

CLAIMS

What is claimed is:

1. An isolated antibody that binds human Mer Tyrosine Kinase (MerTK), wherein the antibody reduces efferocytosis by a phagocytic cell.
2. The antibody of claim 1, wherein the antibody reduces efferocytosis by at least 50% compared to an isotype control antibody.
3. The antibody of claim 2, wherein the antibody reduces efferocytosis by at least 60%, by at least 70%, by at least 80%, by at least 90%, or by at least 95%.
4. The antibody of claim 1, wherein the antibody reduces efferocytosis with an IC₅₀ value of 0.13 nM to 30 nM.
5. The antibody of claim 4, wherein the antibody reduces efferocytosis with an IC₅₀ value of 0.13 nM to 1 nM, 1 nM to 5 nM, 5 nM to 10 nM, or 10 nM to 30 nM.
6. The antibody of any one of claims 1-5, wherein the phagocytic cell is a macrophage, a tumor-associated macrophage, or a dendritic cell.
7. The antibody of any one of claims 1-6, wherein the antibody reduces binding of ProS to MerTK.
8. The antibody of claim 7, wherein the antibody reduces binding of ProS to MerTK by at least 20%, by at least 25%, by at least 30%, by at least 40%, by at least 50%, by at least 60%, by at least 70%, by at least 80%, by at least 90%, or by at least 95%.
9. The antibody of claim 7, wherein the antibody reduces binding of ProS to MerTK with an IC₅₀ value of 0.58 nM to 25.9 nM.
10. The antibody of claim 9, wherein the antibody reduces binding of ProS to MerTK with an IC₅₀ value of 0.58 nM to 1 nM, 1 nM to 2.5 nM, 2.5 nM to 5 nM, 5 nM to 10 nM, or 10 nM to 25 nM.

11. The antibody of any one of claims 1-6, wherein the antibody reduces binding of Gas6 to MerTK.
12. The antibody of claim 11, wherein the antibody reduces binding of Gas6 to MerTK by at least 20%, by at least 25%, by at least 30%, by at least 40%, by at least 50%, by at least 60%, by at least 70%, by at least 80%, by at least 90%, or by at least 95%.
13. The antibody of claim 11, wherein the antibody reduces binding of Gas6 to MerTK with an IC₅₀ value of 0.29 nM to 32 nM.
14. The antibody of claim 13, wherein the antibody reduces binding of Gas6 to MerTK with an IC₅₀ value of 0.29 nM to 1 nM, 1 nM to 5 nM, 5 nM to 10 nM, 10 nM to 25 nM, or 25 nM to 32 nM.
15. The antibody of any one of claims 1-6, wherein the antibody reduces binding of ProS to MerTK and reduces the binding of Gas6 to MerTK.
16. The antibody of claim 15, wherein the antibody reduces binding of ProS to MerTK by at least 20%, by at least 25%, by at least 30%, by at least 40%, by at least 50%, by at least 60%, by at least 70%, by at least 80%, by at least 90%, or by at least 95% and wherein the antibody reduces binding of Gas6 to MerTK by at least 20%, by at least 25%, by at least 30%, by at least 40%, by at least 50%, by at least 60%, by at least 70%, by at least 80%, by at least 90%, or by at least 95%.
17. The antibody of claim 15, wherein the antibody reduces binding of ProS to MerTK with an IC₅₀ value of 0.58 nM to 25.9 nM and wherein the antibody reduces binding of Gas6 to MerTK with an IC₅₀ value of 0.29 nM to 32 nM.
18. The antibody of any one of claims 1-17, wherein the antibody binds to human MerTK and murine MerTK, binds to human MerTK and cynomolgus MerTK, or binds to human MerTK, murine MerTK, and cynomolgus MerTK.
19. The antibody of any one of claims 1-18, wherein the antibody binds to human MerTK with a binding affinity of 1.4 nM to 81 nM.
20. The antibody of claim 18 or 19, wherein the antibody binds to cynomolgus MerTK with a binding affinity of 1.6 nM to 107 nM.
21. The antibody of any one of claims 19-20, wherein the antibody binds to murine MerTK with a binding affinity of 30 nM to 186 nM.

22. The antibody of any one of claims 1-21, wherein the antibody reduces Gas6-mediated phosphorylation of AKT.
23. The antibody of claim 22, wherein the antibody reduces Gas6-mediated phosphorylation of AKT with an IC₅₀ value of 0.019 nM to 7.74 nM.
24. The antibody of claim 23, wherein the antibody reduces Gas6-mediated phosphorylation of AKT with an IC₅₀ value of 0.019 nM to 0.25 nM, 0.25 nM to 0.5 nM, 0.5 nM to 1 nM, 1 nM to 2.5 nM, 2.5 nM to 5 nM, or 5 nM to 7.74 nM.
25. The antibody of any one of claims 1-24, wherein the antibody increases or induces M1-like macrophage polarization.
26. The antibody of any one of claims 1-25, wherein the antibody increases macrophage expression of one or more pro-inflammatory cytokines.
27. The antibody of claim 26, wherein the antibody increases macrophage expression of TNF, IFN, IL-6, IL-1, IL-12, CXCL-1, MCP1, MIP-1 α , and/or MIP-1 β .
28. An isolated antibody that binds to human MerTK, wherein the antibody comprises a heavy chain variable region and a light chain variable region, wherein the heavy chain variable region comprises:
- a) an HVR-H1 comprising the amino acid sequence of SEQ ID NO:83;
 - b) an HVR-H2 comprising an amino acid sequence selected from the group consisting of SEQ ID NOs: 99, 329, 330, 331, 332, and 333; and
 - c) an HVR-H3 comprising an amino acid sequence selected from the group consisting of SEQ ID NOs: 138, 334, 335, 336, 337, 338, and 339; and
- wherein the light chain variable region comprises:
- d) an HVR-L1 comprising an amino acid sequence selected from the group consisting of SEQ ID NOs: 158, 340, 341, 342, 343, and 344;
 - e) an HVR-L2 comprising the amino acid sequence of SEQ ID NO:187; and
 - f) an HVR-L3 comprising the amino acid sequence of SEQ ID NO:210.
29. The antibody of claim 29, wherein the antibody comprises:
- (a) HVR-H1 comprising the amino acid sequence of SEQ ID NO:83; (b) HVR-H2 comprising the amino acid sequence of SEQ ID NO:99; (c) HVR-H3 comprising the amino acid sequence of SEQ ID NO:138;

