CLAIMS

1. An isolated antibody that specifically binds to human ILT4 (hILT4), the antibody comprising a heavy chain and a light chain, wherein the heavy chain comprises a heavy chain variable region (VH) comprising VH complementary determining region 1 (CDR1), CDR2 and CDR3 comprising the amino acid sequences of SEQ ID Nos: 155, 156, and 157, respectively, and wherein the light chain comprises a light chain variable region (VL) comprising VL CDR1, CDR2 and CDR3 comprising the amino acid sequences of SEQ ID Nos: 158, 159, and 160, respectively.

2. The isolated antibody of claim 1, wherein:

   a. the VH comprises an amino acid sequence that is at least 90% identical to the amino acid sequence of SEQ ID NO: 71 and the VL comprises an amino acid sequence that is at least 90% identical to the amino acid sequence of SEQ ID NO: 70;

   b. the VH comprises an amino acid sequence that is at least 90% identical to the amino acid sequence of SEQ ID NO: 74 and the VL comprises an amino acid sequence that is at least 90% identical to the amino acid sequence of SEQ ID NO: 70;

   c. the VH comprises an amino acid sequence that is at least 90% identical to the amino acid sequence of SEQ ID NO: 75 and the VL comprises an amino acid sequence that is at least 90% identical to the amino acid sequence of SEQ ID NO: 70;

   d. the VH comprises an amino acid sequence that is at least 90% identical to the amino acid sequence of SEQ ID NO: 78 and the VL comprises an amino acid sequence that is at least 90% identical to the amino acid sequence of SEQ ID NO: 70; or

   e. the VH comprises an amino acid sequence that is at least 90% identical to the amino acid sequence of SEQ ID NO: 80 and the VL comprises an amino acid sequence that is at least 90% identical to the amino acid sequence of SEQ ID NO: 70.

3. The isolated antibody of claim 1, wherein:

a. the VH comprises an amino acid sequence that is at least 95% identical to the amino acid sequence of SEQ ID NO: 71 and the VL comprises an amino acid sequence that is at least 95% identical to the amino acid sequence of SEQ ID NO: 70;
b. the VH comprises an amino acid sequence that is at least 95% identical to the amino acid sequence of SEQ ID NO: 74 and the VL comprises an amino acid sequence that is at least 95% identical to the amino acid sequence of SEQ ID NO: 70;
c. the VH comprises an amino acid sequence that is at least 95% identical to the amino acid sequence of SEQ ID NO: 75 and the VL comprises an amino acid sequence that is at least 95% identical to the amino acid sequence of SEQ ID NO: 70;
d. the VH comprises an amino acid sequence that is at least 95% identical to the amino acid sequence of SEQ ID NO: 78 and the VL comprises an amino acid sequence that is at least 95% identical to the amino acid sequence of SEQ ID NO: 70; or
e. the VH comprises an amino acid sequence that is at least 95% identical to the amino acid sequence of SEQ ID NO: 80 and the VL comprises an amino acid sequence that is at least 95% identical to the amino acid sequence of SEQ ID NO: 70.

4. The isolated antibody of claim 1, wherein:
a. the VH comprises the amino acid sequence of SEQ ID NO: 71;
b. the VH comprises the amino acid sequence of SEQ ID NO: 74;
c. the VH comprises the amino acid sequence of SEQ ID NO: 75;
d. the VH comprises the amino acid sequence of SEQ ID NO: 78; or
e. the VH comprises the amino acid sequence of SEQ ID NO: 80.

5. The isolated antibody of claim 4, comprising a heavy chain constant region comprising the amino acid sequence of any one of SEQ ID Nos: 98, 100, 102, 103, 104 or 179.

6. The isolated antibody of claim 5, wherein the heavy chain constant region comprises the amino acid sequence of any one of SEQ ID Nos: 100, 102, 103, 104 or 179

and further comprises a C-terminal lysine residue.

7. The isolated antibody of claim 5, wherein the heavy chain constant region comprises the amino acid sequence of SEQ ID NO: 100.

8. The isolated antibody of claim 7, wherein the heavy chain constant region further comprises a C-terminal lysine residue.

9. The isolated antibody of claim 1, wherein the VL comprises the amino acid sequence of SEQ ID NO: 70.

10. The isolated antibody of claim 1, wherein:

a. the VH comprises the amino acid sequence of SEQ ID NO: 71 and the VL comprises the amino acid sequence of SEQ ID NO: 70;
b. the VH comprises the amino acid sequence of SEQ ID NO: 74 and the VL comprises the amino acid sequence of SEQ ID NO: 70;
c. the VH comprises the amino acid sequence of SEQ ID NO: 75 and the VL comprises the amino acid sequence of SEQ ID NO: 70;
d. the VH comprises the amino acid sequence of SEQ ID NO: 78 and the VL comprises the amino acid sequence of SEQ ID NO: 70; or
e. the VH comprises the amino acid sequence of SEQ ID NO: 80 and the VL comprises the amino acid sequence of SEQ ID NO: 70.

11. The isolated antibody of claim 10, comprising a heavy chain constant region comprising the amino acid sequence of any one of SEQ ID Nos: 98, 100, 102, 103, 104 or 179.

12. The isolated antibody of claim 11, wherein the heavy chain constant region comprises the amino acid sequence of any one of SEQ ID Nos: 100, 102, 103, 104 or 179 and further comprises a C-terminal lysine residue.

13. The isolated antibody of claim 11, wherein the heavy chain constant region comprises the amino acid sequence of SEQ ID NO: 100.

