rector.

The presently disclosed subject matter further provides a chimeric antigen receptor (CAR), comprising an extracellular antigen-binding domain that binds to Fc Receptor-like 5 (FcRL5), a transmembrane domain and an intracellular domain, wherein the extracellular antigen-binding domain comprises:

(aa) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:3, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:4;

(ab) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:7, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:8;

(ac) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:11, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:12;

(ad) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:15, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:16;

(ae) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:19, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:20;

(af) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:23, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:24;

(ag) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:27, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:28;

(ah) a light chain variable region comprising a CDR1, a CDR2, and a CDR3

domains of the light chain variable region sequence set forth in SEQ ID NO:31, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:32;

(ai) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:35, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:36;

(aj) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:39, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:40;

(ak) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:43, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:44;

(al) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:47, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:48;

(am) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:51, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:52;

(an) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:55, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:56;

(ao) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:59, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:60;

(ap) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:63, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of

the heavy chain variable region sequence set forth in SEQ ID NO:64;

(aq) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:67, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:68;

(ar) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:71, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:72;

(as) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:75, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:76;

(at) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:79, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:80;

(au) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:83, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:84;

(av) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:87, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:88;

(aw) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:91, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:92;

(ax) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:95, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:96;

(ay) a light chain variable region comprising a CDR1, a CDR2, and a CDR3

domains of the light chain variable region sequence set forth in SEQ ID NO:99, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:100;

(az) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:103, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:104;

(ba) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:107, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:108;

(bb) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:111, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:112;

(bc) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:115, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:116;

(bd) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:119, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:120;

(be) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:123, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:124;

(bf) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:127, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:128;

(bg) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:131, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of

the heavy chain variable region sequence set forth in SEQ ID NO:132;

(bh) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:135, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:136;

(bi) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:139, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:140;

(bj) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:143, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:144;

(bk) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:147, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:148;

(bl) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:151, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:152;

(bm) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:155, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:156;

(bn) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:159, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:160;

(bo) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:163, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:164;

(bp) a light chain variable region comprising a CDR1, a CDR2, and a CDR3

domains of the light chain variable region sequence set forth in SEQ ID NO:167, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:168;

(bq) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:171, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:172;

(br) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:175, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:176;

(bs) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:179, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:180;

(bt) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:183, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:184;

(bu) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:187, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:188;

(bv) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:191, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:192;

(bw) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:195, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:196;

(bx) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:199, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of

the heavy chain variable region sequence set forth in SEQ ID NO:200;

(by) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:203, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:204;

(bz) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:207, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:208;

(ca) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:211, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:212;

(cb) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:215, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:216;

(cc) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:219, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:220;

(cd) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:223, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:224;

(ce) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:227, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:228;

(cf) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:231, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:232;

(cg) a light chain variable region comprising a CDR1, a CDR2, and a CDR3

domains of the light chain variable region sequence set forth in SEQ ID NO:235, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:236;

(ch) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:239, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:240;

(ci) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:243, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:244;

(cj) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:247, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:248;

(ck) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:251, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:252;

(cl) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:255, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:256;

(cm) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:259, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:260;

(cn) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:263, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:264;

(co) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:267, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of

the heavy chain variable region sequence set forth in SEQ ID NO:268;

(cp) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:271, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:272;

(cq) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:275, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:276;

(cr) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:279, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:280;

(cs) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:283, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:284;

(ct) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:287, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:288;

(cu) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:291, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:292;

(cv) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:295, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:296;

(cw) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:299, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:300;

(cx) a light chain variable region comprising a CDR1, a CDR2, and a CDR3

domains of the light chain variable region sequence set forth in SEQ ID NO:303, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:304

(cy) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:917, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:915; or

(cz) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:921, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:919.

The presently disclosed subject matter further provides a chimeric antigen receptor (CAR), comprising an extracellular antigen-binding domain that binds to Fc Receptor-like 5 (FcRL5), a transmembrane domain and an intracellular domain, wherein the extracellular antigen-binding domain comprises:

(aa) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 312, 313, and 314, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 309, 310, and 311, respectively;

(ab) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 318, 319, and 320, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 315, 316, and 317, respectively;

(ac) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 324, 319, and 325, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 321, 322, and 323, respectively;

(ad) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 329, 330, and 331, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 326, 327, and 328, respectively;

(ae) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 329, 330, and 331, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth

in SEQ ID NOs: 332, 333, and 334, respectively;

(af) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 338, 330, and 339, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 335, 336, and 337, respectively;

(ag) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 343, 344, and 345, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 340, 341, and 342, respectively;

(ah) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 348, 349, and 350, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 346, 327, and 347, respectively;

(ai) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 352, 344, and 353, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 346, 327, and 351, respectively;

(aj) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 357, 358, and 359, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 354, 355, and 356, respectively;

(ak) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 363, 364, and 365, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 360, 361, and 362, respectively;

(al) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 369, 370, and 371, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 366, 367, and 368, respectively;

(am) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 329, 330, and 375, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 372, 373, and 374, respectively;

(an) a light chain variable region comprising a CDR1, a CDR2, and a CDR3

sequences set forth in SEQ ID NOs: 329, 330, and 377, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 346, 327, and 376, respectively;

(ao) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 381, 382, and 383, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 378, 379, and 380, respectively;

(ap) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 329, 385, and 386, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 309, 310, and 384, respectively;

(aq) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 390, 391, and 392, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 387, 388, and 389, respectively;

(ar) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 318, 319, and 395, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 393, 355, and 394, respectively;

(as) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 397, 398, and 399, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 346, 327, and 396, respectively;

(at) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 401, 398, and 402, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 346, 327, and 400, respectively;

(au) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 406, 398, and 407, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 403, 404, and 405, respectively;

(av) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 329, 409, and 410, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth

in SEQ ID NOs: 346, 327, and 408, respectively;

(aw) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 318, 319, and 414, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 411, 412, and 413, respectively;

(ax) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 416, 417, and 418, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 411, 412, and 415, respectively;

(ay) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 318, 319, and 419, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 411, 412, and 349, respectively;

(az) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 423, 358, and 424, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 420, 421, and 422, respectively;

(ba) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 428, 429, and 430, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 425, 426, and 427, respectively;

(bb) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 433, 434, and 435, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 372, 431, and 432, respectively;

(bc) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 423, 438, and 439, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 436, 338, and 437, respectively;

(bd) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 329, 330, and 443, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 440, 441, and 442, respectively;

(be) a light chain variable region comprising a CDR1, a CDR2, and a CDR3

sequences set forth in SEQ ID NOs: 447, 448, and 449, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 444, 445, and 446, respectively;

(bf) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 318, 319, and 452, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 309, 450, and 451, respectively;

(bg) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 369, 454, and 455, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 411, 412, and 453, respectively;

(bh) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 318, 319, and 457, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 411, 412, and 456, respectively;

