

polypeptide. In some embodiments, the antibody binds the extracellular domain (e.g., the D1 domain) of a human SIRP- α v1 polypeptide, the extracellular domain (e.g., the D1 domain) of a human SIRP- α v2 polypeptide, or both. In one aspect, the present disclosure refers to an isolated antibody that binds an extracellular domain of a human SIRP- α polypeptide, wherein the antibody binds the extracellular domain of a human SIRP- α v1 polypeptide, the extracellular domain of a human SIRP- α v2 polypeptide, or both; and wherein the antibody comprises:

(a) a heavy chain variable (VH) domain comprising:

(i) an HVR-H1 sequence comprising the amino acid sequence of $X_1X_2AX_3S$, wherein X_1 is S or T; X_2 is N, Y, H, or D; and X_3 is M, L, or V (SEQ ID NO:297);

(ii) an HVR-H2 sequence comprising the amino acid sequence of $GISX_1X_2X_3X_4X_5X_6YYX_7X_8SX_9KG$, wherein X_1 is A or S; X_2 is G, S, or absent; X_3 is S, D or G; X_4 is G or S; X_5 is D, S, or G; X_6 is T or A; X_7 is P, G, V, I, A, or S; X_8 is A, D, or G; and X_9 is V or M (SEQ ID NO:298); and

(iii) an HVR-H3 sequence comprising the amino acid sequence of ETWNHLFDY (SEQ ID NO:193); and

(b) a light chain variable (VL) domain comprising:

(i) an HVR-L1 sequence comprising the amino acid sequence of $SGGX_1X_2X_3SX_4YYX_5$, wherein X_1 is D, G, S, I, or absent; X_2 is S, W, G, Y, D, or absent; X_3 is S, Y, T, or D; X_4 is H, T, S, or Y; and X_5 is G or A (SEQ ID NO:299);

(ii) an HVR-L2 sequence comprising the amino acid sequence of $SDX_1X_2RPX_3$, wherein X_1 is D or N; X_2 is E, K, or Q; and X_3 is S or P (SEQ ID NO:300); and

(iii) an HVR-L3 sequence comprising the amino acid sequence of $X_1X_2YDX_3X_4X_5YX_6NX_7$, wherein X_1 is G or A; X_2 is G or A; X_3 is G, Y, Q, S, or A; X_4 is S, R, or T; X_5 is T or S; X_6 is A, I, V, L, or T; and X_7 is T, A, D, or P (SEQ ID NO:301). In some embodiments, the antibody binds an extracellular domain of a human SIRP- α v1 polypeptide comprising the amino acid sequence of EEELQVIQPDKSVLVAAGETATLRCTATSLIPVGPIQWFRGAGPGRELIYNQKEGHFPRVTTVSDLTK RNNMDFSIRIGNITPADAGTYCYVKFRKGSPDDVEFKSGAGTELSVRAKPS (SEQ ID NO:5). In some embodiments, the antibody binds an extracellular domain of a human SIRP- α v2 polypeptide comprising the amino acid sequence of

EEELQVIQPDKSVSVAAGESAILHCTVTSLIPVGPIQWFRGAGPARELIYNQKEGHFPRVTTVSESTK RENMDFSISISNITPADAGTYCYVKFRKGSPDTEFKSGAGTELSVRAKPS (SEQ ID NO:6). In some

embodiments, the antibody binds an extracellular domain of a human SIRP- α v1 polypeptide comprising the amino acid sequence of

EEELQVIQPDKSVLVAAGETATLRCTATSLIPVGPIQWFRGAGPGRELIYNQKEGHFPRVTTVSDLTK RNNMDFSIRIGNITPADAGTYCYVKFRKGSPDDVEFKSGAGTELSVRAKPS (SEQ ID NO:5) and

binds an extracellular domain of a human SIRP- α v2 polypeptide comprising the amino acid sequence of EEELQVIQPDKSVSVAAGESAILHCTVTSLIPVGPIQWFRGAGPARELIYNQKEGHFPRVTTVSESTK RENMDFSISISNITPADAGTYCYVKFRKGSPDTEFKSGAGTELSVRAKPS (SEQ ID NO:6). In some

embodiments, the antibody binds the extracellular domains (e.g., the D1 domains) of three, four, five, six, seven, eight, nine or ten different human SIRP- α variant polypeptides. In some embodiments, each of the three, four, five, six, seven, eight, nine or ten different human SIRP- α variant polypeptides comprises an extracellular domain comprising an amino acid sequence selected from the group consisting of SEQ ID NOs: 5, 6, and 76-83. In some embodiments, the antibody binds an extracellular domain (e.g., the D1 domain) of a monkey SIRP- α polypeptide. In some embodiments, the monkey SIRP- α polypeptide is a cynomolgus SIRP- α polypeptide. In some embodiments, the antibody binds the extracellular domains (e.g., the D1 domains) of at least two different monkey SIRP- α variant polypeptides. In some embodiments, the antibody binds an extracellular domain of a cynomolgus SIRP- α polypeptide comprising the amino acid sequence of SEQ ID NO:11, an extracellular domain of a cynomolgus SIRP- α polypeptide comprising the amino acid sequence of SEQ ID NO:12, or both. In some embodiments, the antibody binds an extracellular domain (e.g., the D1 domain) of a murine SIRP- α

NO:166, 172, 178, or 184. In some embodiments, the antibody comprises a VH domain comprising the amino acid sequence of SEQ ID NO:141 and/or a VL domain comprising an HVR-L1 comprising the amino acid sequence of SEQ ID NO:164, 170, 176, or 182; an HVR-L2 comprising the amino acid sequence of SEQ ID NO:165, 171, 177, or 183; and an HVR-L3 comprising the amino acid sequence of SEQ ID NO:166, 172, 178, or 184. In some embodiments, one, two, three, four, five, or six of the HVR sequences are defined by Kabat. In some embodiments, one, two, three, four, five, or six of the HVR sequences are defined by Chothia. In some embodiments, one, two, three, four, five, or six of the HVR sequences are defined by IMGT. In some embodiments, the antibody comprises HVR sequences as defined by two or more of Kabat, Chothia, and IMGT (*e.g.*, the antibody comprises one or more HVR sequences as defined by one delineation and one or more HVR sequences as defined by a different delineation).

[0012] In other examples, provided herein is an isolated antibody that binds an extracellular domain of a human SIRP- α polypeptide (*e.g.*, the D1 domain), wherein the antibody comprises: (a) a heavy chain variable (VH) domain comprising (i) an HVR-H1 sequence comprising the amino acid sequence of NFAMT (SEQ ID NO:175), NFAVT (SEQ ID NO:204), or NFALT (SEQ ID NO:305), (ii) an HVR-H2 sequence comprising the amino acid sequence of TIGSGDTYYADSVKG (SEQ ID NO:144), and (iii) an HVR-H3 sequence comprising the amino acid sequence of DSTVSWSGDFFDY (SEQ ID NO:145); and/or (b) a light chain variable (VL) domain comprising (i) an HVR-L1 sequence comprising the amino acid sequence of RASQNVKNDLA (SEQ ID NO:146), (ii) an HVR-L2 sequence comprising the amino acid sequence of AARIRET (SEQ ID NO:147), and (iii) an HVR-L3 sequence comprising the amino acid sequence of QQYYDWPPFT (SEQ ID NO:148). In some embodiments, the VH domain comprises an amino acid sequence that is at least 90% identical to the amino acid sequence of SEQ ID NO:120, 335, 246, 258, or 327; and/or the VL domain comprises an amino acid sequence that is at least 90% identical to the amino acid sequence of SEQ ID NO:97 or 312. In some embodiments, the VH domain comprises the amino acid sequence of SEQ ID NO:246, and the VL domain comprises the amino acid sequence of SEQ ID NO:97; the VH domain comprises the amino acid sequence of SEQ ID NO:258, and the VL domain comprises the amino acid sequence of SEQ ID NO:97; the VH domain comprises the amino acid sequence of SEQ ID NO:335, and the VL domain comprises the amino acid sequence of SEQ ID NO:97; the VH domain comprises the amino acid sequence of SEQ ID NO:327, and the VL domain comprises the

amino acid sequence of SEQ ID NO:97; the VH domain comprises the amino acid sequence of SEQ ID NO:246, and the VL domain comprises the amino acid sequence of SEQ ID NO:312; the VH domain comprises the amino acid sequence of SEQ ID NO:258, and the VL domain comprises the amino acid sequence of SEQ ID NO:312; the VH domain comprises the amino acid sequence of SEQ ID NO:335, and the VL domain comprises the amino acid sequence of SEQ ID NO:312; or the VH domain comprises the amino acid sequence of SEQ ID NO:327, and the VL domain comprises the amino acid sequence of SEQ ID NO:312.