30. The antibody of claim 28 or 29, wherein the antibody comprises a heavy chain variable domain (V_H) and a light chain variable domain (V_L), wherein the V_H and V_L are selected from the group consisting of: V_H comprising the amino acid sequence of SEQ ID NO:19 and V_L comprising the amino acid sequence of SEQ ID NO:54; V_H comprising the amino acid sequence of SEQ ID NO:234 and V_L comprising the amino acid sequence of SEQ ID NO:247; V_H comprising the amino acid sequence of SEQ ID NO:235 and V_L comprising the amino acid sequence of SEQ ID NO:247; V_H comprising the amino acid sequence of SEQ ID NO:236 and V_L comprising the amino acid sequence of SEQ ID NO:248; V_H comprising the amino acid sequence of SEQ ID NO:236 and V_L comprising the amino acid sequence of SEQ ID NO:249; V_H comprising the amino acid sequence of SEQ ID NO:237 and V_L comprising the amino acid sequence of SEQ ID NO:249; V_H comprising the amino acid sequence of SEQ ID NO:238 and V_L comprising the amino acid sequence of SEQ ID NO:249; V_H comprising the amino acid sequence of SEQ ID NO:239 and V_L comprising the amino acid sequence of SEQ ID NO:250; V_H comprising the amino acid sequence of SEQ ID NO:240 and V_L comprising the amino acid sequence of SEQ ID NO:251; V_H comprising the amino acid sequence of SEQ ID NO:241 and V_L comprising the amino acid sequence of SEQ ID NO:252; V_H comprising the amino acid sequence of SEQ ID NO:242 and V_L comprising the amino acid sequence of SEQ ID NO:249; V_H comprising the amino acid sequence of SEQ ID NO:243 and V_L comprising the amino acid sequence of SEQ ID NO:247; V_H comprising the amino acid sequence of SEQ ID NO:244 and V_L comprising the amino acid sequence of SEQ ID NO:251; V_H comprising the amino acid sequence of SEQ ID NO:245 and V_L comprising the amino acid sequence of SEQ ID NO:253; V_H comprising the amino acid sequence of SEQ ID NO:246 and V_L comprising the amino acid sequence of SEQ ID NO:247; and V_H comprising the amino acid sequence of SEQ ID NO:246 and V_L comprising the amino acid sequence of SEQ ID NO:254.

31. An isolated antibody that binds to human MerTK, wherein the antibody comprises a heavy chain variable region and a light chain variable region, wherein the heavy chain variable region comprises:

- a) an HVR-H1 comprising the amino acid sequence of SEQ ID NO:84;
- b) an HVR-H2 comprising an amino acid sequence selected from the group consisting of SEQ ID NOs: 99 and 329; and
- c) an HVR-H3 comprising the amino acid sequence of SEQ ID NO: 139; and

wherein the light chain variable region comprises:

- d) an HVR-L1 comprising an amino acid sequence selected from the group consisting of SEQ ID NOs: 169 and 345;
- e) an HVR-L2 comprising the amino acid sequence of SEQ ID NO:195; and
- f) an HVR-L3 comprising the amino acid sequence of SEQ ID NO:219.

32. The antibody of claim 31, wherein the antibody comprises:

(a) HVR-H1 comprising the amino acid sequence of SEQ ID NO:84; (b) HVR-H2 comprising the amino acid sequence of SEQ ID NO:329; (c) HVR-H3 comprising the amino acid sequence of SEQ ID NO:139; (d) HVR-L1 comprising the amino acid sequence of SEQ ID NO:169; (e) HVR-L2 comprising the amino acid sequence of SEQ ID NO:195; and (f) HVR-L3 comprising the amino acid sequence of SEQ ID NO:219; or

(a) HVR-H1 comprising the amino acid sequence of SEQ ID NO:84; (b) HVR-H2 comprising the amino acid sequence of SEQ ID NO:99; (c) HVR-H3 comprising the amino acid sequence of SEQ ID NO:139; (d) HVR-L1 comprising the amino acid sequence of SEQ ID NO:345; (e) HVR-L2 comprising the amino acid sequence of SEQ ID NO:195; and (f) HVR-L3 comprising the amino acid sequence of SEQ ID NO:219.

33. The antibody of claim 31 or 32, wherein the antibody comprises a heavy chain variable domain (V_H) and a light chain variable domain (V_L), wherein the V_H and V_L are selected from the group consisting of: V_H comprising the amino acid sequence of SEQ ID NO:255 and V_L comprising the amino acid sequence of SEQ ID NO:257; V_H comprising the amino acid sequence of SEQ ID NO:256 and V_L comprising the amino acid sequence of SEQ ID NO:258.

34. An isolated antibody that binds to human MerTK, wherein the antibody comprises a heavy chain variable region and a light chain variable region, wherein the heavy chain variable region comprises:

- a) an HVR-H1 comprising an amino acid sequence selected from the group consisting of SEQ ID NOs:95, 346, and 347;
- b) an HVR-H2 comprising an amino acid sequence selected from the group consisting of SEQ ID NOs: 119, 348, 349, 350, 351, 352, 353, and 354; and
- c) an HVR-H3 comprising an amino acid sequence selected from the group consisting of SEQ ID NOs: 151, 355, and 356; and

wherein the light chain variable region comprises:

- d) an HVR-L1 comprising an amino acid sequence selected from the group consisting of SEQ ID NOs: 181, 341, 357, and 358;
- e) an HVR-L2 comprising an amino acid sequence selected from the group consisting of SEQ ID NOs:187 and 359; and
- f) an HVR-L3 comprising an amino acid sequence selected from the group consisting of SEQ ID NOs:208, 360, 361, and 362.

35. The antibody of claim 34, wherein the antibody comprises:

(a) HVR-H1 comprising the amino acid sequence of SEQ ID NO:95; (b) HVR-H2 comprising the amino acid sequence of SEQ ID NO:119; (c) HVR-H3 comprising the amino acid sequence of SEQ ID NO:151;

(a) HVR-H1 comprising the amino acid sequence of SEQ ID NO:347; (b) HVR-H2 comprising the amino acid sequence of SEQ ID NO:119; (c) HVR-H3 comprising the amino acid sequence of SEQ ID NO:356; (d) HVR-L1 comprising the amino acid sequence of SEQ ID NO:341; (e) HVR-L2 comprising the amino