(bi) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 329, 330, and 331, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 346, 327, and 458, respectively;

(bj) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 460, 461, and 462, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 411, 412, and 459, respectively;

(bk) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 318, 319, and 419, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 411, 412, and 453, respectively;

(bl) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 423, 438, and 465, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 436, 388, and 464, respectively;

(bm) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 468, 469, and 470, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth

in SEQ ID NOs: 411, 466, and 467, respectively;

(bn) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 474, 358, and 465, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 471, 472, and 473, respectively;

(bo) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 477, 478, and 479, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 372, 475, and 476, respectively;

(bp) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 483, 484, and 485, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 480, 481, and 482, respectively;

(bq) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 433, 487, and 486, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 346, 327, and 486, respectively;

(br) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 490, 313, and 491, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 309, 310, and 489, respectively;

(bs) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 312, 313, and 493, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 309, 310, and 492, respectively;

(bt) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 490, 349, and 495, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 403, 404, and 494, respectively;

(bu) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 498, 344, and 499, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 403, 496, and 497, respectively;

(bv) a light chain variable region comprising a CDR1, a CDR2, and a CDR3

sequences set forth in SEQ ID NOs: 503, 504, and 505, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 500, 501, and 502, respectively;

(bw) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 508, 349, and 509, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 403, 506, and 507, respectively;

(bx) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 312, 513, and 514, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 510, 511, and 512, respectively;

(by) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 518, 319, and 519, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 515, 516, and 517, respectively;

(bz) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 348, 523, and 524, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 520, 521, and 522, respectively;

(ca) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 406, 398, and 528, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 525, 526, and 527, respectively;

(cb) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 318, 319, and 530, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 411, 412, and 529, respectively;

(cc) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 318, 319 and 531, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 515, 516, and 517, respectively;

(cd) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 533, 534, and 535, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth

in SEQ ID NOs: 403, 404, and 532, respectively;

(ce) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 428, 429, and 430, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 425, 426, and 536, respectively;

(cf) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 540, 398, and 541, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 537, 538, and 539, respectively;

(cg) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 406, 398, and 542, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 537, 538, and 539, respectively;

(ch) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 544, 448, and 545, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 411, 412, and 543, respectively;

(ci) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 547, 548, and 549, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 411, 412, and 546, respectively;

(cj) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 d sequences set forth in SEQ ID NOs: 312, 313, and 314, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 309, 310, and 550, respectively;

(ck) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 312, 513, and 314, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 309, 310, and 550, respectively;

(cl) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 406, 398, and 554, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 551, 552, and 553, respectively;

(cm) a light chain variable region comprising a CDR1, a CDR2, and a CDR3

sequences set forth in SEQ ID NOs: 556, 557, and 558, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 309, 310, and 555, respectively;

(cn) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 562, 563, and 564, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 559, 560, and 561, respectively;

(co) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 568, 504, and 569, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 565, 566, and 567, respectively;

(cp) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 571, 572, and 573, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 372, 475, and 570, respectively;

(cq) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 343, 575, and 576, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 403, 404, and 574, respectively;

(cr) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 312, 313, and 314, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 411, 412, and 577, respectively;

(cs) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 312, 313, and 314, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 346, 327, and 578, respectively;

(ct) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 580, 438, and 581, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 436, 388, and 579, respectively;

(cu) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 585, 313, and 314, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth

in SEQ ID NOs: 582, 583, and 584, respectively;

(cv) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 312, 586, and 314, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 346, 327, and 578, respectively;

(cw) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 588, 385, and 375, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 403, 404, and 587, respectively; or

(cx) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 318, 319, and 592, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 589, 590, and 591, respectively;

(cy) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 926, 927, and 928, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 923, 924, and 925, respectively; or

(cz) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 932, 933, and 934, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 929, 930, and 931, respectively .

The presently disclosed subject matter also provides isolated immunoresponsive cells comprising the above-described CARs. In certain embodiments, the isolated immunoresponsive cell is transduced with the CAR, for example, the CAR is constitutively expressed on the surface of the immunoresponsive cell. In certain embodiments, the isolated immunoresponsive cell is further transduced with at least one co-stimulatory ligand such that the immunoresponsive cell expresses the at least one co-stimulatory ligand. In certain embodiments, the at least one co-stimulatory ligand is selected from the group consisting of 4-1BBL, CD80, CD86, CD70, OX40L, CD48, TNFRSF14, and combinations thereof. In certain embodiments, the isolated immunoresponsive cell is further transduced with at least one cytokine such that the immunoresponsive cell secrets the at least one cytokine. In certain embodiments, the at least one cytokine is selected from the group consisting of IL-2, IL-3, IL-6, IL-7, IL-11,

IL-12, IL-15, IL-17, IL-21, and combinations thereof. In certain embodiments, the isolated immunoresponsive cell is selected from the group consisting of a T cell, a Natural Killer (NK) cell, a cytotoxic T lymphocyte (CTL), a regulatory T cell, a human embryonic stem cell, a lymphoid progenitor cell, a T cell-precursor cell, and a pluripotent stem cell from which lymphoid cells may be differentiated. In certain embodiments, the immunoresponsive cell is a T cell.

The presently disclosed subject matter further provides an isolated nucleic acid molecule encoding the chimeric antigen receptor (CAR) as described herein.

The presently disclosed subject matter further provides a vector comprising the isolated nucleic acid molecule as described herein.

The presently disclosed subject matter further provides a host cell expressing

What is claimed is:

1. A chimeric antigen receptor (CAR), comprising an extracellular antigen-binding domain that binds to Fc Receptor-like 5 (FcRL5), a transmembrane domain and an intracellular domain, wherein the extracellular antigen-binding domain comprises:

(aa) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:3, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:4;

(ab) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:7, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:8;

(ac) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:11, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:12;

(ad) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:15, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:16;

(ae) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:19, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:20;

(af) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:23, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:24;

(ag) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:27, and a heavy chain variable

region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:28;

(ah) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:31, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:32;

(ai) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:35, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:36;

(aj) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:39, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:40;

(ak) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:43, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:44;

(al) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:47, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:48;

(am) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:51, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:52;

(an) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:55, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:56;

(ao) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of

the light chain variable region sequence set forth in SEQ ID NO:59, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:60;

(ap) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:63, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:64;

(aq) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:67, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:68;

(ar) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:71, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:72;

(as) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:75, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:76;

(at) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:79, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:80;

(au) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:83, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:84;

(av) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:87, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:88;

(aw) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:91, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:92;

(ax) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:95, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:96;

(ay) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:99, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:100;

(az) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:103, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:104;

(ba) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:107, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:108;

(bb) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:111, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:112;

(bc) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:115, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:116;

(bd) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:119, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region

sequence set forth in SEQ ID NO:120;

(be) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:123, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:124;

(bf) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:127, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:128;

(bg) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:131, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:132;