14. The isolated antibody of claim 13, wherein the heavy chain constant region further comprises a C-terminal lysine residue.

15. The isolated antibody of claim 1, which is an IgG antibody.

16. The isolated antibody of claim 15, which is an IgG1, IgG2 or IgG4 antibody.

17. The isolated antibody of claim 16, wherein the antibody is a human IgG4 antibody

comprising an S228P substitution (EU numbering).

18. The isolated antibody of claim 1, wherein the heavy chain lacks a C-terminal lysine residue.

19. The isolated antibody of claim 1, which is a full length antibody, and wherein the heavy chain comprises or does not comprise a C-terminal lysine residue.

20. The isolated antibody of claim 1, wherein the heavy chain comprises the amino acid sequence of SEQ ID NO: 13.

21. The isolated antibody of claim 20, wherein the heavy chain further comprises a C-terminal lysine residue.

22. The isolated antibody of claim 1, wherein the light chain comprises the amino acid sequence of SEQ ID NO: 11.

23. The isolated antibody of claim 1, wherein the heavy chain comprises the amino acid sequence of SEQ ID NO: 12, SEQ ID NO: 13, SEQ ID NO: 36, SEQ ID NO: 38, SEQ ID NO: 40, SEQ ID NO: 176, SEQ ID NO: 177, or SEQ ID NO: 178.

24. The isolated antibody of claim 1, wherein: (a) the heavy chain comprises the amino acid sequence of SEQ ID NO: 12 and the light chain comprises the amino acid sequence of SEQ ID NO: 11, (b) the heavy chain comprises the amino acid sequence of SEQ ID NO: 13 and the light chain comprises the amino acid sequence of SEQ ID NO: 11, (c) the heavy chain comprises the amino acid sequence of SEQ ID NO: 36 and the light chain comprises the amino acid sequence of SEQ ID NO: 11, (d) the heavy chain comprises the amino acid sequence of SEQ ID NO: 38 and the light chain comprises the amino acid sequence of SEQ ID NO: 11, (e) the heavy chain comprises the amino acid sequence of SEQ ID NO: 40 and the light chain comprises the amino acid sequence of SEQ ID NO: 11, (f) the heavy chain comprises the amino acid sequence of SEQ ID NO: 176 and the light chain comprises the amino acid sequence of SEQ ID NO: 11, (g) the heavy chain comprises the amino acid sequence of SEQ ID NO: 177 and the light chain comprises the amino acid sequence of SEQ ID NO: 11, or (h) the heavy chain comprises the amino acid sequence of SEQ ID NO: 178 and the light chain comprises the amino acid sequence of SEQ ID NO: 11.

25. The isolated antibody of claim 1, wherein the VH comprises the amino acid sequence of SEQ ID NO: 80.

26. The isolated antibody of claim 25, comprising a heavy chain constant region comprising the amino acid sequence of any one of SEQ ID Nos: 98, 100, 102, 103, 104 or 179.

27. The isolated antibody of claim 26, wherein the heavy chain constant region comprises the amino acid sequence of any one of SEQ ID Nos: 100, 102, 103, 104 or 179 and further comprises a C-terminal lysine residue.

28. An isolated antibody that specifically binds to hILT4, the antibody comprising a VH comprising the amino acid sequence of SEQ ID NO: 80 and a VL comprising the amino acid sequence of SEQ ID NO: 70.

29. The isolated antibody of claim 28, which is an IgG antibody.

30. The isolated antibody of claim 29, which is an IgG1, IgG2 or IgG4 antibody.

31. The isolated antibody of claim 30, wherein the antibody is a human IgG4 antibody comprising an S228P substitution (EU numbering).

32. The isolated antibody of claim 28, comprising a heavy chain that lacks a C-terminal lysine residue.

33. The isolated antibody of claim 28, which is a full length antibody comprising a heavy chain that comprises or does not comprise a C-terminal lysine residue.

34. The isolated antibody of claim 28, comprising a heavy chain constant region comprising the amino acid sequence of any one of SEQ ID Nos: 98, 100, 102, 103, 104 or 179.

35. The isolated antibody of claim 34, wherein the heavy chain constant region comprises the amino acid sequence of any one of SEQ ID Nos: 100, 102, 103, 104 or 179 and further comprises a C-terminal lysine residue.

36. An isolated antibody that specifically binds to hILT4, the antibody comprising a VH comprising the amino acid sequence of SEQ ID NO: 80, a VL comprising the amino acid sequence of SEQ ID NO: 70, and a heavy chain constant region comprising the amino acid sequence of SEQ ID NO: 100.

37. The isolated antibody of claim 36, wherein the heavy chain constant region further comprises a C-terminal lysine residue.

38. An isolated antibody that specifically binds to hILT4, the antibody comprising a heavy chain comprising the amino acid sequence of SEQ ID NO: 13 and a light chain comprising the amino acid sequence of SEQ ID NO: 11.

39. The isolated antibody of claim 38, wherein the heavy chain further comprises a C-terminal lysine residue.

40. The isolated antibody of claim 38, which comprises a heavy chain consisting of the amino acid sequence of SEQ ID NO: 13 and a light chain consisting of the amino acid sequence of SEQ ID NO: 11.

41. The isolated antibody of claim 38, which comprises a heavy chain consisting of the amino acid sequence of SEQ ID NO: 13 and a C-terminal lysine, and a light chain consisting of the amino acid sequence of SEQ ID NO: 11.