

Claims

[Claim 1]

An anti-latent TGF-beta 1 antibody comprising:

- (a) HVR-H1, HVR-H2 and HVR-H3 comprising the amino acid sequences of SEQ ID NO:20, 21 and 22, respectively, and HVR-L1, HVR-L2 and HVR-L3 comprising the amino acid sequences of SEQ ID NO:23, 24 and 25, respectively;
- (b) HVR-H1, HVR-H2 and HVR-H3 comprising the amino acid sequences of SEQ ID NO:26, 27 and 28, respectively, and HVR-L1, HVR-L2 and HVR-L3 comprising the amino acid sequences of SEQ ID NO:29, 30 and 31, respectively;
- (c) HVR-H1, HVR-H2 and HVR-H3 comprising the amino acid sequences of SEQ ID NO:32, 33 and 34, respectively, and HVR-L1, HVR-L2 and HVR-L3 comprising the amino acid sequences of SEQ ID NO:35, 36 and 37, respectively; or
- (d) HVR-H1, HVR-H2 and HVR-H3 comprising the amino acid sequences of SEQ ID NO:38, 39 and 40, respectively, and HVR-L1, HVR-L2 and HVR-L3 comprising the amino acid sequences of SEQ ID NO:41, 42 and 43, respectively.

[Claim 2]

The anti-latent TGF-beta 1 antibody of Claim 1, comprising:

- (a) (i) a VH sequence having at least 95% sequence identity to the amino acid sequence of SEQ ID NO:12, (ii) a VL sequence having at least 95% sequence identity to the amino acid sequence of SEQ ID NO:13, or (iii) a VH sequence as in (i) and a VL sequence as in (ii);
- (b) (i) a VH sequence having at least 95% sequence identity to the amino acid sequence of SEQ ID NO:14, (ii) a VL sequence having at least 95% sequence identity to the amino acid sequence of SEQ ID NO:15, or (iii) a VH sequence as in (i) and a VL sequence as in (ii);
- (c) (i) a VH sequence having at least 95% sequence identity to the amino acid sequence of SEQ ID NO:16, (ii) a VL sequence having at least 95% sequence identity to the amino acid sequence of SEQ ID NO:17, or (iii) a VH sequence as in (i) and a VL sequence as in (ii); or
- (d) (i) a VH sequence having at least 95% sequence identity to the amino acid sequence of SEQ ID NO:18, (ii) a VL sequence having at least 95% sequence identity to the amino acid sequence of SEQ ID NO:19, or (iii) a VH sequence as in (i) and a VL sequence as in (ii).

[Claim 3]

An anti-latent TGF-beta 1 antibody comprising:

- (a) a VH sequence of SEQ ID NO:12 and a VL sequence of SEQ ID

- NO:13;
- (b) a VH sequence of SEQ ID NO:14 and a VL sequence of SEQ ID NO:15;
- (c) a VH sequence of SEQ ID NO:16 and a VL sequence of SEQ ID NO:17; or
- (d) a VH sequence of SEQ ID NO:18 and a VL sequence of SEQ ID NO:19.
- [Claim 4] The anti-latent TGF-beta 1 antibody of any one of Claims 1 to 3, which is a human, humanized, or chimeric antibody.
- [Claim 5] The anti-latent TGF-beta 1 antibody of any one of Claims 1 to 4, which is a full length IgG antibody, preferably a full length IgG1 antibody.
- [Claim 6] The anti-latent TGF-beta 1 antibody of any one of Claims 1 to 5, wherein the anti-latent TGF-beta 1 antibody comprises a modified IgG1 Fc region having reduced effector function compared with a wild type IgG1 Fc region.
- [Claim 7] An anti-latent TGF-beta 1 antibody comprising:
- (a) a full length heavy chain sequence of SEQ ID NO:47 and a full length light chain sequence of SEQ ID NO:60;
- (b) a full length heavy chain sequence of SEQ ID NO:48 and a full length light chain sequence of SEQ ID NO:61;
- (c) a full length heavy chain sequence of SEQ ID NO:49 and a full length light chain sequence of SEQ ID NO:62;
- (d) a full length heavy chain sequence of SEQ ID NO:50 and a full length light chain sequence of SEQ ID NO:63;
- (e) a full length heavy chain sequence of SEQ ID NO:51 and a full length light chain sequence of SEQ ID NO:64;
- (f) a full length heavy chain sequence of SEQ ID NO:52 and a full length light chain sequence of SEQ ID NO:65;
- (g) a full length heavy chain sequence of SEQ ID NO:53 and a full length light chain sequence of SEQ ID NO:66; or
- (h) a full length heavy chain sequence of SEQ ID NO:54 and a full length light chain sequence of SEQ ID NO:67.
- [Claim 8] An immunoconjugate comprising the anti-latent TGF beta-1 antibody of any one of Claims 1 to 7 and a cytotoxic agent.
- [Claim 9] An isolated nucleic acid encoding the anti-latent TGF beta-1 antibody of any one of Claims 1 to 7.
- [Claim 10] A vector comprising the nucleic acid of Claim 9.
- [Claim 11] A host cell comprising the nucleic acid of Claim 9 or the vector of

- Claim 10.
- [Claim 12] A method of producing an anti-latent TGF beta-1 antibody comprising culturing the host cell of Claim 11 so that the antibody is produced.
- [Claim 13] A pharmaceutical formulation comprising the anti-latent TGF beta-1 antibody of any one of Claims 1 to 7 or the immunoconjugate of Claim 8, and a pharmaceutically acceptable carrier.
- [Claim 14] The pharmaceutical formulation of Claim 13, for use in treatment of fibrosis or cancer.
- [Claim 15] The pharmaceutical formulation of Claim 13 or 14, for use in combination with an additional therapeutic agent, preferably an immune checkpoint inhibitor, for treatment of cancer.