(bh) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:135, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:136;

(bi) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:139, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:140;

(bj) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:143, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:144;

(bk) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:147, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:148;

(bl) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:151, and a heavy chain variable

region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:152;

(bm) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:155, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:156;

(bn) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:159, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:160;

(bo) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:163, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:164;

(bp) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:167, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:168;

(bq) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:171, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:172;

(br) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:175, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:176;

(bs) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:179, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:180;

(bt) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of

the light chain variable region sequence set forth in SEQ ID NO:183, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:184;

(bu) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:187, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:188;

(bv) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:191, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:192;

(bw) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:195, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:196;

(bx) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:199, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:200;

(by) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:203, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:204;

(bz) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:207, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:208;

(ca) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:211, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:212;

(cb) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:215, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:216;

(cc) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:219, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:220;

(cd) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:223, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:224;

(ce) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:227, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:228;

(cf) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:231, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:232;

(cg) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:235, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:236;

(ch) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:239, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:240;

(ci) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:243, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region

sequence set forth in SEQ ID NO:244;

(cj) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:247, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:248;

(ck) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:251, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:252;

(cl) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:255, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:256;

(cm) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:259, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:260;

(cn) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:263, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:264;

(co) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:267, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:268;

(cp) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:271, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:272;

(cq) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:275, and a heavy chain variable

region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:276;

(cr) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:279, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:280;

(cs) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:283, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:284;

(ct) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:287, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:288;

(cu) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:291, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:292;

(cv) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:295, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:296;

(cw) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:299, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:300;

(cx) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:303, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:304

(cy) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of

the light chain variable region sequence set forth in SEQ ID NO:917, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:915; or

(cz) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the light chain variable region sequence set forth in SEQ ID NO:921, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 domains of the heavy chain variable region sequence set forth in SEQ ID NO:919.

2. A chimeric antigen receptor (CAR), comprising an extracellular antigen-binding domain that binds to Fc Receptor-like 5 (FcRL5), a transmembrane domain and an intracellular domain, wherein the extracellular antigen-binding domain comprises:

(aa) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 312, 313, and 314, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 309, 310, and 311, respectively;

(ab) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 318, 319, and 320, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 315, 316, and 317, respectively;

(ac) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 324, 319, and 325, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 321, 322, and 323, respectively;

(ad) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 329, 330, and 331, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 326, 327, and 328, respectively;

(ae) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 329, 330, and 331, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 332, 333, and

334, respectively;

(af) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 338, 330, and 339, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 335, 336, and 337, respectively;

(ag) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 343, 344, and 345, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 340, 341, and 342, respectively;

(ah) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 348, 349, and 350, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 346, 327, and 347, respectively;

(ai) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 352, 344, and 353, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 346, 327, and 351, respectively;

(aj) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 357, 358, and 359, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 354, 355, and 356, respectively;

(ak) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 363, 364, and 365, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 360, 361, and 362, respectively;

(al) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 369, 370, and 371, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 366, 367, and 368, respectively;

(am) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 329, 330, and 375, respectively, and a heavy chain variable region

comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 372, 373, and 374, respectively;

(an) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 329, 330, and 377, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 346, 327, and 376, respectively;

(ao) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 381, 382, and 383, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 378, 379, and 380, respectively;

(ap) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 329, 385, and 386, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 309, 310, and 384, respectively;

(aq) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 390, 391, and 392, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 387, 388, and 389, respectively;

(ar) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 318, 319, and 395, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 393, 355, and 394, respectively;

(as) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 397, 398, and 399, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 346, 327, and 396, respectively;

(at) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 401, 398, and 402, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 346, 327, and 400, respectively;

(au) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences

set forth in SEQ ID NOs: 406, 398, and 407, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 403, 404, and 405, respectively;

(av) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 329, 409, and 410, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 346, 327, and 408, respectively;

(aw) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 318, 319, and 414, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 411, 412, and 413, respectively;

(ax) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 416, 417, and 418, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 411, 412, and 415, respectively;

(ay) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 318, 319, and 419, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 411, 412, and 349, respectively;

(az) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 423, 358, and 424, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 420, 421, and 422, respectively;

(ba) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 428, 429, and 430, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 425, 426, and 427, respectively;

(bb) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 433, 434, and 435, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 372, 431, and 432, respectively;

(bc) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 423, 438, and 439, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 436, 338, and 437, respectively;

(bd) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 329, 330, and 443, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 440, 441, and 442, respectively;

(be) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 447, 448, and 449, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 444, 445, and 446, respectively;

(bf) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 318, 319, and 452, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 309, 450, and 451, respectively;

(bg) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 369, 454, and 455, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 411, 412, and 453, respectively;

(bh) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 318, 319, and 457, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 411, 412, and 456, respectively;

(bi) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 329, 330, and 331, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 346, 327, and 458, respectively;

(bj) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 460, 461, and 462, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 411, 412, and

459, respectively;

(bk) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 318, 319, and 419, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 411, 412, and 453, respectively;

(bl) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 423, 438, and 465, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 436, 388, and 464, respectively;

(bm) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 468, 469, and 470, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 411, 466, and 467, respectively;

(bn) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 474, 358, and 465, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 471, 472, and 473, respectively;

(bo) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 477, 478, and 479, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 372, 475, and 476, respectively;

(bp) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 483, 484, and 485, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 480, 481, and 482, respectively;

(bq) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 433, 487, and 486, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 346, 327, and 486, respectively;

(br) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 490, 313, and 491, respectively, and a heavy chain variable region

comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 309, 310, and 489, respectively;

(bs) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 312, 313, and 493, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 309, 310, and 492, respectively;

(bt) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 490, 349, and 495, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 403, 404, and 494, respectively;

(bu) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 498, 344, and 499, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 403, 496, and 497, respectively;

(bv) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 503, 504, and 505, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 500, 501, and 502, respectively;

(bw) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 508, 349, and 509, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 403, 506, and 507, respectively;

(bx) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 312, 513, and 514, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 510, 511, and 512, respectively;

(by) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 518, 319, and 519, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 515, 516, and 517, respectively;

(bz) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences

set forth in SEQ ID NOs: 348, 523, and 524, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 520, 521, and 522, respectively;

(ca) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 406, 398, and 528, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 525, 526, and 527, respectively;

(cb) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 318, 319, and 530, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 411, 412, and 529, respectively;

(cc) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 318, 319 and 531, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 515, 516, and 517, respectively;

(cd) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 533, 534, and 535, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 403, 404, and 532, respectively;

(ce) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 428, 429, and 430, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 425, 426, and 536, respectively;

(cf) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 540, 398, and 541, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 537, 538, and 539, respectively;

(cg) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 406, 398, and 542, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 537, 538, and 539, respectively;

(ch) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 544, 448, and 545, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 411, 412, and 543, respectively;

(ci) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 547, 548, and 549, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 411, 412, and 546, respectively;