[0013] In other examples, provided herein is an isolated antibody that binds an extracellular domain of a human SIRP- α polypeptide (e.g., the D1 domain), wherein the antibody comprises: (a) a heavy chain variable (VH) domain comprising (i) an HVR-H1 sequence comprising the amino acid sequence of IYAMS (SEQ ID NO:269), IYAVS (SEQ ID NO:213), or IYALS (SEQ ID NO:306), (ii) an HVR-H2 sequence comprising the amino acid sequence of TIGADDTYYADSVKG (SEQ ID NO:150), and (iii) an HVR-H3 sequence comprising the amino acid sequence of DSTVGWSGDFFDY (SEQ ID NO:151); and/or (b) a light chain variable (VL) domain comprising (i) an HVR-L1 sequence comprising the amino acid sequence of RASQNVRSDIA (SEQ ID NO:152), (ii) an HVR-L2 sequence comprising the amino acid sequence of AASSRDT (SEQ ID NO:153), and (iii) an HVR-L3 sequence comprising the amino acid sequence of QQYYDWPPFT (SEQ ID NO:148). In some embodiments, the VH domain comprises an amino acid sequence that is at least 90% identical to the amino acid sequence of SEQ ID NO:341, 247, 259, or 328; and/or the VL domain comprises an amino acid sequence that is at least 90% identical to the amino acid sequence of SEQ ID NO:104 or 248. In some embodiments, the VH domain comprises the amino acid sequence of SEQ ID NO:127, and the VL domain comprises the amino acid sequence of SEQ ID NO:104; the VH domain comprises the amino acid sequence of SEQ ID NO:247, and the VL domain comprises the amino acid sequence of SEQ ID NO:104; the VH domain comprises the amino acid sequence of SEQ ID NO:259, and the VL domain comprises the amino acid sequence of SEQ ID NO:104; the VH domain comprises the amino acid sequence of SEQ ID NO:328, and the VL domain comprises the amino acid sequence of SEQ ID NO:104; the VH domain comprises the amino acid sequence of SEQ ID NO:127, and the VL domain comprises the amino acid sequence of SEQ ID NO:248; the VH domain comprises the amino acid sequence of SEQ ID NO:247, and the VL domain comprises the amino acid sequence of SEQ ID NO:248; the

VH domain comprises the amino acid sequence of SEQ ID NO:259, and the VL domain comprises the amino acid sequence of SEQ ID NO:248; or the VH domain comprises the amino acid sequence of SEQ ID NO:328, and the VL domain comprises the amino acid sequence of SEQ ID NO:248.

[0014] In other examples, provided herein is an isolated antibody that binds an extracellular domain of a human SIRP- α polypeptide (e.g., the D1 domain), wherein the antibody comprises: (a) a heavy chain variable (VH) domain comprising: (i) an HVR-H1 sequence comprising the amino acid sequence of $X_1X_2DX_3N$, wherein X_1 is S or T; X_2 is Y or S; and X_3 is M, L, or V (SEQ ID NO:307); (ii) an HVR-H2 sequence comprising the amino acid sequence of $LISGSGEIX_1YYADSVKG$, wherein X_1 is I or T (SEQ ID NO:308); and (iii) an HVR-H3 sequence comprising the amino acid sequence of $EX_1X_2X_3YRFFDX_4$, wherein X_1 is N or D; X_2 is N or D; X_3 is R or M; and X_4 is D or Y (SEQ ID NO:309); and/or (b) a light chain variable (VL) domain comprising: (i) an HVR-L1 sequence comprising the amino acid sequence of RAX_1QSVYX_2YLA , wherein X_1 is S or D; and X_2 is T or S (SEQ ID NO:310); (ii) an HVR-L2 sequence comprising the amino acid sequence of $X_1AX_2X_3RAX_4$, wherein X_1 is G, A, or D; X_2 is S or R; X_3 is S, N, or T; and X_4 is T or A (SEQ ID NO:311); and (iii) an HVR-L3 sequence comprising the amino acid sequence of $QQYYDRPPLT$ (SEQ ID NO:160). In some embodiments, the antibody comprises (a) a heavy chain variable (VH) domain comprising (i) an HVR-H1 sequence comprising the amino acid sequence of $SYDMN$ (SEQ ID NO:270), $SYDVN$ (SEQ ID NO:221), or $SYDLN$ (SEQ ID NO:313), (ii) an HVR-H2 sequence comprising the amino acid sequence of $LISGSGEIIYYADSVKG$ (SEQ ID NO:156), and (iii) an HVR-H3 sequence comprising the amino acid sequence of $ENNRYYRFFDD$ (SEQ ID NO:157); and/or (b) a light chain variable (VL) domain comprising (i) an HVR-L1 sequence comprising the amino acid sequence of $RASQSVYTYLA$ (SEQ ID NO:158), (ii) an HVR-L2 sequence comprising the amino acid sequence of $GASSRAT$ (SEQ ID NO:159), and (iii) an HVR-L3 sequence comprising the amino acid sequence of $QQYYDRPPLT$ (SEQ ID NO:160). In some embodiments, the VH domain comprises an amino acid sequence that is at least 90% identical to the amino acid sequence of SEQ ID NO: 249, 133, 260, or 329; and/or the VL domain comprises an amino acid sequence that is at least 90% identical to the amino acid sequence of SEQ ID NO:134, 250, or 251. In some embodiments, the VH domain comprises the amino acid sequence of SEQ ID NO:133, and the VL domain comprises the amino acid sequence of SEQ ID NO:134; the VH domain comprises the

amino acid sequence of SEQ ID NO:260, and the VL domain comprises the amino acid sequence of SEQ ID NO:134; the VH domain comprises the amino acid sequence of SEQ ID NO:329, and the VL domain comprises the amino acid sequence of SEQ ID NO:134; the VH domain comprises the amino acid sequence of SEQ ID NO:133, and the VL domain comprises the amino acid sequence of SEQ ID NO:250; the VH domain comprises the amino acid sequence of SEQ ID NO:260, and the VL domain comprises the amino acid sequence of SEQ ID NO:250; the VH domain comprises the amino acid sequence of SEQ ID NO:329, and the VL domain comprises the amino acid sequence of SEQ ID NO:250; the VH domain comprises the amino acid sequence of SEQ ID NO:133, and the VL domain comprises the amino acid sequence of SEQ ID NO:251; the VH domain comprises the amino acid sequence of SEQ ID NO:260, and the VL domain comprises the amino acid sequence of SEQ ID NO:251; the VH domain comprises the amino acid sequence of SEQ ID NO:329, and the VL domain comprises the amino acid sequence of SEQ ID NO:251; the VH domain comprises the amino acid sequence of SEQ ID NO:249, and the VL domain comprises the amino acid sequence of SEQ ID NO:134; the VH domain comprises the amino acid sequence of SEQ ID NO:249, and the VL domain comprises the amino acid sequence of SEQ ID NO:250; or the VH domain comprises the amino acid sequence of SEQ ID NO:249, and the VL domain comprises the amino acid sequence of SEQ ID NO:251.

[0015] In other examples, provided herein is an isolated antibody that binds an extracellular domain of a human SIRP- α polypeptide (e.g., the D1 domain), wherein the antibody comprises: a heavy chain variable (VH) domain comprising: an HVR-H1 sequence comprising the amino acid sequence of $X_1X_2AX_3S$, wherein X_1 is S or T; X_2 is N, Y, H, or D; and X_3 is M, L, or V (SEQ ID NO:297); an HVR-H2 sequence comprising the amino acid sequence of $GISX_1X_2X_3X_4X_5X_6YYX_7X_8SX_9KG$, wherein X_1 is A or S; X_2 is G, S, or absent; X_3 is S, D or G; X_4 is G or S; X_5 is D, S, or G; X_6 is T or A; X_7 is P, G, V, I, A, or S; X_8 is A, D, or G; and X_9 is V or M (SEQ ID NO:298); and an HVR-H3 sequence comprising the amino acid sequence of ETWNHLFDY (SEQ ID NO:193); and/or a light chain variable (VL) domain comprising: an HVR-L1 sequence comprising the amino acid sequence of $SGGX_1X_2X_3SX_4YYX_5$, wherein X_1 is D, G, S, I, or absent; X_2 is S, W, G, Y, D, or absent; X_3 is S, Y, T, or D; X_4 is H, T, S, or Y; and X_5 is G or A (SEQ ID NO:299); an HVR-L2 sequence comprising the amino acid sequence of $SDX_1X_2RPX_3$, wherein X_1 is D or N; X_2 is E, K, or Q; and X_3 is S or P (SEQ ID NO:300); and an HVR-L3 sequence

comprising the amino acid sequence of $X_1X_2YDX_3X_4X_5YX_6NX_7$, wherein X_1 is G or A; X_2 is G or A; X_3 is G, Y, Q, S, or A; X_4 is S, R, or T; X_5 is T or S; X_6 is A, I, V, L, or T; and X_7 is T, A, D, or P (SEQ ID NO:301). In other examples, provided herein is an isolated antibody that binds an extracellular domain of a human SIRP- α polypeptide (e.g., the D1 domain), wherein the antibody comprises: a heavy chain variable (VH) domain comprising: a heavy chain variable (VH) domain comprising: an HVR-H1 sequence comprising the amino acid sequence of SX_1AX_2S , wherein X_1 is N or Y; and wherein X_2 is M, L, or V (SEQ ID NO:302); an HVR-H2 sequence comprising the amino acid sequence of $GISX_1GX_2X_3DTYYX_4X_5SVKG$, wherein X_1 is A or S; X_2 is G or absent; X_3 is S or G; X_4 is P, G, or V; and X_5 is A or D (SEQ ID NO:303); and an HVR-H3 sequence comprising the amino acid sequence of ETWNHLFDY (SEQ ID NO:193); and/or a light chain variable (VL) domain comprising: an HVR-L1 sequence comprising the amino acid sequence of $SGGX_1YSSYYA$, wherein X_1 is S or A (SEQ ID NO:304); an HVR-L2 sequence comprising the amino acid sequence of SDDKRPS (SEQ ID NO:336); and an HVR-L3 sequence comprising the amino acid sequence of GGYDQSSYTNP (SEQ ID NO:172). In some embodiments, the VH domain comprises (i) an HVR-H1 sequence comprising the amino acid sequence of SNAMS (SEQ ID NO:194), SNAVS (SEQ ID NO:271), or SNALS (SEQ ID NO:318), (ii) an HVR-H2 sequence comprising the amino acid sequence of GISAGGSDTYYPASVKG (SEQ ID NO:195), and (iii) an HVR-H3 sequence comprising the amino acid sequence of ETWNHLFDY (SEQ ID NO:193). In some embodiments, the VH domain comprises an amino acid sequence that is at least 90% identical to the amino acid sequence of SEQ ID NO:135, 263, 264, or 330. In some embodiments, the VH domain comprises (i) an HVR-H1 sequence comprising the amino acid sequence of SNAMS (SEQ ID NO:194), SNAVS (SEQ ID NO:271), or SNALS (SEQ ID NO:318), (ii) an HVR-H2 sequence comprising the amino acid sequence of GISSGSDTYYGDSVKG (SEQ ID NO:197), and (iii) an HVR-H3 sequence comprising the amino acid sequence of ETWNHLFDY (SEQ ID NO:193). In some embodiments, the VH domain comprises an amino acid sequence that is at least 90% identical to the amino acid sequence of SEQ ID NO:137, 265, 266, or 331. In some embodiments, the VH domain comprises (i) an HVR-H1 sequence comprising the amino acid sequence of SYAMS (SEQ ID NO:200), SYAVS (SEQ ID NO:272), or SYALS (SEQ ID NO:319), (ii) an HVR-H2 sequence comprising the amino acid sequence of GISSGGDTYYVDSVKG (SEQ ID NO:201), and (iii) an HVR-H3 sequence comprising the amino acid sequence of ETWNHLFDY (SEQ ID NO:193). In

