We claim:

1. An isolated antibody, or antigen binding fragment thereof, that binds to human TIGIT (human T cell immunoreceptor with Ig and ITIM domains) comprising:

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

i) CDRH1 comprising the sequence of SEQ ID NO.: 20;

ii) CDRH2 comprising the sequence of SEQ ID NO.: 21; and

iii) CDRH3 comprising the sequence of SEQ ID NO.: 22;

and

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

iv) CDRL1 comprising the sequence of SEQ ID NO.: 23;

v) CDRL2 comprising the sequence of SEQ ID NO.: 24; and

vi) CDRL3 comprising the sequence of SEQ ID NO.: 25.

2. The isolated antibody or fragment of claim 1 wherein:

a) the heavy chain variable domain has at least 80% sequence identity with the sequence of SEQ ID NO: 7; and

b) the light chain variable domain has at least 80% sequence identity with the sequence of SEQ ID NO: 9.

3. The isolated antibody of claim 2 wherein:

a) the heavy chain variable domain comprises the sequence of SEQ ID NO: 7; and

b) the light chain variable domain comprises the sequence of SEQ ID NO: 9.

4. The isolated antibody of claim 3 wherein:

a) the heavy chain further comprises the sequence of SEQ ID NO: 48; and

b) the light chain further comprises the sequence of SEQ ID NO: 49.

5. The isolated antibody of claim 2 wherein the antibody is a human IgG1 Fc variant with reduced or eliminated effector function.

6. The isolated antibody or fragment claim 5 comprising the following mutations: L234A, L235E, G237A, A330S and P331S by EU numbering, wherein the sequence of the heavy chain constant region comprises the sequence of SEQ ID NO: 48.

7. The isolated antibody of claim 1 wherein the antibody is a human IgG1 Fc variant with reduced or eliminated effector function.

8. The isolated antibody or fragment claim 7 comprising the following mutations: L234A, L235E, G237A, A330S and P331S by EU numbering, wherein the sequence of the heavy chain constant region comprises the sequence of SEQ ID NO: 48.