20 single domain antibody (sdAb), an anti-CD19 sdAb and an anti-CD22 sdAb;

(b) a transmembrane domain; and

(c) an intracellular signaling domain,

wherein:

(I) the anti-CD20 sdAb comprises:

(i) a CDR1 comprising the amino acid sequence of SEQ ID NO: 1 or 310; a CDR2 comprising the amino acid sequence of SEQ ID NO: 2; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 3;

(ii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 4; a CDR2 comprising the amino acid sequence of SEQ ID NO: 5; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 6;

(iii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 1 or 310; a CDR2 comprising the amino acid sequence of SEQ ID NO: 7; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 8;

(iv) a CDR1 comprising the amino acid sequence of SEQ ID NO: 4; a CDR2 comprising the amino acid sequence of SEQ ID NO: 9; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 10;

(v) a CDR1 comprising the amino acid sequence of SEQ ID NO: 11 or 311; a CDR2 comprising the amino acid sequence of SEQ ID NO: 12; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 8;

(vi) a CDR1 comprising the amino acid sequence of SEQ ID NO: 13; a CDR2 comprising the amino acid sequence of SEQ ID NO: 9; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 10;

(vii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 14 or 312; a CDR2 comprising the amino acid sequence of SEQ ID NO: 15; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 16;

(viii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 17; a CDR2 comprising the amino acid sequence of SEQ ID NO: 18; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 19;

(ix) a CDR1 comprising the amino acid sequence of SEQ ID NO: 20 or 312; a CDR2 comprising the amino acid sequence of SEQ ID NO: 21; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 16;

(x) a CDR1 comprising the amino acid sequence of SEQ ID NO: 22; a CDR2 comprising the amino acid sequence of SEQ ID NO: 23; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 19;

(xi) a CDR1 comprising the amino acid sequence of SEQ ID NO: 24 or 313; a CDR2 comprising the amino acid sequence of SEQ ID NO: 25; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 26;

(xii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 27; a CDR2 comprising the amino acid sequence of SEQ ID NO: 28; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 29;

(xiii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 14 or 312; a CDR2 comprising the amino acid sequence of SEQ ID NO: 30; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 16;

(xiv) a CDR1 comprising the amino acid sequence of SEQ ID NO: 17; a CDR2 comprising the amino acid sequence of SEQ ID NO: 31; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 19;

(xv) a CDR1 comprising the amino acid sequence of SEQ ID NO: 1 or 310; a CDR2 comprising the amino acid sequence of SEQ ID NO: 32; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 3;

(xvi) a CDR1 comprising the amino acid sequence of SEQ ID NO: 4; a CDR2 comprising the amino acid sequence of SEQ ID NO: 33; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 6;

(xvii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 20 or 312; a CDR2 comprising the amino acid sequence of SEQ ID NO: 34; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 16;

(xviii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 22; a CDR2 comprising the amino acid sequence of SEQ ID NO: 35; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 19;

(xix) a CDR1 comprising the amino acid sequence of SEQ ID NO: 20 or 312; a CDR2 comprising the amino acid sequence of SEQ ID NO: 36; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 16;

(xx) a CDR1 comprising the amino acid sequence of SEQ ID NO: 20 or 312; a CDR2 comprising the amino acid sequence of SEQ ID NO: 37; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 16;

(xxi) a CDR1 comprising the amino acid sequence of SEQ ID NO: 20 or 312; a CDR2 comprising the amino acid sequence of SEQ ID NO: 38; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 16; or

(xxii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 283 or 314; a CDR2 comprising the amino acid sequence of SEQ ID NO: 284; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 285;

(xx) a CDR1 comprising the amino acid sequence of SEQ ID NO: 286; a CDR2 comprising the amino acid sequence of SEQ ID NO: 287; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 288;

(xxi) a CDR1 comprising the amino acid sequence of SEQ ID NO: 289 or 315; a CDR2 comprising the amino acid sequence of SEQ ID NO: 290; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 291;

(xxii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 292; a CDR2 comprising the amino acid sequence of SEQ ID NO: 293; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 294;

(xxiii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 295 or 312; a CDR2 comprising the amino acid sequence of SEQ ID NO: 296; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 297; or