VH domain comprises the amino acid sequence of SEQ ID NO:331, and the VL domain comprises the amino acid sequence of SEQ ID NO:252; the VH domain comprises the amino acid sequence of SEQ ID NO:267, and the VL domain comprises the amino acid sequence of SEQ ID NO:252; the VH domain comprises the amino acid sequence of SEQ ID NO:268, and the VL domain comprises the amino acid sequence of SEQ ID NO:252; the VH domain comprises the amino acid sequence of SEQ ID NO:332, and the VL domain comprises the amino acid sequence of SEQ ID NO:252; the VH domain comprises the amino acid sequence of SEQ ID NO:263, and the VL domain comprises the amino acid sequence of SEQ ID NO:262; the VH domain comprises the amino acid sequence of SEQ ID NO:264, and the VL domain comprises the amino acid sequence of SEQ ID NO:262; the VH domain comprises the amino acid sequence of SEQ ID NO:330, and the VL domain comprises the amino acid sequence of SEQ ID NO:262; the VH domain comprises the amino acid sequence of SEQ ID NO:265, and the VL domain comprises the amino acid sequence of SEQ ID NO:262; the VH domain comprises the amino acid sequence of SEQ ID NO:266, and the VL domain comprises the amino acid sequence of SEQ ID NO:262; the VH domain comprises the amino acid sequence of SEQ ID NO:331, and the VL domain comprises the amino acid sequence of SEQ ID NO:262; the VH domain comprises the amino acid sequence of SEQ ID NO:267, and the VL domain comprises the amino acid sequence of SEQ ID NO:262; the VH domain comprises the amino acid sequence of SEQ ID NO:268, and the VL domain comprises the amino acid sequence of SEQ ID NO:262; the VH domain comprises the amino acid sequence of SEQ ID NO:332, and the VL domain comprises the amino acid sequence of SEQ ID NO:262; the VH domain comprises the amino acid sequence of SEQ ID NO:135, and the VL domain comprises the amino acid sequence of SEQ ID NO:262; the VH domain comprises the amino acid sequence of SEQ ID NO:137, and the VL domain comprises the amino acid sequence of SEQ ID NO:262; or the VH domain comprises the amino acid sequence of SEQ ID NO:139, and the VL domain comprises the amino acid sequence of SEQ ID NO:262.

[0016] In other examples, provided herein is an isolated antibody that binds an extracellular domain of a human SIRP- α polypeptide (e.g., the D1 domain), wherein the antibody binds to a human SIRP- α v1 polypeptide at one or more amino acid positions selected from the group consisting of I31, V33, Q52, K53, T67, R69, N70, and K96, according to SEQ ID NO:296. In some embodiments, the antibody binds to the human SIRP- α v1 polypeptide at I31, V33, Q52, K53, T67, R69, N70, and K96, according to SEQ

ID NO:296. In some embodiments, the antibody further binds to the human SIRP- α v1 polypeptide at one or more amino acid positions selected from the group consisting of L30, P32, E54, T62, N71, M72, F74, and R95, according to SEQ ID NO:296. In some embodiments, the antibody further binds to the human SIRP- α v1 polypeptide at L30, P32, E54, T62, N71, M72, F74, and R95, according to SEQ ID NO:296.

[0017] In other examples, provided herein is an isolated antibody that binds an extracellular domain of a human SIRP- α polypeptide (e.g., the D1 domain), wherein the antibody binds to a human SIRP- α v1 polypeptide at one or more amino acid positions selected from the group consisting of I7, P9, D10, K11, S12, A42, A108, and E111, according to SEQ ID NO:296. In some embodiments, the antibody binds to the human SIRP- α v1 polypeptide at K11, A42, A108, and E111, according to SEQ ID NO:296. In some embodiments, the antibody binds to the human SIRP- α v1 polypeptide at I7, P9, D10, K11, S12, A108, and E111, according to SEQ ID NO:296. In some embodiments, the antibody further binds to the human SIRP- α v1 polypeptide at one or more amino acid positions selected from the group consisting of L14, T26, T28, T88, Y90, S106, S113, and A116, according to SEQ ID NO:296. In some embodiments, the antibody further binds to the human SIRP- α v1 polypeptide at L14, T88, Y90, S106, S113, and A116 of human SIRP- α v1, according to SEQ ID NO:296. In some embodiments, the antibody further binds to the human SIRP- α v1 polypeptide at L14, T26, and T28, according to SEQ ID NO:296.

[0018] In other examples, provided herein is an isolated antibody that binds an extracellular domain of a human SIRP- α polypeptide (e.g., the D1 domain), wherein the antibody binds to a human SIRP- α v1 polypeptide at one or more amino acid positions selected from the group consisting of E47, L48, P58, R59, T82, and A84, according to SEQ ID NO:296. In some embodiments, the antibody binds to the human SIRP- α v1 polypeptide at E47, L48, P58, R59, T82, and A84, according to SEQ ID NO:296. In some embodiments, the antibody further binds to the human SIRP- α v1 polypeptide at one or more amino acid positions selected from the group consisting of A17, P44, G45, I49, E54, G55, H56, F57, and P83, according to SEQ ID NO:296. In some embodiments, the antibody further binds to the human SIRP- α v1 polypeptide at A17, P44, G45, I49, E54, G55, H56, F57, and P83 of human SIRP- α v1, according to SEQ ID NO:296.

[0019] In other examples, provided herein is an isolated antibody that binds an extracellular domain of a human SIRP- α polypeptide (e.g., the D1 domain), wherein the

antibody binds the extracellular domain of a human SIRP- α v1 polypeptide with a dissociation constant (K_D) of less than 100nM, and wherein the antibody blocks binding between an extracellular domain of a human SIRP- α polypeptide and an IgSF domain of a human CD47 polypeptide. In some embodiments, the antibody binds the extracellular domain of a human SIRP- α v2 polypeptide with a dissociation constant (K_D) of less than 100nM. In some embodiments, the antibody binds the D1 domain of a human SIRP- α v1 polypeptide and the D1 domain of a human SIRP- α v2 polypeptide. In some embodiments, the antibody binds an extracellular domain of a cynomolgus SIRP- α polypeptide. In some embodiments, the antibody binds an extracellular domain of a human SIRP- β polypeptide. In some embodiments, the antibody binds an extracellular domain of a human SIRP- γ polypeptide. In some embodiments, the antibody binds an extracellular domain of a murine SIRP- α polypeptide.

[0020] In other examples, provided herein is an isolated antibody that binds an extracellular domain of a human SIRP- α polypeptide (e.g., the D1 domain), wherein the antibody binds the D1 domain of a human SIRP- α polypeptide, and wherein the antibody does not block binding between an extracellular domain of a human SIRP- α polypeptide and an IgSF domain of a human CD47 polypeptide. In some embodiments, the antibody binds the D1 domain of a human SIRP- α with a dissociation constant (K_D) of less than 100nM. In some embodiments, the antibody binds the D1 domain of a human SIRP- α v1 polypeptide with a dissociation constant (K_D) of less than 100nM and/or binds the D1 domain of a human SIRP- α v2 polypeptide with a dissociation constant (K_D) of less than 100nM. In some embodiments, the antibody binds the D1 domain of a human SIRP- α v1 polypeptide and the D1 domain of a human SIRP- α v2 polypeptide. In some embodiments, the antibody binds an extracellular domain of a cynomolgus SIRP- α polypeptide. In some embodiments, the antibody binds an extracellular domain of a human SIRP- β polypeptide. In some embodiments, the antibody binds an extracellular domain of a murine SIRP- α polypeptide.