(cj) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 d sequences set forth in SEQ ID NOs: 312, 313, and 314, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 309, 310, and 550, respectively;

(ck) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 312, 513, and 314, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 309, 310, and 550, respectively;

(cl) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 406, 398, and 554, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 551, 552, and 553, respectively;

(cm) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 556, 557, and 558, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 309, 310, and 555, respectively;

(cn) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 562, 563, and 564, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 559, 560, and 561, respectively;

(co) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 568, 504, and 569, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 565, 566, and

567, respectively;

(cp) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 571, 572, and 573, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 372, 475, and 570, respectively;

(cq) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 343, 575, and 576, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 403, 404, and 574, respectively;

(cr) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 312, 313, and 314, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 411, 412, and 577, respectively;

(cs) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 312, 313, and 314, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 346, 327, and 578, respectively;

(ct) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 580, 438, and 581, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 436, 388, and 579, respectively;

(cu) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 585, 313, and 314, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 582, 583, and 584, respectively;

(cv) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 312, 586, and 314, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 346, 327, and 578, respectively;

(cw) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 588, 385, and 375, respectively, and a heavy chain variable region

comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 403, 404, and 587, respectively; or

(cx) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 318, 319, and 592, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 589, 590, and 591, respectively;

(cy) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 926, 927, and 928, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 923, 924, and 925, respectively; or

(cz) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 932, 933, and 934, respectively, and a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 929, 930, and 931, respectively.

3. The chimeric antigen receptor (CAR) of claim 1 or claim 2, wherein the extracellular antigen-binding domain comprises:

(aa) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:3, and a heavy chain variable region an amino acid sequence that has comprising at least about 90% sequence identity to the sequence set forth in SEQ ID NO:4;

(ab) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:7, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:8;

(ac) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:11, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:12;

(ad) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:15, and a heavy chain

variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:16;

(ae) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:19, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:20;

(af) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:23, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:24;

(ag) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:27, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:28;

(ah) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:31, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:32;

(ai) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:35, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:36;

(aj) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:39, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:40;

(ak) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:43, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:44;

(al) a light chain variable region comprising an amino acid sequence that has at least

about 90% sequence identity to the sequence set forth in SEQ ID NO:47, and a heavy chain variable region comprising an amino acid sequence that has at least about 0% sequence identity to the sequence set forth in SEQ ID NO:48;

(am) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:51, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:52;

(an) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:55, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:56;

(ao) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:59, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:60;

(ap) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:63, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:64;

(aq) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:67, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:68;

(ar) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:71, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:72;

(as) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:75, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:76;

(at) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:79, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:80;

(au) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:83, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:84;

(av) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:87, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:88;

(aw) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:91, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:92;

(ax) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:95, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:96;

(ay) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:99, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:100;

(az) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:103, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:104;

(ba) a light chain variable region comprising an amino acid sequence that has at least about 0% sequence identity to the sequence set forth in SEQ ID NO:107, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity

to the sequence set forth in SEQ ID NO:108;

(bb) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:111, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:112;

(bc) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:115, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:116;

(bd) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:119, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:120;

(be) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:123, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:124;

(bf) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:127, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:128;

(bg) a light chain variable region comprising an amino acid sequence h that as at least about 90% sequence identity to the sequence set forth in SEQ ID NO:131, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:132;

(bh) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:135, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:136;

(bi) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:139, and a heavy chain

variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:140;

(bj) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:143, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:144;

(bk) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:147, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:148;

(bl) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:151, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:152;

(bm) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:155, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:156;

(bn) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:159, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:160;

(bo) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:163, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:164;

(bp) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:167, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:168;

(bq) a light chain variable region comprising an amino acid sequence that has at least

about 90% sequence identity to the sequence set forth in SEQ ID NO:171, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:172;

(br) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:175, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:176;

(bs) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:179, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:180;

(bt) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:183, and a heavy chain variable region comprising an amino acid sequence that has at least about % sequence identity to the sequence set forth in SEQ ID NO:184;

(bu) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:187, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:188;

(bv) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:191, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:192;

(bw) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:195, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:196;

(bx) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:199, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:200;

(by) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:203, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:204;

(bz) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:207, and a heavy chain variable region comprising an amino acid sequence that has at least about % sequence identity to the sequence set forth in SEQ ID NO:208;

(ca) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:211, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:212;

(cb) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:215, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:216;

(cc) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:219, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:220;

(cd) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:223, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:224;

(ce) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:227, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:228;

(cf) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:231, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity

to the sequence set forth in SEQ ID NO:232;

(cg) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:235, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:236;

(ch) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:239, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:240;

(ci) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:243, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:244;

(cj) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:247, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:248;

(ck) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:251, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:252;

(cl) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:255, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:256;

(cm) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:259, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:260;

(cn) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:263, and a heavy chain

variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:264;

(co) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:267, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:268;

(cp) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:271, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:272;

(cq) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:275, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:276;

(cr) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:279, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:280;

(cs) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:283, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:284;

(ct) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:287, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:288;

(cu) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:291, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:292;

(cv) a light chain variable region comprising an amino acid sequence that has at least

about 90% sequence identity to the sequence set forth in SEQ ID NO:295, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:296;

(cw) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:299, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:300;

(cx) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:303, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:304

(cy) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:917, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:915; or

(cz) a light chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:921, and a heavy chain variable region comprising an amino acid sequence that has at least about 90% sequence identity to the sequence set forth in SEQ ID NO:919.

4. The CAR of any one of claims 1-3, wherein the extracellular antigen-binding domain comprises:

(aa) a light chain variable region comprising the sequence set forth in SEQ ID NO:3, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:4;

(ab) a light chain variable region comprising the sequence set forth in SEQ ID NO:7, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:8;

(ac) a light chain variable region comprising the sequence set forth in SEQ ID NO:11, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:12;

(ad) a light chain variable region comprising the sequence set forth in SEQ ID NO:15, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:16;

(ae) a light chain variable region comprising the sequence set forth in SEQ ID NO:19,

and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:20;

(af) a light chain variable region comprising the sequence set forth in SEQ ID NO:23, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:24;

(ag) a light chain variable region comprising the sequence set forth in SEQ ID NO:27, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:28;

(ah) a light chain variable region comprising the sequence set forth in SEQ ID NO:31, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:32;

(ai) a light chain variable region comprising the sequence set forth in SEQ ID NO:35, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:36;

(aj) a light chain variable region comprising the sequence set forth in SEQ ID NO:39, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:40;

(ak) a light chain variable region comprising the sequence set forth in SEQ ID NO:43, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:44;

(al) a light chain variable region comprising the sequence set forth in SEQ ID NO:47, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:48;

(am) a light chain variable region comprising the sequence set forth in SEQ ID NO:51, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:52;

(an) a light chain variable region comprising the sequence set forth in SEQ ID NO:55, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:56;