36. The antibody of claim 34 or 35, wherein the antibody comprises a heavy chain variable domain (V_H) and a light chain variable domain (V_L), wherein the V_H and V_L are selected from the group consisting of: V_H comprising the amino acid sequence of SEQ ID NO:33 and V_L comprising the amino acid sequence of SEQ ID NO:68; V_H comprising the amino acid sequence of SEQ ID NO:259 and V_L comprising the amino acid sequence of SEQ ID NO:274; V_H comprising the amino acid sequence of SEQ ID NO:260 and V_L comprising the amino acid sequence of SEQ ID NO:275; V_H comprising the amino acid sequence of SEQ ID NO:261 and V_L comprising the amino acid sequence of SEQ ID NO:276; V_H comprising the amino acid sequence of SEQ ID NO:262 and V_L comprising the amino acid sequence of SEQ ID NO:277; V_H comprising the amino acid sequence of SEQ ID NO:263 and V_L comprising the amino acid sequence of SEQ ID NO:277; V_H comprising the amino acid sequence of SEQ ID NO:264 and V_L comprising the amino acid sequence of SEQ ID NO:277; V_H comprising the amino acid sequence of SEQ ID NO:265 and V_L comprising the amino acid sequence of SEQ ID NO:277; V_H comprising the amino acid sequence of SEQ ID NO:266 and V_L comprising the amino acid sequence of SEQ ID NO:277; V_H comprising the amino acid sequence of SEQ ID NO:267 and V_L comprising the amino acid sequence of SEQ ID NO:278; V_H comprising the amino acid sequence of SEQ ID NO:268 and V_L comprising the amino acid sequence of SEQ ID NO:279; V_H comprising the amino acid sequence of SEQ ID NO:269 and V_L comprising the amino acid sequence of SEQ ID NO:279; V_H comprising the amino acid sequence of SEQ ID NO:264 and V_L comprising the amino acid sequence of SEQ ID NO:280; V_H comprising the amino acid sequence of SEQ ID NO:270 and V_L comprising the amino acid sequence of SEQ ID NO:281; V_H comprising the amino acid sequence of SEQ ID NO:265 and V_L comprising the amino acid sequence of SEQ ID NO:282; V_H comprising the amino acid sequence of SEQ ID NO:264 and V_L comprising the amino acid sequence of SEQ ID NO:283; V_H comprising the amino acid sequence of SEQ ID NO:271 and V_L comprising the amino acid sequence of SEQ ID NO:284; V_H comprising the amino acid sequence of SEQ ID NO:272 and V_L comprising the amino acid sequence of SEQ ID NO:285; V_H comprising the amino acid sequence of SEQ ID NO:271 and V_L comprising the amino acid sequence of SEQ ID NO:286; V_H comprising the amino acid sequence of SEQ ID NO:273 and V_L comprising the amino acid sequence of SEQ ID NO:287; V_H comprising the amino acid sequence of SEQ ID NO:273 and V_L comprising the amino acid sequence of SEQ ID NO:288; and V_H comprising the amino acid sequence of SEQ ID NO:273 and V_L comprising the amino acid sequence of SEQ ID NO:289.

37. An isolated antibody that binds to human MerTK, wherein the antibody comprises a heavy chain variable region and a light chain variable region, wherein the heavy chain variable region comprises:

- a) an HVR-H1 comprising the amino acid sequence of SEQ ID NO:90;
- b) an HVR-H2 comprising an amino acid sequence selected from the group consisting of SEQ ID NOs: 122, 364, 365, 366, 367, and 368; and

c) an HVR-H3 comprising an amino acid sequence selected from the group consisting of SEQ ID NOs: 155, 373, 374, and 375; and

wherein the light chain variable region comprises:

d) an HVR-L1 comprising an amino acid sequence selected from the group consisting of SEQ ID NOs: 184, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, and 387;

e) an HVR-L2 comprising an amino acid sequence selected from the group consisting of SEQ ID NOs: 203, 388, 389, 390, and 391; and

f) an HVR-L3 comprising an amino acid sequence selected from the group consisting of SEQ ID NOs: 231, 392, 393, and 394.

38. The antibody of claim 37, wherein the antibody comprises:

(a) HVR-H1 comprising the amino acid sequence of SEQ ID NO:90; (b) HVR-H2 comprising the amino acid sequence of SEQ ID NO:122; (c) HVR-H3 comprising the amino acid sequence of SEQ ID NO:155; (d) HVR-L1 comprising the amino acid sequence of SEQ ID NO:184; (e) HVR-L2 comprising the amino acid sequence of SEQ ID NO:203; and (f) HVR-L3 comprising the amino acid sequence of SEQ ID NO:231;

(a) HVR-H1 comprising the amino acid sequence of SEQ ID NO:90; (b) HVR-H2 comprising the amino acid sequence of SEQ ID NO:364; (c) HVR-H3 comprising the amino acid sequence of SEQ ID NO:373; (d) HVR-L1 comprising the amino acid sequence of SEQ ID NO:376; (e) HVR-L2 comprising the amino acid sequence of SEQ ID NO:388; and (f) HVR-L3 comprising the amino acid sequence of SEQ ID NO:231;

(a) HVR-H1 comprising the amino acid sequence of SEQ ID NO:90; (b) HVR-H2 comprising the amino acid sequence of SEQ ID NO:364; (c) HVR-H3 comprising the amino acid sequence of SEQ ID NO:155; (d) HVR-L1 comprising the amino acid sequence of SEQ ID NO:377; (e) HVR-L2 comprising the amino acid sequence of SEQ ID NO:203; and (f) HVR-L3 comprising the amino acid sequence of SEQ ID NO:231;

(a) HVR-H1 comprising the amino acid sequence of SEQ ID NO:90; (b) HVR-H2 comprising the amino acid sequence of SEQ ID NO:364; (c) HVR-H3 comprising the amino acid sequence of SEQ ID NO:374; (d) HVR-L1 comprising the amino acid sequence of SEQ ID NO:378; (e) HVR-L2 comprising the amino acid sequence of SEQ ID NO:203; and (f) HVR-L3 comprising the amino acid sequence of SEQ ID NO:231;

(a) HVR-H1 comprising the amino acid sequence of SEQ ID NO:95; (b) HVR-H2 comprising the amino acid sequence of SEQ ID NO:119; (c) HVR-H3 comprising the amino acid sequence of SEQ ID NO:356; (d) HVR-L1 comprising the amino acid sequence of SEQ ID NO:341; (e) HVR-L2 comprising the amino acid sequence of SEQ ID NO:359; and (f) HVR-L3 comprising the amino acid sequence of SEQ ID NO:362;

(a) HVR-H1 comprising the amino acid sequence of SEQ ID NO:90; (b) HVR-H2 comprising the amino acid sequence of SEQ ID NO:368; (c) HVR-H3 comprising the amino acid sequence of SEQ ID NO:155; (d) HVR-L1 comprising the amino acid sequence of SEQ ID NO:385; (e) HVR-L2 comprising the amino

acid sequence of SEQ ID NO:203; and (f) HVR-L3 comprising the amino acid sequence of SEQ ID NO:394;