(xxiv) a CDR1 comprising the amino acid sequence of SEQ ID NO: 298; a CDR2 comprising the amino acid sequence of SEQ ID NO: 299; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 300;

(II) the anti-CD19 sdAb comprises:

(i) a CDR1 comprising the amino acid sequence of SEQ ID NO: 73 or 316; a CDR2 comprising the amino acid sequence of SEQ ID NO: 74; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 75;

(ii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 76; a CDR2 comprising the amino acid sequence of SEQ ID NO: 77; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 78;

(iii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 79 or 317; a CDR2 comprising the amino acid sequence of SEQ ID NO: 80; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 81;

(iv) a CDR1 comprising the amino acid sequence of SEQ ID NO: 82; a CDR2 comprising the amino acid sequence of SEQ ID NO: 83; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 84;

(v) a CDR1 comprising the amino acid sequence of SEQ ID NO: 73 or 316; a CDR2 comprising the amino acid sequence of SEQ ID NO: 307; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 75; or

(vi) a CDR1 comprising the amino acid sequence of SEQ ID NO: 76; a CDR2 comprising the amino acid sequence of SEQ ID NO: 77; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 78;

(III) the anti-CD22 sdAb comprises:

(i) a CDR1 comprising the amino acid sequence of SEQ ID NO: 93 or 318; a CDR2 comprising the amino acid sequence of SEQ ID NO: 94; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 95;

(ii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 96; a CDR2 comprising the amino acid sequence of SEQ ID NO: 97; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 98;

(iii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 99 or 319; a CDR2 comprising the amino acid sequence of SEQ ID NO: 100; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 101;

(iv) a CDR1 comprising the amino acid sequence of SEQ ID NO: 102; a CDR2 comprising the amino acid sequence of SEQ ID NO: 103; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 104;

(v) a CDR1 comprising the amino acid sequence of SEQ ID NO: 105 or 320; a CDR2 comprising the amino acid sequence of SEQ ID NO: 106; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 107;

(vi) a CDR1 comprising the amino acid sequence of SEQ ID NO: 108; a CDR2 comprising the amino acid sequence of SEQ ID NO: 109; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 110;

(vii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 111 or 321; a CDR2 comprising the amino acid sequence of SEQ ID NO: 112; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 113;

(viii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 114; a CDR2 comprising the amino acid sequence of SEQ ID NO: 115; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 116;

(ix) a CDR1 comprising the amino acid sequence of SEQ ID NO: 117 or 322; a CDR2 comprising the amino acid sequence of SEQ ID NO: 118; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 119;

(x) a CDR1 comprising the amino acid sequence of SEQ ID NO: 120; a CDR2 comprising the amino acid sequence of SEQ ID NO: 121; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 122;

(xi) a CDR1 comprising the amino acid sequence of SEQ ID NO: 123 or 323; a CDR2 comprising the amino acid sequence of SEQ ID NO: 124; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 125; or

(xii) a CDR1 comprising the amino acid sequence of SEQ ID NO: 126; a CDR2 comprising the amino acid sequence of SEQ ID NO: 127; and a CDR3 comprising the amino acid sequence of SEQ ID NO: 128.

16. A chimeric antigen receptor (CAR), comprising:

(a) an extracellular antigen binding domain comprising at least two of an anti-CD20

single domain antibody (sdAb), an anti-CD19 sdAb and an anti-CD22 sdAb;

(b) a transmembrane domain; and

(c) an intracellular signaling domain,

wherein:

(I) the anti-CD20 sdAb comprises:

(i) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 39;

(ii) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 40;

(iii) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 41;

(iv) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 42;

(v) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 43;

(vi) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 44;

(vii) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 45;

(viii) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 46;

(ix) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 47;

(x) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 48;

(xi) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 49;

(xii) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 50;

(xiii) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 51;

(xiv) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 52;

(xv) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 53;

(xvi) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 54;

(xvii) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 55;

(xviii) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 301;

(xix) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 302; or

(xx) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 303;

(II) the anti-CD19 sdAb comprises:

(i) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 85;

(ii) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 86;

(iii) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 87;

(iv) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 88; or

(v) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 308; and

(III) the anti-CD22 sdAb comprises:

(i) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 129;

(ii) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 130;

(iii) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 131;

(iv) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 132;

(v) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 133;

(vi) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 134; or

(vii) a CDR1, a CDR2, and a CDR3 having the amino acid sequences of the CDR1, CDR2, and CDR3, respectively, as set forth in SEQ ID NO: 135.