(ao) a light chain variable region comprising the sequence set forth in SEQ ID NO:59, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:60;

(ap) a light chain variable region comprising the sequence set forth in SEQ ID NO:63, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:64;

(aq) a light chain variable region comprising the sequence set forth in SEQ ID NO:67, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:68;

(ar) a light chain variable region comprising the sequence set forth in SEQ ID NO:71, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:72;

(as) a light chain variable region comprising the sequence set forth in SEQ ID NO:75, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:76;

(at) a light chain variable region comprising the sequence set forth in SEQ ID NO:79, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:80;

(au) a light chain variable region comprising the sequence set forth in SEQ ID NO:83, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:84;

(av) a light chain variable region comprising the sequence set forth in SEQ ID NO:87, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:88;

(aw) a light chain variable region comprising the sequence set forth in SEQ ID NO:91, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:92;

(ax) a light chain variable region comprising the sequence set forth in SEQ ID NO:95, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:96;

(ay) a light chain variable region comprising the sequence set forth in SEQ ID NO:99, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:100;

(az) a light chain variable region comprising the sequence set forth in SEQ ID NO:103, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:104;

(ba) a light chain variable region comprising the sequence set forth in SEQ ID NO:107, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:108;

(bb) a light chain variable region comprising the sequence set forth in SEQ ID NO:111, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:112;

(bc) a light chain variable region comprising the sequence set forth in SEQ ID NO:115, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:116;

(bd) a light chain variable region comprising the sequence set forth in SEQ ID NO:119, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:120;

(be) a light chain variable region comprising the sequence set forth in SEQ ID NO:123, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:124;

(bf) a light chain variable region comprising the sequence set forth in SEQ ID NO:127, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:128;

(bg) a light chain variable region comprising the sequence set forth in SEQ ID NO:131, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:132;

(bh) a light chain variable region comprising the sequence set forth in SEQ ID NO:135, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:136;

(bi) a light chain variable region comprising the sequence set forth in SEQ ID NO:139, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:140;

(bj) a light chain variable region comprising the sequence set forth in SEQ ID NO:143,

and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:144;

(bk) a light chain variable region comprising the sequence set forth in SEQ ID NO:147, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:148;

(bl) a light chain variable region comprising the sequence set forth in SEQ ID NO:151, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:152;

(bm) a light chain variable region comprising the sequence set forth in SEQ ID NO:155, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:156;

(bn) a light chain variable region comprising the sequence set forth in SEQ ID NO:159, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:160;

(bo) a light chain variable region comprising the sequence set forth in SEQ ID NO:163, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:164;

(bp) a light chain variable region comprising the sequence set forth in SEQ ID NO:167, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:168;

(bq) a light chain variable region comprising the sequence set forth in SEQ ID NO:171, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:172;

(br) a light chain variable region comprising the sequence set forth in SEQ ID NO:175, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:176;

(bs) a light chain variable region comprising the sequence set forth in SEQ ID NO:179, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:180;

(bt) a light chain variable region comprising the sequence set forth in SEQ ID NO:183, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:184;

(bu) a light chain variable region comprising the sequence set forth in SEQ ID NO:187, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:188;

(bv) a light chain variable region comprising the sequence set forth in SEQ ID NO:191, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:192;

(bw) a light chain variable region comprising the sequence set forth in SEQ ID NO:195, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:196;

(bx) a light chain variable region comprising the sequence set forth in SEQ ID NO:199, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:200;

(by) a light chain variable region comprising the sequence set forth in SEQ ID NO:203, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:204;

(bz) a light chain variable region comprising the sequence set forth in SEQ ID NO:207, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:208;

(ca) a light chain variable region comprising the sequence set forth in SEQ ID NO:211, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:212;

(cb) a light chain variable region comprising the sequence set forth in SEQ ID NO:215, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:216;

(cc) a light chain variable region comprising the sequence set forth in SEQ ID NO:219, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:220;

(cd) a light chain variable region comprising the sequence set forth in SEQ ID NO:223, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:224;

(ce) a light chain variable region comprising the sequence set forth in SEQ ID NO:227, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:228;

(cf) a light chain variable region comprising the sequence set forth in SEQ ID NO:231, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:232;

(cg) a light chain variable region comprising the sequence set forth in SEQ ID NO:235, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:236;

(ch) a light chain variable region comprising the sequence set forth in SEQ ID NO:239, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:240;

(ci) a light chain variable region comprising the sequence set forth in SEQ ID NO:243, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:244;

(cj) a light chain variable region comprising the sequence set forth in SEQ ID NO:247, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:248;

(ck) a light chain variable region comprising the sequence set forth in SEQ ID NO:251, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:252;

(cl) a light chain variable region comprising the sequence set forth in SEQ ID NO:255, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:256;

(cm) a light chain variable region comprising the sequence set forth in SEQ ID NO:259, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:260;

(cn) a light chain variable region comprising the sequence set forth in SEQ ID NO:263, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:264;

(co) a light chain variable region comprising the sequence set forth in SEQ ID NO:267,

and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:268;

(cp) a light chain variable region comprising the sequence set forth in SEQ ID NO:271, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:272;

(cq) a light chain variable region comprising the sequence set forth in SEQ ID NO:275, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:276;

(cr) a light chain variable region comprising the sequence set forth in SEQ ID NO:279, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:280;

(cs) a light chain variable region comprising the sequence set forth in SEQ ID NO:283, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:284;

(ct) a light chain variable region comprising the sequence set forth in SEQ ID NO:287, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:288;

(cu) a light chain variable region comprising the sequence set forth in SEQ ID NO:291, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:292;

(cv) a light chain variable region comprising the sequence set forth in SEQ ID NO:295, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:296;

(cw) a light chain variable region comprising the sequence set forth in SEQ ID NO:299, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:300;

(cx) a light chain variable region comprising the sequence set forth in SEQ ID NO:303, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:304

(cy) a light chain variable region comprising the sequence set forth in SEQ ID NO:917, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:915; or

(cz) a light chain variable region comprising the sequence set forth in SEQ ID NO:921, and a heavy chain variable region comprising the sequence set forth in SEQ ID NO:919.

5. The CAR of any one of claims 1-3, wherein the extracellular antigen-binding domain comprises (a) a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 923, 924, and 925, respectively; and (b) a light chain variable region comprising a CDR1, a CDR2 and a CDR3 sequences set forth in SEQ ID NOs: 926, 927, and 928.

6. The CAR of any one of claims 1-3, wherein the extracellular antigen-binding domain

comprises (a) a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 929, 930, and 931, respectively; and (b) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 932, 933, and 934, respectively.

7. The CAR of any one of claims 1-3, wherein the extracellular antigen-binding domain comprises (a) a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 411, 412, and 463, respectively; and (b) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 318, 319, and 419, respectively.