(a) HVR-H1 comprising the amino acid sequence of SEQ ID NO:90; (b) HVR-H2 comprising the amino acid sequence of SEQ ID NO:368; (c) HVR-H3 comprising the amino acid sequence of SEQ ID NO:155; (d) HVR-L1 comprising the amino acid sequence of SEQ ID NO:378; (e) HVR-L2 comprising the amino acid sequence of SEQ ID NO:203; and (f) HVR-L3 comprising the amino acid sequence of SEQ ID NO:395;

(a) HVR-H1 comprising the amino acid sequence of SEQ ID NO:90; (b) HVR-H2 comprising the amino acid sequence of SEQ ID NO:368; (c) HVR-H3 comprising the amino acid sequence of SEQ ID NO:155; (d) HVR-L1 comprising the amino acid sequence of SEQ ID NO:378; (e) HVR-L2 comprising the amino acid sequence of SEQ ID NO:390; and (f) HVR-L3 comprising the amino acid sequence of SEQ ID NO:394;

(a) HVR-H1 comprising the amino acid sequence of SEQ ID NO:90; (b) HVR-H2 comprising the amino acid sequence of SEQ ID NO:372; (c) HVR-H3 comprising the amino acid sequence of SEQ ID NO:155; (d) HVR-L1 comprising the amino acid sequence of SEQ ID NO:378; (e) HVR-L2 comprising the amino acid sequence of SEQ ID NO:391; and (f) HVR-L3 comprising the amino acid sequence of SEQ ID NO:394;

(a) HVR-H1 comprising the amino acid sequence of SEQ ID NO:90; (b) HVR-H2 comprising the amino acid sequence of SEQ ID NO:368; (c) HVR-H3 comprising the amino acid sequence of SEQ ID NO:375; (d) HVR-L1 comprising the amino acid sequence of SEQ ID NO:386; (e) HVR-L2 comprising the amino acid sequence of SEQ ID NO:203; and (f) HVR-L3 comprising the amino acid sequence of SEQ ID NO:394; or

(a) HVR-H1 comprising the amino acid sequence of SEQ ID NO:90; (b) HVR-H2 comprising the amino acid sequence of SEQ ID NO:368; (c) HVR-H3 comprising the amino acid sequence of SEQ ID NO:155; (d) HVR-L1 comprising the amino acid sequence of SEQ ID NO:387; (e) HVR-L2 comprising the amino acid sequence of SEQ ID NO:203; and (f) HVR-L3 comprising the amino acid sequence of SEQ ID NO:394.

39. The antibody of claim 37 or 38, wherein the antibody comprises a heavy chain variable domain (V_H) and a light chain variable domain (V_L), wherein the V_H and V_L are selected from the group consisting of: V_H comprising the amino acid sequence of SEQ ID NO:37 and V_L comprising the amino acid sequence of SEQ ID NO:72; V_H comprising the amino acid sequence of SEQ ID NO:290 and V_L comprising the amino acid sequence of SEQ ID NO:309; V_H comprising the amino acid sequence of SEQ ID NO:291 and V_L comprising the amino acid sequence of SEQ ID NO:310; V_H comprising the amino acid sequence of SEQ ID NO:292 and V_L comprising the amino acid sequence of SEQ ID NO:311; V_H comprising the amino acid sequence of SEQ ID NO:293 and V_L comprising the amino acid sequence of SEQ ID NO:312; V_H comprising the amino acid sequence of SEQ ID NO:294 and V_L comprising the amino acid sequence

of SEQ ID NO:313; V_H comprising the amino acid sequence of SEQ ID NO:295 and V_L comprising the amino acid sequence of SEQ ID NO:314; V_H comprising the amino acid sequence of SEQ ID NO:296 and V_L comprising the amino acid sequence of SEQ ID NO:315; V_H comprising the amino acid sequence of SEQ ID NO:290 and V_L comprising the amino acid sequence of SEQ ID NO:316; V_H comprising the amino acid sequence of SEQ ID NO:297 and V_L comprising the amino acid sequence of SEQ ID NO:317; V_H comprising the amino acid sequence of SEQ ID NO:298 and V_L comprising the amino acid sequence of SEQ ID NO:318; V_H comprising the amino acid sequence of SEQ ID NO:292 and V_L comprising the amino acid sequence of SEQ ID NO:319; V_H comprising the amino acid sequence of SEQ ID NO:299 and V_L comprising the amino acid sequence of SEQ ID NO:320; V_H comprising the amino acid sequence of SEQ ID NO:300 and V_L comprising the amino acid sequence of SEQ ID NO:311; V_H comprising the amino acid sequence of SEQ ID NO:301 and V_L comprising the amino acid sequence of SEQ ID NO:321; V_H comprising the amino acid sequence of SEQ ID NO:302 and V_L comprising the amino acid sequence of SEQ ID NO:322; V_H comprising the amino acid sequence of SEQ ID NO:303 and V_L comprising the amino acid sequence of SEQ ID NO:311; V_H comprising the amino acid sequence of SEQ ID NO:304 and V_L comprising the amino acid sequence of SEQ ID NO:322; V_H comprising the amino acid sequence of SEQ ID NO:305 and V_L comprising the amino acid sequence of SEQ ID NO:322; V_H comprising the amino acid sequence of SEQ ID NO:301 and V_L comprising the amino acid sequence of SEQ ID NO:323; V_H comprising the amino acid sequence of SEQ ID NO:301 and V_L comprising the amino acid sequence of SEQ ID NO:324; V_H comprising the amino acid sequence of SEQ ID NO:301 and V_L comprising the amino acid sequence of SEQ ID NO:325; V_H comprising the amino acid sequence of SEQ ID NO:306 and V_L comprising the amino acid sequence of SEQ ID NO:326; V_H comprising the amino acid sequence of SEQ ID NO:307 and V_L comprising the amino acid sequence of SEQ ID NO:327; and V_H comprising the amino acid sequence of SEQ ID NO:308 and V_L comprising the amino acid sequence of SEQ ID NO:328.

40. An isolated antibody that binds to human MerTK, wherein the antibody comprises a heavy chain variable region and a light chain variable region, wherein the heavy chain variable region comprises:

- a) an HVR-H1 comprising the amino acid sequence of SEQ ID NO:90;
- b) an HVR-H2 comprising the amino acid sequence of SEQ ID NO:368; and
- c) an HVR-H3 comprising the amino acid sequence of SEQ ID NO:155; and

wherein the light chain variable region comprises:

- d) an HVR-L1 comprising the amino acid sequence of SEQ ID NO:383;
- e) an HVR-L2 comprising the amino acid sequence of SEQ ID NO:203; and
- f) an HVR-L3 comprising the amino acid sequence of SEQ ID NO:231.