[0021] In other examples, provided herein is an isolated antibody that binds an extracellular domain of a human SIRP- α polypeptide (e.g., the D1 domain), wherein the antibody competes for binding the extracellular domain of the human SIRP- α polypeptide with a reference anti-SIRP- α antibody comprising a heavy chain variable (VH) domain and a light chain variable (VL) domain of an antibody selected from the group consisting of antibodies 119, 120, 121, 122, 21, 25, 27, 66, and 135. In other examples, provided herein is

an isolated antibody that binds an extracellular domain of a human SIRP- α polypeptide (e.g., the D1 domain), wherein the antibody competes for binding the extracellular domain of the human SIRP- α polypeptide with a reference anti-SIRP- α antibody comprising: (a) a heavy chain variable (VH) domain comprising the amino acid sequence of SEQ ID NO:120 and a light chain variable (VL) domain comprising the amino acid sequence of SEQ ID NO:97; (b) a heavy chain variable (VH) domain comprising the amino acid sequence of SEQ ID NO:121 and a light chain variable (VL) domain comprising the amino acid sequence of SEQ ID NO:98; (c) a heavy chain variable (VH) domain comprising the amino acid sequence of SEQ ID NO:130 and a light chain variable (VL) domain comprising the amino acid sequence of SEQ ID NO:107; (d) a heavy chain variable (VH) domain comprising the amino acid sequence of SEQ ID NO:122 and a light chain variable (VL) domain comprising the amino acid sequence of SEQ ID NO:99; (e) a heavy chain variable (VH) domain comprising the amino acid sequence of SEQ ID NO:135 and a light chain variable (VL) domain comprising the amino acid sequence of SEQ ID NO:136; (f) a heavy chain variable (VH) domain comprising the amino acid sequence of SEQ ID NO:137 and a light chain variable (VL) domain comprising the amino acid sequence of SEQ ID NO:138; (g) a heavy chain variable (VH) domain comprising the amino acid sequence of SEQ ID NO:139 and a light chain variable (VL) domain comprising the amino acid sequence of SEQ ID NO:140; (h) a heavy chain variable (VH) domain comprising the amino acid sequence of SEQ ID NO:141 and a light chain variable (VL) domain comprising the amino acid sequence of SEQ ID NO:142; or (i) a heavy chain variable (VH) domain comprising the amino acid sequence of SEQ ID NO:127 and a light chain variable (VL) domain comprising the amino acid sequence of SEQ ID NO:104.

[0022] In other examples, provided herein is an isolated antibody that binds an extracellular domain of a human SIRP- α polypeptide (e.g., the D1 domain), wherein the antibody competes for binding the extracellular domain of the human SIRP- α polypeptide with a reference anti-SIRP- α antibody comprising a heavy chain variable (VH) domain and a light chain variable (VL) domain of an antibody selected from the group consisting of antibodies 136 and 137. In other examples, provided herein is an isolated antibody that binds an extracellular domain of a human SIRP- α polypeptide (e.g., the D1 domain), wherein the antibody competes for binding the extracellular domain of the human SIRP- α polypeptide with a reference anti-SIRP- α antibody comprising: (a) a heavy chain variable (VH) domain comprising the amino acid sequence of SEQ ID NO:133 and a light chain variable (VL)

domain comprising the amino acid sequence of SEQ ID NO:134; or (b) a heavy chain variable (VH) domain comprising the amino acid sequence of SEQ ID NO:128 and a light chain variable (VL) domain comprising the amino acid sequence of SEQ ID NO:105.

[0023] In other examples, provided herein is an isolated antibody that binds an extracellular domain of a human SIRP- α polypeptide (e.g., the D1 domain), wherein the antibody competes for binding the extracellular domain of the human SIRP- α polypeptide with a reference anti-SIRP- α antibody comprising a heavy chain variable (VH) domain and a light chain variable (VL) domain of an antibody selected from the group consisting of antibodies 3, 213, 173, and 209. In other examples, provided herein is an isolated antibody that binds an extracellular domain of a human SIRP- α polypeptide (e.g., the D1 domain), wherein the antibody competes for binding the extracellular domain of the human SIRP- α polypeptide with a reference anti-SIRP- α antibody comprising: (a) a heavy chain variable (VH) domain comprising the amino acid sequence of SEQ ID NO:242 and a light chain variable (VL) domain comprising the amino acid sequence of SEQ ID NO:243; (b) a heavy chain variable (VH) domain comprising the amino acid sequence of SEQ ID NO:275 and a light chain variable (VL) domain comprising the amino acid sequence of SEQ ID NO:276; (c) a heavy chain variable (VH) domain comprising the amino acid sequence of SEQ ID NO:278 and a light chain variable (VL) domain comprising the amino acid sequence of SEQ ID NO:279; or (d) a heavy chain variable (VH) domain comprising the amino acid sequence of SEQ ID NO:280 and a light chain variable (VL) domain comprising the amino acid sequence of SEQ ID NO:281.

[0024] In other examples, provided herein is an isolated antibody that binds an extracellular domain of a human SIRP- α polypeptide (e.g., the D1 domain), wherein the antibody competes for binding the extracellular domain of the human SIRP- α polypeptide with a reference anti-SIRP- α antibody comprising a heavy chain variable (VH) domain and a light chain variable (VL) domain of an antibody selected from the group consisting of antibodies 115, 116, 117, 118, and 132. In other examples, provided herein is an isolated antibody that binds an extracellular domain of a human SIRP- α polypeptide (e.g., the D1 domain), wherein the antibody competes for binding the extracellular domain of the human SIRP- α polypeptide with a reference anti-SIRP- α antibody comprising: (a) a heavy chain variable (VH) domain comprising the amino acid sequence of SEQ ID NO:116 and a light chain variable (VL) domain comprising the amino acid sequence of SEQ ID NO:93; (b) a heavy chain variable (VH) domain comprising the amino acid sequence of SEQ ID NO:117

and a light chain variable (VL) domain comprising the amino acid sequence of SEQ ID NO:94; (c) a heavy chain variable (VH) domain comprising the amino acid sequence of SEQ ID NO:118 and a light chain variable (VL) domain comprising the amino acid sequence of SEQ ID NO:95; (d) a heavy chain variable (VH) domain comprising the amino acid sequence of SEQ ID NO:119 and a light chain variable (VL) domain comprising the amino acid sequence of SEQ ID NO:96; or (e) a heavy chain variable (VH) domain comprising the amino acid sequence of SEQ ID NO:282 and a light chain variable (VL) domain comprising the amino acid sequence of SEQ ID NO:283.

[0025] In other examples, provided herein is an isolated antibody that binds an extracellular domain of a human SIRP- α polypeptide (e.g., the D1 domain), wherein the antibody competes for binding the extracellular domain of the human SIRP- α polypeptide with a reference anti-SIRP- α antibody comprising a heavy chain variable (VH) domain and a light chain variable (VL) domain of an antibody selected from the group consisting of antibodies 218, 123, 149, 161, 162, and 194. In other examples, provided herein is an isolated antibody that binds an extracellular domain of a human SIRP- α polypeptide (e.g., the D1 domain), wherein the antibody competes for binding the extracellular domain of the human SIRP- α polypeptide with a reference anti-SIRP- α antibody comprising: (a) a heavy chain variable (VH) domain comprising the amino acid sequence of SEQ ID NO:284 and a light chain variable (VL) domain comprising the amino acid sequence of SEQ ID NO:285; (b) a heavy chain variable (VH) domain comprising the amino acid sequence of SEQ ID NO:123 and a light chain variable (VL) domain comprising the amino acid sequence of SEQ ID NO:100; (c) a heavy chain variable (VH) domain comprising the amino acid sequence of SEQ ID NO:286 and a light chain variable (VL) domain comprising the amino acid sequence of SEQ ID NO:287; (d) a heavy chain variable (VH) domain comprising the amino acid sequence of SEQ ID NO:288 and a light chain variable (VL) domain comprising the amino acid sequence of SEQ ID NO:289; (e) a heavy chain variable (VH) domain comprising the amino acid sequence of SEQ ID NO:290 and a light chain variable (VL) domain comprising the amino acid sequence of SEQ ID NO:291; or (f) a heavy chain variable (VH) domain comprising the amino acid sequence of SEQ ID NO:292 and a light chain variable (VL) domain comprising the amino acid sequence of SEQ ID NO:293.

[0026] In other examples, provided herein is an isolated antibody that binds an extracellular domain of a human SIRP- α polypeptide (e.g., the D1 domain), wherein the antibody competes for binding the extracellular domain of the human SIRP- α polypeptide

with a reference anti-SIRP- α antibody comprising a heavy chain variable (VH) domain and a light chain variable (VL) domain of antibody 45. In other examples, provided herein is an isolated antibody that binds an extracellular domain of a human SIRP- α polypeptide (e.g., the D1 domain), wherein the antibody competes for binding the extracellular domain of the human SIRP- α polypeptide with a reference anti-SIRP- α antibody comprising a heavy chain variable (VH) domain comprising the amino acid sequence of SEQ ID NO:244 and a light chain variable (VL) domain comprising the amino acid sequence of SEQ ID NO:245.

[0027] In some embodiments of any of the above embodiments, the antibody enhances phagocytosis by a macrophage expressing a human SIRP- α polypeptide. In some embodiments, the antibody enhances activation of a dendritic cell expressing a human SIRP- α polypeptide. In some embodiments, the antibody inhibits *in vivo* growth of a tumor that expresses CD47. In some embodiments, the antibody does not prevent interactions between a CD47-expressing cell and a T cell.