8. The CAR of any one of claims 1-3, wherein the extracellular antigen-binding domain comprises (a) a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 515, 516, and 517, respectively; and (b) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 318, 319, and 531, respectively.

9. The CAR of any one of claims 1-3, wherein the extracellular antigen-binding domain comprises (a) a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 403, 404, and 532, respectively; and (b) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 533, 534, and 535, respectively.

10. The CAR of any one of claims 1-3, wherein the extracellular antigen-binding domain comprises (a) a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 411, 412, and 543, respectively; and (b) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 544, 448, and 545, respectively.

11. The CAR of any one of claims 1-3, wherein the extracellular antigen-binding domain comprises (a) a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 372, 475, and 570, respectively; and (b) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs:

571, 572, and 573, respectively.

12. The CAR of any one of claims 1-3, wherein the extracellular antigen-binding domain comprises (a) a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 440, 441, and 442, respectively; and (b) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 329, 330, and 443, respectively.

13. The CAR of any one of claims 1-3, wherein the extracellular antigen-binding domain comprises (a) a heavy chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 309, 310, and 489, respectively; and (b) a light chain variable region comprising a CDR1, a CDR2, and a CDR3 sequences set forth in SEQ ID NOs: 490, 313, and 491, respectively.

14 . The CAR of any one of claims 1-5 , wherein the extracellular antigen-binding domain comprises (a) a heavy chain variable region comprising the amino acid sequence set forth in SEQ ID NO:915; and (b) a light chain variable region comprising the amino acid sequence set forth in SEQ ID NO:917.

15 . The CAR of any one of claims 1-4 and 6 , wherein the extracellular antigen-binding domain comprises (a) a heavy chain variable region comprising the amino acid sequence set forth in SEQ ID NO:919; and (b) a light chain variable region comprising the amino acid sequence set forth in SEQ ID NO:921.

16 . The CAR of any one of claims 1-4 and 7 , wherein the extracellular antigen-binding domain comprises (a) a heavy chain variable region comprising the amino acid sequence set forth in SEQ ID NO:144, and (b) a light chain variable region comprising the amino acid sequence set forth in SEQ ID NO:143.

17 . The CAR of any one of claims 1-4 and 8 , wherein the extracellular antigen-binding domain comprises (a) a heavy chain variable region comprising the amino acid sequence set forth in SEQ ID NO:216, and (b) a light chain variable region comprising the amino acid sequence set forth in SEQ ID NO:215.

18 . The CAR of any one of claims 1-4 and 9 , wherein the extracellular antigen-binding domain comprises (a) a heavy chain variable region comprising the amino acid sequence set forth in SEQ ID NO:220, and (b) a light chain variable region comprising the amino acid sequence set forth in SEQ ID NO:219.

19 . The CAR of any one of claims 1-4 and 10 , wherein the extracellular antigen-binding domain comprises (a) a heavy chain variable region comprising the amino acid sequence set forth in SEQ ID NO:236, and (b) a light chain variable region comprising the amino acid sequence set forth in SEQ ID NO:235.

20 . The CAR of any one of claims 1-4 and 11 , wherein the extracellular antigen-binding domain comprises (a) a heavy chain variable region comprising the amino acid sequence set forth in SEQ ID NO:268, and (b) a light chain variable region comprising the amino acid sequence set forth in SEQ ID NO:267.

21 . The CAR of any one of claims 1-4 and 12 , wherein the extracellular antigen-binding domain comprises (a) a heavy chain variable region comprising the amino acid sequence set forth in SEQ ID NO:116, and (b) a light chain variable region comprising the amino acid sequence set forth in SEQ ID NO:115.

22 . The CAR of any one of claims 1-4 and 13 , wherein the extracellular antigen-binding domain comprises (a) a heavy chain variable region comprising the amino acid sequence set forth in SEQ ID NO:172, and (b) a light chain variable region comprising the amino acid sequence set forth in SEQ ID NO:171.

23 . The CAR of any one of claims 1-22 , wherein the extracellular antigen-binding domain comprises a linker between a heavy chain variable region and a light chain variable region of the extracellular antigen-binding domain.

24 . The CAR of claim 23 , wherein the linker comprises an amino acid sequence selected from the group consisting of SEQ ID NO:307 and SEQ ID NO:897.

25. The CAR of any one of claims 1-24, wherein the extracellular antigen-binding domain is a single-chain variable fragment (scFv).

26. The CAR of claim 25, wherein the extracellular antigen-binding domain is a human scFv.

27. The CAR of any one of claims 1-4, and 23-26, wherein the extracellular antigen-binding domain comprises the amino acid sequence set forth in SEQ ID NO: 594, SEQ ID NO: 596, SEQ ID NO: 598, SEQ ID NO: 600, SEQ ID NO: 602, SEQ ID NO: 604, SEQ ID NO: 606, SEQ ID NO: 608, SEQ ID NO: 610, SEQ ID NO: 612, SEQ ID NO: 614, SEQ ID NO: 616, SEQ ID NO: 618, SEQ ID NO: 620, SEQ ID NO: 621, SEQ ID NO: 624, SEQ ID NO: 626, SEQ ID NO: 628, SEQ ID NO: 630, SEQ ID NO: 632, SEQ ID NO: 634, SEQ ID NO: 636, SEQ ID NO: 638, SEQ ID NO: 640, SEQ ID NO: 642, SEQ ID NO: 644, SEQ ID NO: 646, SEQ ID NO: 648, SEQ ID NO: 650, SEQ ID NO: 652, SEQ ID NO: 654, SEQ ID NO: 656, SEQ ID NO: 658, SEQ ID NO: 660, SEQ ID NO: 662, SEQ ID NO: 664, SEQ ID NO: 666, SEQ ID NO: 668, SEQ ID NO: 670, SEQ ID NO: 672, SEQ ID NO: 674, SEQ ID NO: 676, SEQ ID NO: 678, SEQ ID NO: 680, SEQ ID NO: 682, SEQ ID NO: 684, SEQ ID NO: 686, SEQ ID NO: 688, SEQ ID NO: 690, SEQ ID NO: 692, SEQ ID NO: 694, SEQ ID NO: 696, SEQ ID NO: 698, SEQ ID NO: 700, SEQ ID NO: 702, SEQ ID NO: 704, SEQ ID NO: 706, SEQ ID NO: 708, SEQ ID NO: 710, SEQ ID NO: 712, SEQ ID NO: 714, SEQ ID NO: 716, SEQ ID NO: 718, SEQ ID NO: 720, SEQ ID NO: 722, SEQ ID NO: 724, SEQ ID NO: 726, SEQ ID NO: 728, SEQ ID NO: 730, SEQ ID NO: 732, SEQ ID NO: 734, SEQ ID NO: 736, SEQ ID NO: 738, SEQ ID NO: 740, SEQ ID NO: 742, or SEQ ID NO: 744.