17. The CAR of claim 16, wherein the CDR1, CDR2 or CDR3 are determined according to the Kabat numbering scheme, the IMGT numbering scheme, the AbM numbering scheme, the Chothia numbering scheme, the Contact numbering scheme, or a combination thereof.

18. The CAR of any one of claims 15 to 17, wherein the CAR comprises: (1) the anti-CD20 sdAb and the anti-CD19 sdAb; (2) the anti-CD20 sdAb and the anti-CD22 sdAb; (3) the anti-CD19 sdAb and the anti-CD22 sdAb; or (4) the anti-CD20 sdAb, the anti-CD19 sdAb, and the anti-CD22 sdAb.

19. The CAR of any one of claims 1 to 18, wherein the anti-CD20 sdAb, the anti-CD19 sdAb, and the anti-CD22 sdAb are each independently a camelid sdAb or a humanized sdAb.

20. The CAR of any of one of claims 1 to 19, wherein:

(I) the anti-CD20 sdAb comprises an amino acid sequence of SEQ ID NO: 39, SEQ ID NO: 40, SEQ ID NO: 41, SEQ ID NO: 42, SEQ ID NO: 43, SEQ ID NO: 44, SEQ ID NO: 45, SEQ ID NO: 46, SEQ ID NO: 47, SEQ ID NO: 48, SEQ ID NO: 49, SEQ ID NO: 50, SEQ ID NO: 51, SEQ ID NO: 52, SEQ ID NO: 53, SEQ ID NO: 54, SEQ ID NO: 55, SEQ ID NO: 301, SEQ ID NO: 302 or SEQ ID NO: 303;

(II) the anti-CD19 sdAb comprises an amino acid sequence of SEQ ID NO: 85, SEQ ID NO: 86, SEQ ID NO: 87, SEQ ID NO: 88 or SEQ ID NO: 308; and

(III) the anti-CD22 sdAb comprises an amino acid sequence of SEQ ID NO: 129, SEQ ID NO: 130, SEQ ID NO: 131, SEQ ID NO: 132, SEQ ID NO: 133, SEQ ID NO: 134, or SEQ ID NO: 135.

21. The CAR of any one of claims 1 to 19, wherein:

(I) the anti-CD20 sdAb comprises an amino acid sequence having at least 75%, 80%, 85%, 90%, 95%, 96%, 97%, 98%, 99%, or more sequence identity with the sequence of SEQ ID NO: 39, SEQ ID NO: 40, SEQ ID NO: 41, SEQ ID NO: 42, SEQ ID NO: 43, SEQ ID NO: 44, SEQ ID NO: 45, SEQ ID NO: 46, SEQ ID NO: 47, SEQ ID NO: 48, SEQ ID NO: 49, SEQ ID NO: 50, SEQ ID NO: 51, SEQ ID NO: 52, SEQ ID NO: 53, SEQ ID NO: 54, SEQ ID NO: 55, SEQ ID NO: 301, SEQ ID NO: 302, or SEQ ID NO: 303;

(II) the anti-CD19 sdAb comprises an amino acid sequence having at least 75%, 80%, 85%, 90%, 95%, 96%, 97%, 98%, 99%, or more sequence identity with the sequence of SEQ ID NO: 85, SEQ ID NO: 86, SEQ ID NO: 87, SEQ ID NO: 88 or SEQ ID NO: 308; and

(III) the anti-CD22 sdAb comprises an amino acid sequence having at least 75%, 80%, 85%, 90%, 95%, 96%, 97%, 98%, 99%, or more sequence identity with the sequence of SEQ ID

NO: 129, SEQ ID NO: 130, SEQ ID NO: 131, SEQ ID NO: 132, SEQ ID NO: 133, SEQ ID NO: 134, or SEQ ID NO: 135.

22. The CAR of any one of claims 1 to 21, wherein the transmembrane domain is derived from a molecule selected from a group consisting of CD8α, CD4, CD28, CD137, CD80, CD86, CD152, and PD1.

23. The CAR of claim 22, wherein the transmembrane domain is derived from CD8α.

24. The CAR of any one of claims 1 to 23, wherein the intracellular signaling domain comprises a primary intracellular signaling domain of an immune effector cell.