[0028] In some embodiments of any of the above embodiments, the antibody is a monoclonal antibody. In some embodiments, the antibody is a scFv-Fc, single domain antibody, single heavy chain antibody, or single light chain antibody. In some embodiments, the antibody comprises a light chain constant region comprising the amino acid sequence of SEQ ID NO:325, 326, or 426. In some embodiments, the antibody comprises an amino acid sequence selected from the group consisting of SEQ ID NOs:320-324. In some embodiments, the antibody comprises an Fc region. In some embodiments, the Fc region is a human Fc region selected from the group consisting of an IgG1 Fc region, an IgG2 Fc region, and an IgG4 Fc region. In some embodiments, the Fc region comprises a human IgG1 Fc region comprising one or more mutations selected from the group consisting of L234A, L235A, L235E, G237A, and N297A, according to EU numbering. In some embodiments, the Fc region comprises a human IgG2 Fc region comprising one or more mutations selected from the group consisting of A330S, P331S and N297A, according to EU numbering. In some embodiments, the Fc region comprises a human IgG4 Fc region comprising one or more mutations selected from the group consisting of S228P, E233P, F234V, L235A, L235E, delG236, and N297A, according to EU numbering. In some embodiments, the antibody is an antibody fragment selected from the group consisting of a Fab, F(ab')₂, Fab'-SH, Fv, and scFv fragment. In some embodiments, the antibody is conjugated to a cytotoxic agent or label.

[0029] In some embodiments, the antibody is a bispecific antibody. In some embodiments, the antibody comprises a first antigen binding domain that binds an extracellular domain (e.g., the D1 domain) of a human SIRP- α polypeptide and a second antigen binding domain that binds an antigen expressed by a cancer cell. In some embodiments, the antigen expressed by the cancer cell is selected from the group consisting of CD19, CD20, CD22, CD30, CD33, CD38, CD52, CD56, CD70, CD74, CD79b, CD123, CD138, CS1/SLAMF7, Trop-2, 5T4, EphA4, BCMA, Mucin 1, Mucin 16, PD-L1, PTK7, STEAP1, Endothelin B Receptor, mesothelin, EGFRvIII, ENPP3, SLC44A4, GNMB, nectin 4, NaPi2b, LIV-1A, Guanylyl cyclase C, DLL3, EGFR, HER2, VEGF, VEGFR, integrin α V β 3, integrin α 5 β 1, MET, IGF1R, TRAILR1, TRAILR2, RANKL, FAP, Tenascin, Le^y, EpCAM, CEA, gpA33, PSMA, TAG72, a mucin, CAIX, EPHA3, folate receptor α , GD2, GD3, and an MHC/peptide complex comprising a peptide from NY-ESO-1/LAGE, SSX-2, a MAGE family protein, MAGE-A3, gp100/pmel17, Melan-A/MART-1, gp75/TRP1, tyrosinase, TRP2, CEA, PSA, TAG-72, immature laminin receptor, MOK/RAGE-1, WT-1, SAP-1, BING-4, EpCAM, MUC1, PRAME, survivin, BRCA1, BRCA2, CDK4, CML66, MART-2, p53, Ras, β -catenin, TGF- β R2, HPV E6, or HPV E7. In some embodiments, the antibody is a chicken, humanized, chimeric, or human antibody. In some embodiments, the antibody is generated by or derived from a chicken.

[0030] In one aspect, the present disclosure refers to polynucleotides comprising any one of the antibodies as disclosed herein. In other aspects, the present disclosure refers to vectors comprising any one of the polynucleotides as disclosed herein. In further aspects, the present disclosure refers to host cells comprising any one of the polynucleotides or vectors as disclosed herein. In one aspect, the present disclosure refers to methods of producing an antibody, comprising culturing any one of the host cells as disclosed herein such that the antibody is produced. In some embodiments, the methods further include recovering the antibody from the host cell.

[0031] Further provided herein are methods of treating or delaying progression of cancer in an individual, the methods comprising administering to the individual an effective amount of the antibody according to any one of the above embodiments. In one aspect, the present disclosure refers to use of the antibody as disclosed herein in the manufacture of a medicament for treating or delaying progression of cancer in an individual. In some embodiments, the methods further comprise administering to the individual an effective amount of a second antibody. In some embodiments, the second antibody binds an antigen expressed by a cancer cell. In some embodiments, the antigen expressed by the cancer cell

block binding between an extracellular domain of a human SIRP- α polypeptide and an IgSF domain of a human CD47 polypeptide, and wherein the second antibody binds to PD-L1. In some embodiments, the individual is a human.

[0032] Further provided herein are methods of treating or delaying progression of an autoimmune disease or an inflammatory disease in an individual, the methods comprising administering to the individual an effective amount of the antibody according to any one of the above embodiments. In one aspect, the present disclosure refers to use of the antibody as disclosed herein in the manufacture of a medicament for treating or delaying progression of an autoimmune disease or an inflammatory disease in an individual. In some embodiments, the autoimmune disease or inflammatory disease is selected from the group consisting of multiple sclerosis, rheumatoid arthritis, a spondyloarthropathy, systemic lupus erythematosus, an antibody-mediated inflammatory or autoimmune disease, graft versus host disease, sepsis, diabetes, psoriasis, psoriatic arthritis, atherosclerosis, Sjogren's syndrome, progressive systemic sclerosis, scleroderma, acute coronary syndrome, ischemic reperfusion, Crohn's Disease, ulcerative colitis, endometriosis, glomerulonephritis, IgA nephropathy, polycystic kidney disease, myasthenia gravis, idiopathic pulmonary fibrosis, asthma, atopic dermatitis, acute respiratory distress syndrome (ARDS), vasculitis, and inflammatory autoimmune myositis. In some embodiments, the individual is a human.

[0033] Further provided herein are methods of identifying an antigen binding domain that binds an extracellular domain (e.g., the D1 domain) of a human SIRP- α polypeptide and does not block binding between human CD47 and the human SIRP- α polypeptide, the methods comprising (a) providing an antigen binding domain that binds the extracellular domain (e.g., the D1 domain) of a human SIRP- α polypeptide; (b) assembling a complex comprising a SIRP- α D1 variant bound to a polypeptide comprising an IgSF domain of CD47, wherein the SIRP- α D1 variant is a non-naturally occurring high affinity SIRP- α D1 domain, and wherein the SIRP- α D1 variant binds to human CD47 with an affinity that is at least 10-fold greater than the affinity of a naturally occurring SIRP- α D1 domain binding to human CD47; (c) contacting the antigen binding domain with the assembled complex; and (d) detecting binding of the antigen binding domain to the complex, wherein binding of the antigen binding domain to the complex indicates that the antigen binding domain does not block binding between human CD47 and the human SIRP- α polypeptide. Further provided herein are methods of identifying an antibody or antigen binding domain that binds an extracellular domain (e.g., the D1 domain) of a human SIRP- α polypeptide and does not block binding between human CD47 and the human SIRP- α polypeptide, the methods comprising contacting an antibody or antigen binding domain that binds the extracellular

(e.g., the D1 domain) of a human SIRP- α polypeptide reduces affinity of the human SIRP- α polypeptide for binding an IgSF domain of a human CD47 polypeptide. In some embodiments, binding of the antibody to an extracellular domain (e.g., the D1 domain) of a human SIRP- α polypeptide expressed on the surface of a first cell reduces affinity of the human SIRP- α polypeptide for binding an IgSF domain of a human CD47 polypeptide expressed on the surface of a second cell. In some embodiments, binding of the antibody to an extracellular domain (e.g., the D1 domain) of a human SIRP- α polypeptide increases k_{off} of the human SIRP- α polypeptide for binding an IgSF domain of a human CD47 polypeptide. In some embodiments, binding of the antibody to an extracellular domain (e.g., the D1 domain) of a human SIRP- α polypeptide expressed on the surface of a first cell increases k_{off} of the human SIRP- α polypeptide for binding an IgSF domain of a human CD47 polypeptide expressed on the surface of a second cell. In some embodiments, the antibody modulates SIRP- α signaling in a cell expressing a human SIRP- α polypeptide. In some embodiments, the cell is a leukocyte selected from the group consisting of a macrophage, a dendritic cell, a neutrophil, an eosinophil, and a myeloid-derived suppressor cell (MDSC). In some embodiments, the antibody inhibits SIRP- α signaling in a macrophage expressing a human SIRP- α polypeptide. In some embodiments, the antibody enhances phagocytosis by a macrophage expressing a human SIRP- α polypeptide.

[0035] It is to be understood that one, some, or all of the properties of the various embodiments described herein may be combined to form other embodiments of the present disclosure. These and other aspects of the disclosure will become apparent to one of skill in the art. These and other embodiments of the disclosure are further described by the detailed description that follows.

BRIEF DESCRIPTION OF THE DRAWINGS

[0036] **FIG. 1A** shows an alignment among the D1 domains of 10 different human SIRP- α variant polypeptides. Sequences shown correspond to SEQ ID NOs: 5, 6, and 76-83 (from top to bottom). Amino acid differences are indicated by asterisks.

[0037] **FIG. 1B** shows an alignment between human v1, human v2, cynomolgus monkey, and 129 mouse SIRP- α D1 domains. Sequences shown correspond to SEQ ID NOs: 5, 6, 11, and 7 (from top to bottom). Amino acid differences are indicated by asterisks.