41. The antibody of claim 40, wherein the antibody comprises a heavy chain variable domain (V_H) and a light chain variable domain (V_L), wherein the V_H comprises the amino acid sequence of SEQ ID NO:298 and V_L comprises the amino acid sequence of SEQ ID NO:318.

42. The antibody of claim 40 or 41, wherein the antibody comprises (a) a heavy chain comprising the amino acid sequence of SEQ ID NO:466 and a light chain comprising the amino acid sequence of SEQ ID NO:472; or (b) a heavy chain comprising the amino acid sequence of SEQ ID NO:467 and a light chain comprising the amino acid sequence of SEQ ID NO:472.

43. The antibody of claim 40 or 41, wherein the antibody comprises (a) a heavy chain comprising the amino acid sequence of SEQ ID NO:464 and a light chain comprising the amino acid sequence of SEQ ID NO:472; (b) a heavy chain comprising the amino acid sequence of SEQ ID NO:465 and a light chain comprising the amino acid sequence of SEQ ID NO:472; (c) a heavy chain comprising the amino acid sequence of SEQ ID NO:468 and a light chain comprising the amino acid sequence of SEQ ID NO:472; or (d) a heavy chain comprising the amino acid sequence of SEQ ID NO:469 and a light chain comprising the amino acid sequence of SEQ ID NO:472.

44. An isolated antibody that binds to human MerTK, wherein the antibody comprises a heavy chain variable region and a light chain variable region, wherein the heavy chain variable region comprises:

- a) an HVR-H1 comprising the amino acid sequence of SEQ ID NO:84;
- b) an HVR-H2 comprising the amino acid sequence of SEQ ID NO:99; and
- c) an HVR-H3 comprising the amino acid sequence of SEQ ID NO:139; and

wherein the light chain variable region comprises:

- d) an HVR-L1 comprising the amino acid sequence of SEQ ID NO:345;
- e) an HVR-L2 comprising the amino acid sequence of SEQ ID NO:195; and
- f) an HVR-L3 comprising the amino acid sequence of SEQ ID NO:219.

45. The antibody of claim 44, wherein the antibody comprises a heavy chain variable domain (V_H) and a light chain variable domain (V_L), wherein the V_H comprises the amino acid sequence of SEQ ID NO:256 and V_L comprises the amino acid sequence of SEQ ID NO:258.

46. The antibody of claim 44 or 45, wherein the antibody comprises (a) a heavy chain comprising the amino acid sequence of SEQ ID NO:424 and a light chain comprising the amino acid sequence of SEQ ID NO:430; or (b) a heavy chain comprising the amino acid sequence of SEQ ID NO:425 and a light chain comprising the amino acid sequence of SEQ ID NO:430.

47. The antibody of claim 44 or 45, wherein the antibody comprises (a) a heavy chain comprising the amino acid sequence of SEQ ID NO:422 and a light chain comprising the amino acid sequence of SEQ ID NO:430; (b) a heavy chain comprising the amino acid sequence of SEQ ID NO:423 and a light chain comprising the amino acid sequence of SEQ ID NO:430; (c) a heavy chain comprising the amino acid sequence of SEQ ID NO:426 and a light chain comprising the amino acid sequence of SEQ ID NO:430; or (d) a heavy chain comprising the amino acid sequence of SEQ ID NO:427 and a light chain comprising the amino acid sequence of SEQ ID NO:430.

48. An isolated antibody that binds to human MerTK, wherein the antibody comprises a heavy chain variable region and a light chain variable region, wherein the heavy chain variable region comprises:

- a) an HVR-H1 comprising the amino acid sequence of SEQ ID NO:90;
- b) an HVR-H2 comprising the amino acid sequence of SEQ ID NO:368; and
- c) an HVR-H3 comprising the amino acid sequence of SEQ ID NO:155; and

wherein the light chain variable region comprises:

- d) an HVR-L1 comprising the amino acid sequence of SEQ ID NO:376;
- e) an HVR-L2 comprising the amino acid sequence of SEQ ID NO:203; and
- f) an HVR-L3 comprising the amino acid sequence of SEQ ID NO:393.

49. The antibody of claim 48, wherein the antibody comprises a heavy chain variable domain (V_H) and a light chain variable domain (V_L), wherein the V_H comprises the amino acid sequence of SEQ ID NO:299 and V_L comprises the amino acid sequence of SEQ ID NO:320.

50. The antibody of claim 48 or 49, wherein the antibody comprises (a) a heavy chain comprising the amino acid sequence of SEQ ID NO:442 and a light chain comprising the amino acid sequence of SEQ ID NO:448; or (b) a heavy chain comprising the amino acid sequence of SEQ ID NO:443 and a light chain comprising the amino acid sequence of SEQ ID NO:448.

51. The antibody of claim 48 or 49, wherein the antibody comprises (a) a heavy chain comprising the amino acid sequence of SEQ ID NO:440 and a light chain comprising the amino acid sequence of SEQ ID NO:448; (b) a heavy chain comprising the amino acid sequence of SEQ ID NO:441 and a light chain comprising the amino acid sequence of SEQ ID NO:448; (c) a heavy chain comprising the amino acid sequence of SEQ ID NO:444 and a light chain comprising the amino acid sequence of SEQ ID NO:448; or (d) a heavy chain comprising the amino acid sequence of SEQ ID NO:445 and a light chain comprising the amino acid sequence of SEQ ID NO:448.

52. An isolated antibody that binds to human MerTK, wherein the antibody comprises a heavy chain variable region and a light chain variable region, wherein the heavy chain variable region comprises:

- a) an HVR-H1 comprising the amino acid sequence of SEQ ID NO:84;
- b) an HVR-H2 comprising the amino acid sequence of SEQ ID NO:329; and
- c) an HVR-H3 comprising the amino acid sequence of SEQ ID NO:139; and

wherein the light chain variable region comprises:

- d) an HVR-L1 comprising the amino acid sequence of SEQ ID NO:169;
- e) an HVR-L2 comprising the amino acid sequence of SEQ ID NO:195; and
- f) an HVR-L3 comprising the amino acid sequence of SEQ ID NO:219.

53. The antibody of claim 52, wherein the antibody comprises a heavy chain variable domain (V_H) and a light chain variable domain (V_L), wherein the V_H comprises the amino acid sequence of SEQ ID NO:255 and V_L comprises the amino acid sequence of SEQ ID NO:257.

54. The antibody of claim 52 or 53, wherein the antibody comprises (a) a heavy chain comprising the amino acid sequence of SEQ ID NO:415 and a light chain comprising the amino acid sequence of SEQ ID NO:421; or (b) a heavy chain comprising the amino acid sequence of SEQ ID NO:416 and a light chain comprising the amino acid sequence of SEQ ID NO:421.