25. The CAR of claim 24, wherein the primary intracellular signaling domain is derived from CD3ζ.

26. The CAR of claim 24 or claim 25, wherein the intracellular signaling domain further comprises a co-stimulatory signaling domain.

27. The CAR of claim 26, wherein the co-stimulatory signaling domain is derived from a co-stimulatory molecule selected from the group consisting of CD27, CD28, CD137, OX40, CD30, CD40, CD3, LFA-1, CD2, CD7, LIGHT, NKG2C, B7-H3, ligands of CD83 and combinations thereof.

28. The CAR of claim 27, wherein the co-stimulatory signaling domain is derived from CD137.

29. The CAR of any one of claims 1 to 28, further comprising a hinge domain located between the C-terminus of the extracellular antigen binding domain and the N-terminus of the transmembrane domain.

30. The CAR of claim 29, wherein the hinge domain is derived from CD8α.

31. The CAR of any one of claims 1 to 30, further comprising a signal peptide located at the N-terminus of the polypeptide.

32. The CAR of claim 31, wherein the signal peptide is derived from CD8α.

33. A chimeric antigen receptor (CAR), comprising (i) an amino acid sequence selected from the group consisting of SEQ ID NOs:174-226; or (ii) an amino acid sequence having at least 75%, 80%, 85%, 90%, 95%, 96%, 97%, 98%, 99%, or more sequence identity with the sequence selected from a group consisting of SEQ ID NOs: 174-226.

34. An isolated nucleic acid comprising a nucleic acid sequence encoding the CAR of any one of claims 1 to 33.

35. A vector comprising the isolated nucleic acid of claim 34.

36. An engineered immune effector cell, comprising the CAR of any one of claims 1 to 33, the isolated nucleic acid of claim 34, or the vector of claim 35.

37. The engineered immune effector cell of claim 36, wherein the immune effector cell is a T cell or B cell.

38. A pharmaceutical composition, comprising the engineered immune effector cell of claim 36 or claim 37, or the vector of claim 35, and a pharmaceutically acceptable excipient.

39. Use of the engineered immune effector cell of claim 36 or claim 37, or the pharmaceutical composition of claim 38, in the manufacture of a medicament for treating a disease or disorder in a subject.

40. The use of claim 39, wherein the disease or disorder is a B cell associated disease or disorder, a CD19 associated disease or disorder, a CD20 associated disease or disorder and/or a CD22 associated disease or disorder.

41. The use of claim 40, wherein the disease or disorder is cancer.

42. The use of claim 41, wherein the disease or disorder is a B cell malignancy.

43. The use of claim 42, wherein the B cell malignancy is a B cell leukemia or B cell lymphoma.

44. The use of claim 39, wherein the disease or disorder is selected from a group consisting of marginal zone lymphoma (*e.g.*, splenic marginal zone lymphoma), diffuse large B cell lymphoma (DLBCL), mantle cell lymphoma (MCL), primary central nervous system (CNS) lymphoma, primary mediastinal B cell lymphoma (PMBL), small lymphocytic lymphoma (SLL), B cell prolymphocytic leukemia (B-PLL), follicular lymphoma (FL), burkitt lymphoma, primary intraocular lymphoma, chronic lymphocytic leukemia (CLL), acute lymphoblastic leukemia (ALL), hairy cell leukemia (HCL), precursor B lymphoblastic leukemia, non-hodgkin lymphoma (NHL), high-grade B-cell lymphoma (HGBL), and multiple myelomia (MM).

45. The use of claim 39, wherein the disease or disorder is an autoimmune and/or inflammatory disease.

46. The use of claim 45, wherein the autoimmune and/or inflammatory disease is associated with inappropriate or enhanced B cell numbers and/or activation.

47. The use of any one of claims 39 to 46, wherein the use further comprises detecting and/or measuring the levels of CD19, CD20, and/or CD22 expressed on a cancer cell obtained from the subject prior to administration to the subject an effective amount of the engineered immune

effector cell.

48. The use of claim 47, wherein the levels of CD19, CD20, and/or CD22 expressed on the cancer cell obtained from the subject determines the selection of an engineered immune effector cell expressing a CAR that is suitable for treating the cancer.