28. The CAR of any one of claims 1-5 and 27, wherein:
the extracellular antigen-binding domain comprises (a) a heavy chain variable region comprising the amino acid sequence set forth in SEQ ID NO:915; (b) a light chain variable region comprising the amino acid sequence set forth in SEQ ID NO:917, and (c) a linker having the amino acid sequence of SEQ ID NO:897 positioned between the heavy chain variable region and the light chain variable region.

29. The CAR of any one of claims 1-4, 6 and 27, wherein the extracellular antigen-binding domain comprises (a) a heavy chain variable region comprising the amino acid sequence set forth in SEQ ID NO:919; (b) a light chain variable region comprising the amino acid sequence set forth in SEQ ID NO:921; and (c) a linker having the amino acid sequence of SEQ ID NO:897 positioned between the heavy chain variable region and the light chain variable region.

30. The CAR of any one of claims 1-4, 7, 16 and 27, wherein the extracellular antigen-binding domain comprises the amino acid sequence set forth in SEQ ID NO:664.

31. The CAR of any one of claims 1-4, 8, 17 and 27, wherein the extracellular antigen-binding domain comprises the amino acid sequence set forth in SEQ ID NO:700.

32. The CAR of any one of claims 1-4, 9, 18 and 27, wherein the extracellular antigen-binding domain comprises the amino acid sequence set forth in SEQ ID NO:702.

33. The CAR of any one of claims 1-4, 10, 19 and 27, wherein the extracellular antigen-binding domain comprises the amino acid sequence set forth in SEQ ID NO:710.

34. The CAR of any one of claims 1-4, 11, 20 and 27, wherein the extracellular antigen-binding domain comprises the amino acid sequence set forth in SEQ ID NO:726.

35. The CAR of any one of claims 1-4, 12, 21 and 27, wherein the extracellular antigen-binding domain comprises the amino acid sequence set forth in SEQ ID NO:650.

36. The CAR of any one of claims 1-4, 13, 22 and 27, wherein the extracellular antigen-binding domain comprises the amino acid sequence set forth in SEQ ID NO:678.

37. The CAR of any one of claims 1-24, wherein the extracellular antigen-binding domain is a Fab.

38. The CAR of any one of claims 1-24, wherein the extracellular antigen-binding domain is a $F(ab')_2$.

39. The CAR of any one of claims 25-38, one or more of the scFv, Fab and $F(ab')_2$ are comprised in a fusion protein with a heterologous sequence to form the extracellular antigen-binding domain.

40. The CAR of any one of claims 1-39, wherein the extracellular antigen-binding domain of the CAR binds to FcRL5 with a binding affinity (K_d) of from about 1×10^{-9} M to about 3×10^{-6} M.

41. The CAR of any one of claims 1-40, wherein the extracellular antigen-binding domain of the CAR binds to domain 7, domain 8 or domain 9 of FcRL5 with a binding affinity (K_d) of from about 1 x 10^{-9} M to about 3 x 10^{-6} M.

42. The CAR of any one of claims 1-41, wherein the extracellular antigen-binding domain comprises a signal peptide that is covalently joined to the 5' terminus of the extracellular antigen-binding domain.

43. The CAR of any one of claims 1-42, wherein the FcRL5 comprises the amino acid sequence set forth in SEQ ID NO:899.

44. The CAR of any one of claims 1-43, wherein the extracellular antigen-binding domain binds an epitope comprising the amino acid sequence set forth in SEQ ID NO:964.

45. The CAR of any one of claims 1-43, wherein the extracellular antigen-binding domain binds to an epitope comprising the amino acid sequence set forth in SEQ ID NO:965.

46. The CAR of any one of claims 1-45, wherein the transmembrane domain comprises a CD8 polypeptide, a CD28 polypeptide, a CD3ζ polypeptide, a CD4 polypeptide, a 4-1BB polypeptide, an OX40 polypeptide, an ICOS polypeptide, a CTLA-4 polypeptide, a PD-1 polypeptide, a LAG-3 polypeptide, a 2B4 polypeptide, a BTLA polypeptide, or a combination thereof.

47. The CAR of any one of claims 1-46, wherein the transmembrane domain comprises a CD8 polypeptide.

48. The CAR of any one of claims 1-46, wherein the transmembrane domain comprises a CD28 polypeptide.

49. The CAR of any one of claims 1-48, wherein the intracellular domain comprises a CD3ζ polypeptide.

50. The CAR of claim 49, wherein the intracellular domain further comprises at least one signaling region.

51 . The CAR of claim 50 , wherein the at least one signaling region comprises a CD28 polypeptide, a 4-1BB polypeptide, an OX40 polypeptide, an ICOS polypeptide, a PD-1 polypeptide, a CTLA-4 polypeptide, a LAG-3 polypeptide, a 2B4 polypeptide, a BTLA polypeptide, or a combination thereof.

52 . The CAR of claim 50 or 51, wherein the signaling region is a co-stimulatory signaling region.

52 . The CAR of claim 51 , wherein the at least one co-stimulatory signaling region comprises a CD28 polypeptide, a 4-1BB polypeptide, an OX40 polypeptide, an ICOS polypeptide, a DAP-10 polypeptide, or a combination thereof.

54 . The CAR of claim 52 or 53 , wherein the at least one co-stimulatory signaling region comprises a CD28 polypeptide.

55. The CAR of claim 52 or 53, wherein the at least one co-stimulatory signaling region comprises a 4-1BB polypeptide.

56 . The CAR of any one of claims 1-53 , wherein the CAR comprises a transmembrane domain comprising a CD28 polypeptide, an intracellular domain comprising a CD3ζ polypeptide, and a co-stimulatory signaling domain comprising a CD28 polypeptide.

57 . The CAR of any one of claims 1-53 , wherein the CAR comprises a transmembrane domain comprising a CD8 polypeptide, an intracellular domain comprising a CD3ζ polypeptide, and an co-stimulatory signaling domain comprising a 4-1BB polypeptide.

58 . The CAR of any one of claims 1-57 , wherein the CAR is recombinantly expressed.

59 . The CAR of any one of claims 1-58 , wherein the CAR is expressed from a vector.

60 . The CAR of claim 59, wherein the vector is a γ-retroviral rector.

61. The CAR of claim 59, wherein the vector is a lentiviral rector.

62 . An isolated immunoresponsive cell comprising the CAR of any one of claims 1-61 .

63 . The isolated immunoresponsive cell of claim 62, wherein the immunoresponsive cell is transduced with the CAR.

64 . The isolated immunoresponsive cell of claim 62 or 63 , wherein the CAR is constitutively expressed on the surface of the immunoresponsive cell.

65 . The isolated immunoresponsive cell of any one of claims 62-64 , wherein the isolated immunoresponsive cell is further transduced with at least one co-stimulatory ligand such that the immunoresponsive cell expresses the at least one co-stimulatory ligand.