55. The antibody of claim 52 or 53, wherein the antibody comprises (a) a heavy chain comprising the amino acid sequence of SEQ ID NO:413 and a light chain comprising the amino acid sequence of SEQ ID NO:421; (b) a heavy chain comprising the amino acid sequence of SEQ ID NO:414 and a light chain comprising the amino acid sequence of SEQ ID NO:421; (c) a heavy chain comprising the amino acid sequence of SEQ ID NO:417 and a light chain comprising the amino acid sequence of SEQ ID NO:421; or (d) a heavy chain comprising the amino acid sequence of SEQ ID NO:418 and a light chain comprising the amino acid sequence of SEQ ID NO:421.

56. An isolated antibody that binds to human MerTK, wherein the antibody comprises a heavy chain variable region and a light chain variable region, wherein the heavy chain variable region comprises:

- a) an HVR-H1 comprising an amino acid sequence selected from the group consisting of SEQ ID NOs:75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, and 98;
- b) an HVR-H2 comprising an amino acid sequence selected from the group consisting of SEQ ID NOs:99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, and 124; and
- c) an HVR-H3 comprising an amino acid sequence selected from the group consisting of SEQ ID NOs:125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, and 157; and

wherein the light chain variable region comprises:

- d) an HVR-L1 comprising an amino acid sequence selected from the group consisting of SEQ ID NOs: 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, and 186;
- e) an HVR-L2 comprising an amino acid sequence selected from the group consisting of SEQ ID NOs: 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, and 205; and
- f) an HVR-L3 comprising an amino acid sequence selected from the group consisting of SEQ ID NOs: 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, and 233.

57. The antibody of claim 56, wherein the antibody comprises an HVR-H1, HVR-H2, HVR-H3, HVR-L1, HVR-L2, and HVR-L3 comprising the amino acid sequences of:

- (i) SEQ ID NOs: 75, 99, 125, 158, 187, and 207, respectively;
- (ii) SEQ ID NOs: 76, 100, 126, 159, 187, and 208, respectively;
- (iii) SEQ ID NOs: 77, 101, 127, 160, 188, and 209, respectively;
- (iv) SEQ ID NOs: 75, 99, 128, 158, 187, and 210, respectively;
- (v) SEQ ID NOs: 78, 102, 129, 161, 189, and 211, respectively;
- (vi) SEQ ID NOs: 75, 103, 130, 158, 187, and 212, respectively;
- (vii) SEQ ID NOs: 77, 101, 127, 162, 188, and 209, respectively;
- (viii) SEQ ID NOs: 75, 99, 131, 163, 187, and 213, respectively;
- (ix) SEQ ID NOs: 79, 104, 132, 164, 190, and 214, respectively;
- (x) SEQ ID NOs: 80, 105, 133, 165, 191, and 215, respectively;
- (xi) SEQ ID NOs: 81, 106, 134, 166, 192, and 216, respectively;
- (xii) SEQ ID NOs: 82, 107, 135, 167, 193, and 217, respectively;
- (xiii) SEQ ID NOs: 77, 108, 136, 167, 194, and 209, respectively;
- (xiv) SEQ ID NOs: 75, 109, 137, 168, 187, and 218, respectively;
- (xv) SEQ ID NOs: 83, 99, 138, 158, 187, and 210, respectively;
- (xvi) SEQ ID NOs: 84, 99, 139, 169, 195, and 219, respectively;
- (xvii) SEQ ID NOs: 85, 99, 140, 170, 196, and 220, respectively;
- (xviii) SEQ ID NOs: 86, 99, 141, 171, 191, and 221, respectively;
- (xix) SEQ ID NOs: 87, 110, 142, 172, 197, and 222, respectively;
- (xx) SEQ ID NOs: 88, 99, 143, 173, 191, and 223, respectively;
- (xxi) SEQ ID NOs: 89, 111, 143, 173, 198, and 221, respectively;
- (xxii) SEQ ID NOs: 90, 112, 144, 174, 199, and 224, respectively;
- (xxiii) SEQ ID NOs: 91, 113, 145, 175, 200, and 225, respectively;
- (xxiv) SEQ ID NOs: 90, 114, 146, 176, 201, and 226, respectively;
- (xxv) SEQ ID NOs: 92, 115, 147, 177, 195, and 227, respectively;

(xxvi) SEQ ID NOs: 93, 116, 148, 178, 188, and 209, respectively;
(xxvii) SEQ ID NOs: 94, 117, 149, 179, 195, and 228, respectively;
(xxviii) SEQ ID NOs: 95, 118, 150, 180, 187, and 229, respectively;
(xxix) SEQ ID NOs: 95, 119, 151, 181, 187, and 208, respectively;
(xxx) SEQ ID NOs: 90, 120, 152, 182, 202, and 230, respectively;
(xxxi) SEQ ID NOs: 96, 118, 153, 183, 202, and 230, respectively;
(xxxii) SEQ ID NOs: 96, 121, 154, 181, 187, and 210, respectively;
(xxxiii) SEQ ID NOs: 90, 122, 155, 184, 203, and 231, respectively;
(xxxiv) SEQ ID NOs: 90, 122, 155, 184, 203, and 231, respectively;
(xxxv) SEQ ID NOs: 97, 123, 156, 185, 204, and 232, respectively; or
(xxxvi) SEQ ID NOs: 98, 124, 157, 186, 205, and 233, respectively.

58. An isolated antibody that binds to human MerTK, wherein the antibody comprises the HVR-H1, HVR-H2, HVR-H3, HVR-L1, HVR-L2 and HVR-L3 sequences of MTK-01, MTK-02, MTK-03, MTK-04, MTK-05, MTK-06, MTK-07, MTK-08, MTK-09, MTK-10, MTK-11, MTK-12, MTK-13, MTK-14, MTK-15, MTK-16, MTK-17, MTK-18, MTK-19, MTK-20, MTK-21, MTK-22, MTK-23, MTK-24, MTK-25, MTK-26, MTK-27, MTK-28, MTK-29, MTK-30, MTK-31, MTK-32, MTK-33, MTK-34, MTK-35, MTK-36, MTK-15.1, MTK-15.2, MTK-15.3, MTK-15.4, MTK-15.5, MTK-15.6, MTK-15.7, MTK-15.8, MTK-15.9, MTK-15.10, MTK-15.11, MTK-15.12, MTK-15.13, MTK-15.14, and MTK-15.15, MTK-16.1 and MTK-16.2, MTK-29.1, MTK-29.2, MTK-29.3, MTK-29.4, MTK-29.5, MTK-29.6, MTK-29.7, MTK-29.8, MTK-29.9, MTK-29.10, MTK-29.11, MTK-29.12, MTK-29.13, MTK-29.14, MTK-29.15, MTK-29.16, MTK-29.17, MTK-29.18, MTK-29.19, MTK-29.20, and MTK-29.21, MTK-33.1, MTK-33.2, MTK-33.3, MTK-33.4, MTK-33.5, MTK-33.6, MTK-33.7, MTK-33.8, MTK-33.9, MTK-33.10, MTK-33.11, MTK-33.12, MTK-33.13, MTK-33.14, MTK-33.15, MTK-33.16, MTK-33.17, MTK-33.18, MTK-33.19, MTK-33.20, MTK-33.21, MTK-33.22, MTK-33.23, or MTK-33.24 antibody.