[0038] **FIG. 1C** shows alignments between various human and mouse SIRP- α D1 domains, with R1, R2 and R3 loops indicated. Shown is an alignment between human v1,

CLAIMS

What is claimed is:

1. An isolated antibody that binds an extracellular domain of a human SIRP- α polypeptide, wherein the antibody binds the extracellular domain of a human SIRP- α v1 polypeptide, the extracellular domain of a human SIRP- α v2 polypeptide, or both; and wherein the antibody comprises:

(a) a heavy chain variable (VH) domain comprising:

(i) an HVR-H1 sequence comprising the amino acid sequence of $X_1X_2AX_3S$, wherein X_1 is S or T; X_2 is N, Y, H, or D; and X_3 is M, L, or V (SEQ ID NO:297);

(ii) an HVR-H2 sequence comprising the amino acid sequence of $GISX_1X_2X_3X_4X_5X_6YYX_7X_8SX_9KG$, wherein X_1 is A or S; X_2 is G, S, or absent; X_3 is S, D or G; X_4 is G or S; X_5 is D, S, or G; X_6 is T or A; X_7 is P, G, V, I, A, or S; X_8 is A, D, or G; and X_9 is V or M (SEQ ID NO:298); and

(iii) an HVR-H3 sequence comprising the amino acid sequence of ETWNHLFDY (SEQ ID NO:193); and

(b) a light chain variable (VL) domain comprising:

(i) an HVR-L1 sequence comprising the amino acid sequence of $SGGX_1X_2X_3SX_4YYX_5$, wherein X_1 is D, G, S, I, or absent; X_2 is S, W, G, Y, D, or absent; X_3 is S, Y, T, or D; X_4 is H, T, S, or Y; and X_5 is G or A (SEQ ID NO:299);

(ii) an HVR-L2 sequence comprising the amino acid sequence of $SDX_1X_2RPX_3$, wherein X_1 is D or N; X_2 is E, K, or Q; and X_3 is S or P (SEQ ID NO:300); and

(iii) an HVR-L3 sequence comprising the amino acid sequence of $X_1X_2YDX_3X_4X_5YX_6NX_7$, wherein X_1 is G or A; X_2 is G or A; X_3 is G, Y, Q, S, or A; X_4 is S, R, or T; X_5 is T or S; X_6 is A, I, V, L, or T; and X_7 is T, A, D, or P (SEQ ID NO:301).

2. The antibody of claim 1, wherein the antibody binds an extracellular domain of a human SIRP- α v1 polypeptide comprising the amino acid sequence of
EEELQVIQPDKSVLVAAGETATLRCTATSLIPVGPIQWFRGAGPGRELIYNQKEGHFPRV
TTVSDLTKRNNMDFSIRIGNITPADAGTY YCVKFRKGSPDDVEFKSGAGTELSVRAKPS
(SEQ ID NO:5).
3. The antibody of claim 1, wherein the antibody binds an extracellular domain of a human SIRP- α v2 polypeptide comprising the amino acid sequence of
EEELQVIQPDKSVSVAAGESAILHCTVTSLIPVGPIQWFRGAGPARELIYNQKEGHFPRVT
TVSESTKRENMDFSISISNITPADAGTY YCVKFRKGSPDTEFKSGAGTELSVRAKPS (SEQ
ID NO:6).
4. The antibody of any one of claims 1-3, wherein the antibody binds an extracellular domain of a human SIRP- α v1 polypeptide comprising the amino acid sequence of
EEELQVIQPDKSVLVAAGETATLRCTATSLIPVGPIQWFRGAGPGRELIYNQKEGHFPRV
TTVSDLTKRNNMDFSIRIGNITPADAGTY YCVKFRKGSPDDVEFKSGAGTELSVRAKPS
(SEQ ID NO:5) and binds an extracellular domain of a human SIRP- α v2 polypeptide comprising the amino acid sequence of
EEELQVIQPDKSVSVAAGESAILHCTVTSLIPVGPIQWFRGAGPARELIYNQKEGHFPRVT
TVSESTKRENMDFSISISNITPADAGTY YCVKFRKGSPDTEFKSGAGTELSVRAKPS (SEQ
ID NO:6).
5. The antibody of any one of claims 1-4, wherein the antibody binds an extracellular domain of a monkey SIRP- α polypeptide.
6. The antibody of claim 5, wherein the monkey SIRP- α polypeptide is a cynomolgus SIRP- α polypeptide.
7. The antibody of claim 6, wherein the antibody binds an extracellular domain of a cynomolgus SIRP- α polypeptide comprising the amino acid sequence of SEQ ID NO:11.
8. The antibody of any one of claims 1-7, wherein the antibody binds an extracellular domain of a murine SIRP- α polypeptide.

9. The antibody of claim 8, wherein the antibody binds an extracellular domain a murine SIRP- α polypeptide that comprises the amino acid sequence of SEQ ID NO: 7.
10. The antibody of any one of claims 1-9, wherein the antibody binds an extracellular domain of a human SIRP- β polypeptide.
11. The antibody of any one of claims 1-10, wherein the antibody binds an extracellular domain of a human SIRP- γ polypeptide.
12. The antibody of any one of claims 10-11, wherein the antibody binds the extracellular domain of a human SIRP- β polypeptide comprising the amino acid sequence of SEQ ID NO:13.
13. The antibody of any one of claims 10-12, wherein the antibody binds the extracellular domain of a human SIRP- γ polypeptide comprising the amino acid sequence of SEQ ID NO:15.
14. The antibody of any one of claims 1-13, wherein the antibody modulates SIRP- α signaling in a cell expressing a human SIRP- α polypeptide.
15. The antibody of claim 14, wherein the cell is a leukocyte selected from the group consisting of a macrophage, a dendritic cell, a neutrophil, an eosinophil, and a myeloid-derived suppressor cell (MDSC).
16. The antibody of claim 15, wherein the antibody inhibits SIRP- α signaling in a macrophage expressing a human SIRP- α polypeptide.
17. The antibody of any one of claims 14-16, wherein the antibody enhances phagocytosis by a macrophage expressing a human SIRP- α polypeptide.
18. The antibody of any one of claims 1-17, wherein the antibody blocks binding between an extracellular domain of a human SIRP- α polypeptide and an IgSF domain of a human CD47 polypeptide.
19. The antibody of claim 1, wherein the antibody comprises:
 - (a) a heavy chain variable (VH) domain comprising:

(i) an HVR-H1 sequence comprising the amino acid sequence of SX_1AX_2S , wherein X_1 is N or Y; and wherein X_2 is M, L, or V (SEQ ID NO:302);

(ii) an HVR-H2 sequence comprising the amino acid sequence of $GISX_1GX_2X_3DTYYX_4X_5SVKG$, wherein X_1 is A or S; X_2 is G or absent; X_3 is S or G; X_4 is P, G, or V; and X_5 is A or D (SEQ ID NO:303); and

(iii) an HVR-H3 sequence comprising the amino acid sequence of ETWNHLFDY (SEQ ID NO:193); and

(b) a light chain variable (VL) domain comprising:

(i) an HVR-L1 sequence comprising the amino acid sequence of $SGGX_1YSSYYA$, wherein X_1 is S or A (SEQ ID NO:304);

(ii) an HVR-L2 sequence comprising the amino acid sequence of SDDKRPS (SEQ ID NO:336); and

(iii) an HVR-L3 sequence comprising the amino acid sequence of GGYDQSSYTNP (SEQ ID NO:172).

20. The antibody of claim 1 or claim 19, wherein the VH domain comprises (i) an HVR-H1 sequence comprising the amino acid sequence of SNAMS (SEQ ID NO:194), SNAVS (SEQ ID NO:271), or SNALS (SEQ ID NO:318), (ii) an HVR-H2 sequence comprising the amino acid sequence of GISAGGSDTYYPASVKG (SEQ ID NO:195), and (iii) an HVR-H3 sequence comprising the amino acid sequence of ETWNHLFDY (SEQ ID NO:193).

21. The antibody of claim 20, wherein the VH domain comprises an amino acid sequence that is at least 90% identical to the amino acid sequence of SEQ ID NO:135, 263, 264, or 330.

22. The antibody of claim 1 or claim 19, wherein the VH domain comprises (i) an HVR-H1 sequence comprising the amino acid sequence of SNAMS (SEQ ID NO:194), SNAVS (SEQ ID NO:271), or SNALS (SEQ ID NO:318), (ii) an HVR-H2 sequence comprising the amino acid sequence of GISSGSDTYYGDSVKG (SEQ ID NO:197), and (iii) an HVR-H3 sequence comprising the amino acid sequence of ETWNHLFDY (SEQ ID NO:193).

23. The antibody of claim 22, wherein the VH domain comprises an amino acid sequence that is at least 90% identical to the amino acid sequence of SEQ ID NO:137, 265, 266, or 331.
24. The antibody of claim 1 or claim 19, wherein the VH domain comprises (i) an HVR-H1 sequence comprising the amino acid sequence of SYAMS (SEQ ID NO:200), SYAVS (SEQ ID NO:272), or SYALS (SEQ ID NO:319), (ii) an HVR-H2 sequence comprising the amino acid sequence of GISSGGDTYYVDSVKG (SEQ ID NO:201), and (iii) an HVR-H3 sequence comprising the amino acid sequence of ETWNHLFDY (SEQ ID NO:193).
25. The antibody of claim 24, wherein the VH domain comprises an amino acid sequence that is at least 90% identical to the amino acid sequence of SEQ ID NO:139, 267, 268, or 332.
26. The antibody of any one of claims 1 and 19-25, wherein the VL domain comprises the sequence FW1—HVR-L1—FW2—HVR-L2—FW3—HVR-L3—FW4 (N-terminus to C-terminus), wherein FW1 comprises the amino acid sequence SYELTQPPSVSVSPGQTARITC (SEQ ID NO:314), FW2 comprises the amino acid sequence WYQQKPGQAPVTLIY (SEQ ID NO:315), FW3 comprises the amino acid sequence NIPERFSGSSSGTTVTLTISGVQAEDEADYYC (SEQ ID NO:316), and FW4 comprises the amino acid sequence FGGGTKLTVL (SEQ ID NO:317).
27. The antibody of any one of claims 1 and 19-26, wherein the VL domain comprises (i) an HVR-L1 sequence comprising the amino acid sequence of SGGSYSSYYA (SEQ ID NO:170), (ii) an HVR-L2 sequence comprising the amino acid sequence of SDDKRPS (SEQ ID NO:336), and (iii) an HVR-L3 sequence comprising the amino acid sequence of GGYDQSSYTNP (SEQ ID NO:172).
28. The antibody of claim 27, wherein the VL domain comprises an amino acid sequence that is at least 90% identical to the amino acid sequence of SEQ ID NO:252.
29. The antibody of any one of claims 1 and 19-26, wherein the VL domain comprises (i) an HVR-L1 sequence comprising the amino acid sequence of SGGAYSSYYA (SEQ ID NO:261), (ii) an HVR-L2 sequence comprising the amino acid sequence of SDDKRPS (SEQ ID NO:336), and (iii) an HVR-L3 sequence comprising the amino acid sequence of GGYDQSSYTNP (SEQ ID NO:172).