66 . The isolated immunoresponsive cell of claim 65 , wherein the at least one co-stimulatory ligand is selected from the group consisting of 4-1BBL, CD80, CD86, CD70, OX40L, CD48, TNFRSF14, and combinations thereof.

67 . The isolated immunoresponsive cell of any one of claims 62-66 , wherein the isolated immunoresponsive cell is further transduced with at least one cytokine such that the immunoresponsive cell secrets the at least one cytokine.

68 . The isolated immunoresponsive cell of claim 67 , wherein the at least one cytokine is selected from the group consisting of IL-2, IL-3, IL-6, IL-7, IL-11, IL-12, IL-15, IL-17, IL-21, and combinations thereof.

69 . The isolated immunoresponsive cell of any one of claims 62-68 , wherein the immunoresponsive cell is selected from the group consisting of a T cell, a Natural Killer (NK) cell, a cytotoxic T lymphocyte (CTL), a regulatory T cell, a human embryonic stem cell, a lymphoid progenitor cell, a T cell-precursor cell, and a pluripotent stem cell from which lymphoid cells may be differentiated.

70 . The isolated immunoresponsive cell of claim 69, wherein the immunoresponsive cell is a T cell.

71 . An isolated nucleic acid molecule encoding the chimeric antigen receptor (CAR) of any one of claims 1-61 .

72 . The isolated nucleic acid molecule of claim 71 , comprising a nucleic acid sequence selected from the group consisting of SEQ ID NOs:951-959.

73 . The isolated nucleic acid molecule of claim 71 or 72 , comprising a nucleic acid sequence having the sequence set forth in SEQ ID NO:951.

74 . The isolated nucleic acid molecule of claim 71 or 72 , comprising a nucleic acid sequence having the sequence set forth in SEQ ID NO:952.

75 . The isolated nucleic acid molecule of claim 71 or 72 , comprising a nucleic acid sequence having the sequence set forth in SEQ ID NO:953.

76 . The isolated nucleic acid molecule of claim 71 or 72 , comprising a nucleic acid sequence having the sequence set forth in SEQ ID NO:954.

77 . The isolated nucleic acid molecule of claim 71 or 72 , comprising a nucleic acid sequence having the sequence set forth in SEQ ID NO:955.

78 . The isolated nucleic acid molecule of claim 71 or 72 , comprising a nucleic acid sequence having the sequence set forth in SEQ ID NO:956.

79 . The isolated nucleic acid molecule of claim 71 or 72 , comprising a nucleic acid sequence having the sequence set forth in SEQ ID NO:957.

80 . The isolated nucleic acid molecule of claim 71 or 72 , comprising a nucleic acid sequence having the sequence set forth in SEQ ID NO:958.

81 . The isolated nucleic acid molecule of claim 71 or 72 , comprising a nucleic acid sequence having the sequence set forth in SEQ ID NO:959.

82 . A vector comprising the isolated nucleic acid molecule of any one of claims 71-81 .

83 . The vector of claim 82, wherein the vector is a γ-retroviral rector.

84. The vector of claim 82, wherein the vector is a lentiviral rector.

85 . A host cell expressing the nucleic acid molecule of any one of claims 71-81 .

86. The host cell of claim 85, wherein the host cell is a T cell.

87 . Use of an effective amount of the immunoresponsive cell of any one of claims 62-70 in the manufacture of a medicament for reducing tumor burden in a subject.

88 . The use of claim 87, wherein the immunoresponsive cell reduces the number of tumor cells.

89 . The use of claim 87, wherein the immunoresponsive cell reduces tumor size.

90 . The use of claim 87, wherein the immunoresponsive cell eradicates the tumor in the subject.

91 . The use of any one of claims 87-90 , wherein the tumor is selected from the group consisting of multiple myeloma, Non-Hodgkin Lymphoma (especially Mantle Cell), Hodgkin Lymphoma, Chronic Lymphocytic Leukemia (CLL), Acute lymphocytic leukemia (ALL), Hairy Cell Leukemia, Burketts Lymphoma, and Waldenstrom's Macroglobulinemia.

92 . The use of any one of claims87-91, wherein the tumor is multiple myeloma.

93 . The use of any one of claims 87-92 , wherein the subject is a human.

94 . The use of any one of claims 87-93 , wherein the immunoresponsive cell is a T cell.

95 . Use of an effective amount of the immunoresponsive cell of any one of claims 62-70 in the manufacture of a medicament for increasing or lengthening survival of a subject having a neoplasm.

96 . The use of claim 95 , wherein the neoplasm is selected from the group consisting of multiple myeloma, Non-Hodgkin Lymphoma (especially Mantle Cell), Hodgkin Lymphoma, Chronic Lymphocytic Leukemia (CLL), Acute lymphocytic leukemia (ALL), Hairy Cell Leukemia, Burketts Lymphoma, and Waldenstrom's Macroglobulinemia.

97 . The use of claim 95 or 96, wherein the neoplasm is multiple myeloma.

98 . The use of any one of claims 95-97 , wherein the immunoresponsive cell reduces or eradicates tumor burden in the subject.

99 . A method for producing an immunoresponsive cell that binds to Fc Receptor-like 5 (FcRL5), comprising introducing into the immunoresponsive cell a nucleic acid sequence that encodes a chimeric antigen receptor (CAR) of any one of claims 1-61 .

100 . A pharmaceutical composition comprising an effective amount of the immunoresponsive cell of any one of claims 62-70 and a pharmaceutically acceptable excipient.

101 . The pharmaceutical composition of claim 100, wherein the pharmaceutical composition is for treating a neoplasm.

102 . The pharmaceutical composition of claim 101 , wherein the neoplasm is selected from the group consisting of multiple myeloma, Non-Hodgkin Lymphoma (especially Mantle Cell), Hodgkin Lymphoma, Chronic Lymphocytic Leukemia (CLL), Acute lymphocytic leukemia (ALL), Hairy Cell Leukemia, Burketts Lymphoma, and Waldenstrom's Macroglobulinemia.

103 . The pharmaceutical composition of any one of claim 100-102, wherein the neoplasm is multiple myeloma.

104 . A kit for treating a neoplasm, comprising the immunoresponsive cell of any one of claims 62-70 .

105 . The kit of claim 104, wherein the kit further comprises written instructions for using the immunoresponsive cell for treating a subject having a neoplasm.

106 . The kit of claim 104 or 105 , wherein the neoplasm is selected from the group consisting of multiple myeloma, Non-Hodgkin Lymphoma (especially Mantle Cell), Hodgkin Lymphoma, Chronic Lymphocytic Leukemia (CLL), Acute lymphocytic leukemia (ALL), Hairy Cell Leukemia, Burketts Lymphoma, and Waldenstrom's Macroglobulinemia.

107 . The kit of any one of claim 104-106, wherein the neoplasm is multiple myeloma.