59. The antibody of claim 58, wherein the HVRs are the Kabat-defined HVRs, the Chothia-defined HVRs, or the AbM-defined HVRs.

60. The antibody of any one of claims 1-27, 58, and 59, wherein the antibody comprises a heavy chain variable region comprising an amino acid sequence selected from the group consisting of SEQ ID NOs: 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 234-246, 255, 256, 259-379, and 290-308 or an amino acid sequence having at least 90% identity to SEQ ID NOs: 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 234-246, 255, 256, 259-379, and 290-308.

61. The antibody of any one of claims 1-27 and 58-60 wherein the antibody comprises a light chain variable region comprising an amino acid sequence selected from the group consisting of SEQ ID NOs:40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 247-254, 257, 258, 274-289, and 309-328 or an amino acid sequence having at least 90% identity to SEQ ID NOs: 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 247-254, 257, 258, 274-289, and 309-328.

62. An isolated antibody that binds to human MerTk, wherein the antibody comprises a heavy chain variable region and a light chain variable region, wherein the heavy chain variable region comprises an amino acid sequence selected from the group consisting of SEQ ID NOs:5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 234-246, 255, 256, 259-379, and 290-308.

63. An isolated antibody that binds to human MerTk, wherein the antibody comprises a heavy chain variable region and a light chain variable region, wherein the light chain variable region comprises an amino acid sequence selected from the group consisting of SEQ ID NOs:40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 247-254, 257, 258, 274-289, and 309-328.

64. The antibody of any one of claims 1-27 and 58-63, wherein the antibody comprises a heavy chain variable region and a light chain variable region comprising the amino acid sequences of SEQ ID NOs:5 and 40, respectively; SEQ ID NOs:6 and 41, respectively; SEQ ID NOs:7 and 42, respectively; SEQ ID NOs:8 and 43, respectively; SEQ ID NOs:9 and 44, respectively; SEQ ID NOs:10 and 45, respectively; SEQ ID NOs:11 and 46, respectively; SEQ ID NOs:12 and 47, respectively; SEQ ID NOs:13 and 48, respectively; SEQ ID NOs:14 and 49, respectively; SEQ ID NOs:15 and 50, respectively; SEQ ID NOs:16 and 51, respectively; SEQ ID NOs:17 and 52, respectively; SEQ ID NOs:18 and 53, respectively; SEQ ID NOs:19 and 54, respectively; SEQ ID NOs:20 and 55, respectively; SEQ ID NOs:21 and 56, respectively; SEQ ID NOs:22 and 57, respectively; SEQ ID NOs:23 and 58, respectively; SEQ ID NOs:24 and 59, respectively; SEQ ID NOs:25 and 60, respectively; SEQ ID NOs:26 and 61, respectively; SEQ ID NOs:27 and 62, respectively; SEQ ID NOs:28 and 63, respectively; SEQ ID NOs:29 and 64, respectively; SEQ ID NOs:30 and 65, respectively; SEQ ID NOs:31 and 66, respectively; SEQ ID NOs:32 and 67, respectively; SEQ ID NOs:33 and 68, respectively; SEQ ID NOs:34 and 69, respectively; SEQ ID NOs:35 and 70, respectively; SEQ ID NOs:36 and 71, respectively; SEQ ID NOs:37 and 72, respectively; SEQ ID NOs:38 and 73, respectively; and SEQ ID NOs:39 and 74, respectively.

65. An isolated antibody that binds to human MerTK, wherein the antibody competitively inhibits binding of one of more of the antibodies of any one of claims 1-64 for binding to human MerTK,

optionally wherein the antibody competitively inhibits binding of MTK-10, MTK-12, MTK-13, MTK-19, MTK-20, or MTK-22.

66. An isolated antibody that binds to human MerTK, wherein the antibody binds essentially the same or an overlapping epitope on MerTK as an antibody of any claims 1-64 for binding to human MerTK, optionally wherein the antibody binds essentially the same or an overlapping epitope on MerTK as MTK-10, MTK-12, MTK-13, MTK-19, MTK-20, or MTK-22.

67. The antibody of any one of claims 28-66, wherein the antibody reduces efferocytosis by a phagocytic cell.

68. The antibody of claim 67, wherein the antibody reduces efferocytosis by at least 50% compared to an isotype control antibody.

69. The antibody of claim 68, wherein the antibody reduces efferocytosis by at least 60%, by at least 70%, by at least 80%, by at least 90%, or by at least 95%.

70. The antibody of claim 67, wherein the antibody reduces efferocytosis with an IC₅₀ value of 0.13 nM to 30 nM.

71. The antibody of claim 70, wherein the antibody reduces efferocytosis with an IC₅₀ value of 0.13 nM to 1 nM, 1 nM to 5 nM, 5 nM to 10 nM, or 10 nM to 30 nM.

72. The antibody of any one of claims 67-71, wherein the phagocytic cell is a macrophage, a tumor-associated macrophage, or a dendritic cell.

73. The antibody of any one of claims 28-72, wherein the antibody (i) reduces binding of ProS to MerTK but does not reduce binding of Gas6 to MerTK or (ii) reduces binding of ProS to MerTK and reduces binding of Gas6 to MerTK.

74. The antibody of claim 73, wherein wherein the antibody reduces binding of ProS to MerTK by at least 20%, by at least 25%, by at least 30%, by at least 40%, by at least 50%, by at least 60%, by at least 70%, by at least 80%, by at least 90%, or by at least 95%.

75. The antibody of claim 73, wherein the antibody reduces binding of ProS to MerTK with an IC₅₀ value of 0.58 nM to 25.9 nM.

76. The antibody of claim 75, wherein the antibody reduces binding of ProS to MerTK with an IC₅₀ value of 0.58 nM to 1 nM, 1 nM to 2.5 nM, 2.5 nM to 5 nM, 5 nM to 10 nM, or 10 nM to 25 nM.