30. The antibody of claim 29, wherein the VL domain comprises an amino acid sequence that is at least 90% identical to the amino acid sequence of SEQ ID NO:262.

31. The antibody of claim 1, wherein

(a) the VH domain comprises (i) an HVR-H1 sequence comprising the amino acid sequence of SNAMS (SEQ ID NO:194), SNAVS (SEQ ID NO:271), or SNALS (SEQ ID NO:318), (ii) an HVR-H2 sequence comprising the amino acid sequence of GISAGGSDTYYPASVKG (SEQ ID NO:195), and (iii) an HVR-H3 sequence comprising the amino acid sequence of ETWNHLFDY (SEQ ID NO:193), and the VL domain comprises (iv) an HVR-L1 sequence comprising the amino acid sequence of SGGSYSSYYA (SEQ ID NO:170), (v) an HVR-L2 sequence comprising the amino acid sequence of SDDKRPS (SEQ ID NO:336), and (vi) an HVR-L3 sequence comprising the amino acid sequence of GGYDQSSYTNP (SEQ ID NO:172);

(b) the VH domain comprises (i) an HVR-H1 sequence comprising the amino acid sequence of SNAMS (SEQ ID NO:194), SNAVS (SEQ ID NO:271), or SNALS (SEQ ID NO:318), (ii) an HVR-H2 sequence comprising the amino acid sequence of GISSGSDTYYGDSVKG (SEQ ID NO:197), and (iii) an HVR-H3 sequence comprising the amino acid sequence of ETWNHLFDY (SEQ ID NO:193), and the VL domain comprises (iv) an HVR-L1 sequence comprising the amino acid sequence of SGGSYSSYYA (SEQ ID NO:170), (v) an HVR-L2 sequence comprising the amino acid sequence of SDDKRPS (SEQ ID NO:336), and (vi) an HVR-L3 sequence comprising the amino acid sequence of GGYDQSSYTNP (SEQ ID NO:172);

(c) the VH domain comprises (i) an HVR-H1 sequence comprising the amino acid sequence of SYAMS (SEQ ID NO:200), SYAVS (SEQ ID NO:272), or SYALS (SEQ ID NO:319), (ii) an HVR-H2 sequence comprising the amino acid sequence of GISSGGDTYYVDSVKG (SEQ ID NO:201), and (iii) an HVR-H3 sequence comprising the amino acid sequence of ETWNHLFDY (SEQ ID NO:193), and the VL domain comprises (iv) an HVR-L1 sequence comprising the amino acid sequence of SGGSYSSYYA (SEQ ID NO:170), (v) an HVR-L2 sequence comprising the amino acid sequence of SDDKRPS (SEQ ID NO:336), and (vi) an HVR-L3 sequence comprising the amino acid sequence of GGYDQSSYTNP (SEQ ID NO:172);

(d) the VH domain comprises (i) an HVR-H1 sequence comprising the amino acid sequence of SNAMS (SEQ ID NO:194), SNAVS (SEQ ID NO:271), or SNALS (SEQ ID NO:318), (ii) an HVR-H2 sequence comprising the amino acid sequence of GISAGGSDTYYPASVKG (SEQ ID NO:195), and (iii) an HVR-H3 sequence comprising the amino acid sequence of ETWNHLFDY (SEQ ID NO:193), and the VL domain comprises (iv) an HVR-L1 sequence comprising the amino acid sequence of SGGAYSSYYA (SEQ ID NO:261), (v) an HVR-L2 sequence comprising the amino acid sequence of SDDKRPS (SEQ ID NO:336), and (vi) an HVR-L3 sequence comprising the amino acid sequence of GGYDQSSYTNP (SEQ ID NO:172);

(e) the VH domain comprises (i) an HVR-H1 sequence comprising the amino acid sequence of SNAMS (SEQ ID NO:194), SNAVS (SEQ ID NO:271), or SNALS (SEQ ID NO:318), (ii) an HVR-H2 sequence comprising the amino acid sequence of GISSGSDTYYGDSVKG (SEQ ID NO:197), and (iii) an HVR-H3 sequence comprising the amino acid sequence of ETWNHLFDY (SEQ ID NO:193), and the VL domain comprises (iv) an HVR-L1 sequence comprising the amino acid sequence of SGGAYSSYYA (SEQ ID NO:261), (v) an HVR-L2 sequence comprising the amino acid sequence of SDDKRPS (SEQ ID NO:336), and (vi) an HVR-L3 sequence comprising the amino acid sequence of GGYDQSSYTNP (SEQ ID NO:172); or

(f) the VH domain comprises (i) an HVR-H1 sequence comprising the amino acid sequence of SYAMS (SEQ ID NO:200), SYAVS (SEQ ID NO:272), or SYALS (SEQ ID NO:319), (ii) an HVR-H2 sequence comprising the amino acid sequence of GISSGGDTYYVDSVKG (SEQ ID NO:201), and (iii) an HVR-H3 sequence comprising the amino acid sequence of ETWNHLFDY (SEQ ID NO:193), and the VL domain comprises (iv) an HVR-L1 sequence comprising the amino acid sequence of SGGAYSSYYA (SEQ ID NO:261), (v) an HVR-L2 sequence comprising the amino acid sequence of SDDKRPS (SEQ ID NO:336), and (vi) an HVR-L3 sequence comprising the amino acid sequence of GGYDQSSYTNP (SEQ ID NO:172).

32. The antibody of claim 1, wherein

(a) the VH domain comprises the amino acid sequence of SEQ ID NO:263, and the VL domain comprises the amino acid sequence of SEQ ID NO:252;

(b) the VH domain comprises the amino acid sequence of SEQ ID NO:264, and the VL domain comprises the amino acid sequence of SEQ ID NO:252;

(c) the VH domain comprises the amino acid sequence of SEQ ID NO:330, and the VL domain comprises the amino acid sequence of SEQ ID NO:252;

(d) the VH domain comprises the amino acid sequence of SEQ ID NO:135, and the VL domain comprises the amino acid sequence of SEQ ID NO:252;

(e) the VH domain comprises the amino acid sequence of SEQ ID NO:137, and the VL domain comprises the amino acid sequence of SEQ ID NO:252;

(f) the VH domain comprises the amino acid sequence of SEQ ID NO:139, and the VL domain comprises the amino acid sequence of SEQ ID NO:252;

(g) the VH domain comprises the amino acid sequence of SEQ ID NO:265, and the VL domain comprises the amino acid sequence of SEQ ID NO:252;

(h) the VH domain comprises the amino acid sequence of SEQ ID NO:266, and the VL domain comprises the amino acid sequence of SEQ ID NO:252;

(i) the VH domain comprises the amino acid sequence of SEQ ID NO:331, and the VL domain comprises the amino acid sequence of SEQ ID NO:252;

(j) the VH domain comprises the amino acid sequence of SEQ ID NO:267, and the VL domain comprises the amino acid sequence of SEQ ID NO:252;

(k) the VH domain comprises the amino acid sequence of SEQ ID NO:268, and the VL domain comprises the amino acid sequence of SEQ ID NO:252;

(l) the VH domain comprises the amino acid sequence of SEQ ID NO:332, and the VL domain comprises the amino acid sequence of SEQ ID NO:252;

(j) the VH domain comprises the amino acid sequence of SEQ ID NO:263, and the VL domain comprises the amino acid sequence of SEQ ID NO:262;

(m) the VH domain comprises the amino acid sequence of SEQ ID NO:264, and the VL domain comprises the amino acid sequence of SEQ ID NO:262;

(n) the VH domain comprises the amino acid sequence of SEQ ID NO:330, and the VL domain comprises the amino acid sequence of SEQ ID NO:262;

(o) the VH domain comprises the amino acid sequence of SEQ ID NO:265, and the VL domain comprises the amino acid sequence of SEQ ID NO:262;

(p) the VH domain comprises the amino acid sequence of SEQ ID NO:266, and the VL domain comprises the amino acid sequence of SEQ ID NO:262;

(q) the VH domain comprises the amino acid sequence of SEQ ID NO:331, and the VL domain comprises the amino acid sequence of SEQ ID NO:262;

(r) the VH domain comprises the amino acid sequence of SEQ ID NO:267, and the VL domain comprises the amino acid sequence of SEQ ID NO:262;

(s) the VH domain comprises the amino acid sequence of SEQ ID NO:268, and the VL domain comprises the amino acid sequence of SEQ ID NO:262;

(t) the VH domain comprises the amino acid sequence of SEQ ID NO:332, and the VL domain comprises the amino acid sequence of SEQ ID NO:262;

(u) the VH domain comprises the amino acid sequence of SEQ ID NO:135, and the VL domain comprises the amino acid sequence of SEQ ID NO:262;

(v) the VH domain comprises the amino acid sequence of SEQ ID NO:137, and the VL domain comprises the amino acid sequence of SEQ ID NO:262; or

(w) the VH domain comprises the amino acid sequence of SEQ ID NO:139, and the VL domain comprises the amino acid sequence of SEQ ID NO:262.

