

CLAIMS

1. A monoclonal antibody that binds to a TIGIT polypeptide, comprising a heavy chain CDR1 comprising the amino acid sequence of SEQ ID NO: 11, a heavy chain CDR2 comprising the amino acid sequence of SEQ ID NO: 12, a heavy chain CDR3 comprising the amino acid sequence of SEQ ID NO: 13, a light chain CDR1 comprising the amino acid sequence of SEQ ID NO: 15, a light chain CDR2 comprising the amino acid sequence of SEQ ID NO: 16, and a light chain CDR3 comprising the amino acid sequence of SEQ ID NO: 17.
2. The anti-TIGIT antibody of claim 1, comprising a mature heavy chain variable region with at least 90% sequence identity to SEQ ID NO:35 and a mature light chain variable region with at least 90% sequence identity to SEQ ID NO:37.
3. The anti-TIGIT antibody of claim 2, wherein the mature heavy chain variable region is linked to a heavy chain constant region, resulting in a heavy chain comprising SEQ ID NO: 40 provided that the C-terminal lysine may or may not be present, and the mature light chain variable region is linked to a light chain constant region, resulting in a light chain comprising SEQ ID NO: 41.
4. The anti-TIGIT antibody of claim 2, wherein the mature heavy chain variable region is linked to a heavy chain constant region, resulting in a heavy chain comprising SEQ ID NO: 60 provided that the C-terminal lysine may or may not be present, and the mature light chain variable region is linked to a light chain constant region, resulting in a light chain comprising SEQ ID NO: 64.
5. The anti-TIGIT antibody of claim 2, wherein the mature heavy chain variable region is linked to a heavy chain constant region, resulting in a heavy chain comprising SEQ ID NO: 61, resulting in a heavy chain provided that the C-terminal lysine may or may not be present, and the mature light chain variable region is linked to a light chain constant region, resulting in a light chain comprising SEQ ID NO: 64.
6. A monoclonal antibody that binds to a TIGIT polypeptide, comprising a heavy chain CDR1 comprising the amino acid sequence of SEQ ID NO: 11, a heavy chain CDR2 comprising the amino acid sequence of SEQ ID NO: 12, a heavy chain CDR3 comprising the amino acid sequence of SEQ ID NO: 13, a light chain CDR1 comprising the amino acid sequence of SEQ ID NO: 15, a light chain CDR2 comprising the amino acid sequence of SEQ ID NO: 16, and a light chain CDR3 comprising the amino acid sequence of SEQ ID NO: 17, wherein the antibody

has one or more of the following properties:

- (a) inhibits binding of TIGIT to CD155 optionally with an IC_{50} of 15-100 ng/ml,
 - (b) increases intrinsic T-cell activation in the presence of antigen presenting cells expressing CD155 as measured by IL-2 production, optionally by 1.5-3 fold, as compared to intrinsic T-cell activation in the presence of antigen presenting cells expressing CD155 and in the absence of the antibody,
 - (c) increases antigen-specific T-cell activation as measured by IL-2 production, optionally by 1.5-3 fold, as compared to antigen-specific T-cell activation in the absence of the antibody,
 - (d) increases natural killer cell activation as measured by production of any of IL-2, IL-6, $TNF\alpha$ or $IFN\gamma$, optionally by 1.5-3 fold, as compared to natural killer cell activation in the absence of the antibody,
 - (e) increases T-cell production of at least one pro-inflammatory cytokine, optionally by 1.5-3 fold, as compared to T-cell production of the at least one pro-inflammatory cytokine in the absence of the antibody, and
 - (f) reduces T-cell production of a least one anti-inflammatory cytokine, optionally by 1.5-3 fold, as compared to T-cell production of the a least one anti-inflammatory cytokine in the absence of the antibody.
7. The anti-TIGIT antibody of claim 1, wherein the antibody is a, a chimeric antibody, a humanized antibody, or a veneered antibody.
8. The anti-TIGIT antibody of claim 1, wherein the antibody (1) has a human IgG1 kappa isotype; (2) has a human IgG4 kappa isotype; (3) is an intact antibody; or (4) is a (a) single- chain antibody, (b) Fab fragment, or (c) $F(ab')_2$ fragment.
9. A pharmaceutical composition comprising an antibody according to claim 1 and a pharmaceutically acceptable carrier.