77. The antibody of any one of claims 28-72, wherein the antibody reduces binding of Gas6 to MerTK.

78. The antibody of claim 77, wherein the antibody reduces binding of Gas6 to MerTK by at least 20%, by at least 25%, by at least 30%, by at least 40%, by at least 50%, by at least 60%, by at least 70%, by at least 80%, by at least 90%, or by at least 95%.

79. The antibody of claim 77, wherein the antibody reduces binding of Gas6 to MerTK with an IC₅₀ value of 0.29 nM to 32 nM.

80. The antibody of claim 79, wherein the antibody reduces binding of Gas6 to MerTK with an IC₅₀ value of 0.29 nM to 1 nM, 1 nM to 5 nM, 5 nM to 10 nM, 10 nM to 25 nM, or 25 nM to 32 nM.

81. The antibody of any one of claims 28-72, wherein the antibody reduces binding of ProS to MerTK and reduces the binding of Gas6 to MerTK.

82. The antibody of claim 81, wherein the antibody reduces binding of ProS to MerTK by at least 20%, by at least 25%, by at least 30%, by at least 40%, by at least 50%, by at least 60%, by at least 70%, by at least 80%, by at least 90%, or by at least 95% and wherein the antibody reduces binding of Gas6 to MerTK by at least 20%, by at least 25%, by at least 30%, by at least 40%, by at least 50%, by at least 60%, by at least 70%, by at least 80%, by at least 90%, or by at least 95%.

83. The antibody of claim 81, wherein the antibody reduces binding of ProS to MerTK with an IC₅₀ value of 0.58 nM to 25.9 nM and wherein the antibody reduces binding of Gas6 to MerTK with an IC₅₀ value of 0.29 nM to 32 nM.

84. The antibody of any one of claims 28-83, wherein the antibody binds to human MerTK and murine MerTK, binds to human MerTK and cynomolgus MerTK, or binds to human MerTK, murine MerTK, and cynomolgus MerTK

85. The antibody of any one of claims 28-84, wherein the antibody binds to human MerTK with a binding affinity of 1.4 nM to 81 nM.

86. The antibody of claim 84 or 85, wherein the antibody binds to cynomolgus MerTK with a binding affinity of 1.6 nM to 107 nM.
87. The antibody of any one of claims 84-86, wherein the antibody binds to murine MerTK with a binding affinity of 30 nM to 186 nM.
88. The antibody of any one of claims 28-87, wherein the antibody reduces Gas6-mediated phosphorylation of AKT.
89. The antibody of claim 88, wherein the antibody reduces Gas6-mediated phosphorylation of AKT with an IC₅₀ value of 0.019 nM to 7.74 nM.
90. The antibody of claim 89, wherein the antibody reduces Gas6-mediated phosphorylation of AKT with an IC₅₀ value of 0.019 nM to 0.25 nM, 0.25 nM to 0.5 nM, 0.5 nM to 1 nM, 1 nM to 2.5 nM, 2.5 nM to 5 nM, or 5 nM to 7.74 nM.
91. The antibody of any one of claims 1-6, 11-72, and 77-90, wherein the antibody is at least 1.7 times, at least 2.3 times, at least 2.4 times, at least 5 times, at least 7.7 times, or at least 8.5 times more effective at reducing the binding of ProS to MerTK than at reducing the binding of Gas6 to MerTK.
92. The antibody of any one of claims 28-91, wherein the antibody increases or induces M1-like macrophage polarization.
93. The antibody of any one of claims 28-92, wherein the antibody increases macrophage expression of one or more pro-inflammatory cytokines.
94. The antibody of claim 93, wherein the antibody increases macrophage expression of TNF, IFN, IL-6, IL-1, IL-12, CXCL-1, MCP1, MIP-1 α , and/or MIP-1 β .
95. The antibody of any one of claims 1-94, wherein the antibody also binds to cynomolgus monkey MerTk.
96. The antibody of any one of claims 1-95, wherein the antibody also binds to murine MerTK.
97. The antibody of any one of claims 1-98, wherein the antibody is a murine antibody, a human antibody, a humanized antibody, a bispecific antibody, a monoclonal antibody, a multivalent antibody, a conjugated antibody, or a chimeric antibody.

98. A humanized form of the antibody of any one of claims 1-96.
99. The antibody of any one of claims 1-98, wherein the antibody is of the IgG class, the IgM class, or the IgA class.
100. The antibody of claim 99, wherein the antibody is of the IgG class and has an IgG1, an IgG2, or an IgG4 isotype.
101. The antibody of claim 100, wherein the antibody is of an IgG1 isotype with an Fc amino acid sequence selected from the group consisting of SEQ ID NOs: 396, 397, 398, 399, 400, and 401.
102. The antibody of any one of claims 1-101, wherein the antibody is a full-length antibody.
103. The antibody of any one of claims 1-41, 44, 45, 48, 49, 52, 53, and 56-102, wherein the antibody is an antibody fragment.
104. The antibody of claim 103, wherein the fragment is a Fab, Fab', Fab'-SH, F(ab')₂, Fv or scFv fragment.
105. An isolated nucleic acid comprising a nucleic acid sequence encoding the antibody of any one of claims 1-104.
106. A vector comprising the nucleic acid of claim 105.
107. An isolated host cell comprising the nucleic acid of claim 105 or the vector of claim 106.
108. An isolated host cell comprising (i) a nucleic acid comprising a nucleic acid sequence encoding the VH of the antibody of any one of claims 1-104 and (ii) a nucleic acid comprising a nucleic acid sequence encoding the VL of the anti-MerTK antibody.
109. A method of producing an antibody that binds to human MerTK, the method comprising culturing the cell of claim 107 or 108 so that the antibody is produced.
110. The method of claim 109, further comprising recovering the antibody produced by the cell.
111. An antibody produced by the method of claim 109 or 110.

112. A pharmaceutical composition comprising the antibody of any one of claims 1-104 and 111 and a pharmaceutically acceptable carrier.

113. A method of treating an individual having cancer, the method comprising administering to an individual in need thereof a therapeutically effective amount of the antibody of any one of claims 1-104 and 111 or the pharmaceutical composition of claim 112.

114. The method of claim 113, wherein the cancer is colon cancer, ovarian cancer, liver cancer, or endometrial cancer.

115. The method of claim 113 or 114 wherein the administration does not lead to a retinal pathology in the individual.

116. The method of any one of claims 113-115, further comprising administering an anti-PD-L1 antibody, an anti-PD-L2 antibody, or anti-PD antibody to the individual.

117. A method for detecting MerTK in a sample comprising contacting said sample with the antibody of any one of claims 1-104 and 114.