33. The antibody of claim 1, wherein the antibody binds to a human SIRP- α v1 polypeptide at one or more amino acid positions selected from the group consisting of I31, V33, Q52, K53, T67, R69, N70, and K96, according to SEQ ID NO:296.

34. The antibody of claim 33, wherein the antibody binds to the human SIRP- α v1 polypeptide at I31, V33, Q52, K53, T67, R69, N70, and K96, according to SEQ ID NO:296.
35. The antibody of claim 33 or claim 34, wherein the antibody further binds to the human SIRP- α v1 polypeptide at one or more amino acid positions selected from the group consisting of L30, P32, E54, T62, N71, M72, F74, and R95, according to SEQ ID NO:296.
36. The antibody of claim 35, wherein the antibody further binds to the human SIRP- α v1 polypeptide at L30, P32, E54, T62, N71, M72, F74, and R95, according to SEQ ID NO:296.
37. The antibody of any one of claims 1-36, wherein the antibody is a monoclonal antibody.
38. The antibody of any one of claims 1-36, wherein the antibody is a scFv-Fc, single domain antibody, single heavy chain antibody, or single light chain antibody.
39. The antibody of any one of claims 1-36, wherein the antibody comprises a light chain constant region comprising the amino acid sequence of SEQ ID NO:325, 326, or 426.
40. The antibody of any one of claims 1-39, wherein the antibody comprises an Fc region.
41. The antibody of claim 40, wherein the antibody comprises an amino acid sequence selected from the group consisting of SEQ ID NOs:320-324.
42. The antibody of claim 40, wherein the Fc region is a human Fc region selected from the group consisting of an IgG1 Fc region, an IgG2 Fc region, and an IgG4 Fc region.
43. The antibody of claim 40, wherein the Fc region comprises a human IgG1 Fc region comprising one or more mutations selected from the group consisting of L234A, L235A, G237A, and N297A, according to EU numbering.
44. The antibody of claim 40, wherein the Fc region comprises a human IgG2 Fc region comprising one or more mutations selected from the group consisting of A330S, P331S and N297A, according to EU numbering.

45. The antibody of claim 40, wherein the Fc region comprises a human IgG4 Fc region comprising one or more mutations selected from the group consisting of S228P, E233P, F234V, L235A, L235E, delG236, and N297A, according to EU numbering.
46. The antibody of any one of claims 1-39, wherein the antibody is an antibody fragment selected from the group consisting of a Fab, F(ab')₂, Fab'-SH, Fv, and scFv fragment.
47. The antibody of any one of claims 1-46, wherein the antibody is conjugated to a cytotoxic agent or label.
48. The antibody of any one of claims 1-46, wherein the antibody is a bispecific antibody.
49. The antibody of claim 48, wherein the antibody comprises a first antigen binding domain that binds an extracellular domain of a human SIRP- α polypeptide and a second antigen binding domain that binds an antigen expressed by a cancer cell.
50. The antibody of claim 48, wherein the antigen expressed by the cancer cell is selected from the group consisting of CD19, CD20, CD22, CD30, CD33, CD38, CD52, CD56, CD70, CD74, CD79b, CD123, CD138, CS1/SLAMF7, Trop-2, 5T4, EphA4, BCMA, Mucin 1, Mucin 16, PD-L1, PTK7, STEAP1, Endothelin B Receptor, mesothelin, EGFRvIII, ENPP3, SLC44A4, GNMB, nectin 4, NaPi2b, LIV-1A, Guanylyl cyclase C, DLL3, EGFR, HER2, VEGF, VEGFR, integrin α V β 3, integrin α 5 β 1, MET, IGF1R, TRAILR1, TRAILR2, RANKL, FAP, Tenascin, Le^y, EpCAM, CEA, gpA33, PSMA, TAG72, a mucin, CAIX, EPHA3, folate receptor α , GD2, GD3, and an MHC/peptide complex comprising a peptide from NY-ESO-1/LAGE, SSX-2, a MAGE family protein, MAGE-A3, gp100/pmel17, Melan-A/MART-1, gp75/TRP1, tyrosinase, TRP2, CEA, PSA, TAG-72, immature laminin receptor, MOK/RAGE-1, WT-1, SAP-1, BING-4, EpCAM, MUC1, PRAME, survivin, BRCA1, BRCA2, CDK4, CML66, MART-2, p53, Ras, β -catenin, TGF- β RII, HPV E6, or HPV E7.
51. The antibody of any one of claims 1-50, wherein the antibody is a chicken, humanized, chimeric, or human antibody.

52. The antibody of any one of claims 1-51, wherein the antibody is generated by or derived from a chicken.
53. A polynucleotide encoding the antibody of any one of claims 1-52.
54. A vector comprising the polynucleotide of claim 53.
55. A host cell comprising the polynucleotide of claim 53 or the vector of claim 54.
56. A method of producing an antibody, the method comprising culturing the host cell of claim 55 such that the antibody is produced.
57. The method of claim 56, further comprising recovering the antibody from the host cell.
58. Use of the antibody of any one of claims 1-52 in the manufacture of a medicament for treating or delaying progression of cancer in an individual.
59. The use of claim 58, wherein an effective amount of a second antibody that binds an antigen expressed by the cancer is to be administered to the individual.
60. The use of claim 59, wherein the antigen expressed by the cancer is selected from the group consisting of CD19, CD20, CD22, CD30, CD33, CD38, CD52, CD56, CD70, CD74, CD79b, CD123, CD138, CS1/SLAMF7, Trop-2, 5T4, EphA4, BCMA, Mucin 1, Mucin 16, PTK7, STEAP1, Endothelin B Receptor, mesothelin, EGFRvIII, ENPP3, SLC44A4, GNMB, nectin 4, NaPi2b, LIV-1A, Guanylyl cyclase C, DLL3, EGFR, HER2, VEGF, VEGFR, integrin α V β 3, integrin α 5 β 1, MET, IGF1R, TRAILR1, TRAILR2, RANKL, FAP, Tenascin, Le^y, EpCAM, CEA, gpA33, PSMA, TAG72, a mucin, CAIX, EPHA3, folate receptor α , GD2, GD3, and an MHC/peptide complex comprising a peptide from NY-ESO-1/LAGE, SSX-2, a MAGE family protein, MAGE-A3, gp100/pmel17, Melan-A/MART-1, gp75/TRP1, tyrosinase, TRP2, CEA, PSA, TAG-72, immature laminin receptor, MOK/RAGE-1, WT-1, SAP-1, BING-4, EpCAM, MUC1, PRAME, survivin, BRCA1, BRCA2, CDK4, CML66, MART-2, p53, Ras, β -catenin, TGF- β RII, HPV E6, or HPV E7.
61. The use of claim 58, wherein an effective amount of an immunotherapeutic agent is to be administered to the individual.

62. The use of claim 61, wherein the immunotherapeutic agent comprises a second antibody.
63. The use of claim 63, wherein the second antibody binds to an antigen selected from the group consisting of PD-1, PD-L1, OX40, CTLA-4, CD137/4-1BB, TNFR2, B7-H3, FZD7, CD27, CCR4, CSF1R, CSF, TIM-3, LAG-3, VISTA, ICOS, CCR2, IDO, A2R, CD39, CD73, TIGIT, CD80, CD47, arginase, TDO, and PVRIG.
64. The use of claim 64, wherein the first antibody binds the extracellular domain of a human SIRP- α v1 polypeptide, the extracellular domain of a human SIRP- α v2 polypeptide, or the extracellular domains of both a human SIRP- α v1 polypeptide and a human SIRP- α v2 polypeptide with a dissociation constant (K_D) of less than 100nM, wherein the first antibody blocks binding between an extracellular domain of a human SIRP- α polypeptide and an IgSF domain of a human CD47 polypeptide, and wherein the second antibody binds to PD-1.
65. The use of claim 64, wherein the first antibody binds the extracellular domain of a human SIRP- α v1 polypeptide with a dissociation constant (K_D) of less than 100nM, wherein the first antibody blocks binding between an extracellular domain of a human SIRP- α polypeptide and an IgSF domain of a human CD47 polypeptide, and wherein the second antibody binds to PD-L1.
66. Use of the antibody of any one of claims 1-52 in the manufacture of a medicament for treating or delaying progression of an autoimmune disease or an inflammatory disease in an individual.
67. The use of claim 66, wherein the autoimmune disease or inflammatory disease is selected from the group consisting of multiple sclerosis, rheumatoid arthritis, a spondyloarthropathy, systemic lupus erythematosus, an antibody-mediated inflammatory or autoimmune disease, graft versus host disease, sepsis, diabetes, psoriasis, psoriatic arthritis, atherosclerosis, Sjogren's syndrome, progressive systemic sclerosis, scleroderma, acute coronary syndrome, ischemic reperfusion, Crohn's Disease, ulcerative colitis, endometriosis, glomerulonephritis, IgA nephropathy, polycystic kidney disease, myasthenia gravis, idiopathic pulmonary fibrosis, asthma, atopic dermatitis, acute respiratory distress syndrome (ARDS), vasculitis, and inflammatory autoimmune myositis.