

CLAIMS

WHAT IS CLAIMED IS:

~~1.~~ 1. An antibody or antigen binding fragment thereof that binds to [tumor necrosis factor-like ligand 1A \(TL1A\)](#), comprising a heavy chain variable framework region comprising a human IGHV1-46*02 framework ([SEQ ID NO: 316](#)) or a modified human IGHV1-46*02 framework, and a light chain variable framework region comprising a human IGKV3-20 framework ([SEQ ID NO: 317](#)) or a modified human IGKV3-20 framework; wherein the heavy chain variable framework region and the light chain variable framework region collectively comprise ~~less than 9~~ one to eight amino acid ~~modifications~~ modification(s) from the human IGHV1-46*02 framework and the human IGKV3-20 framework.

~~2.~~ The ~~antibody or antigen binding fragment of claim 1~~, wherein the amino acid modification ~~comprises(s)~~ comprise: (a) a modification at amino acid position ~~47~~ 45 in the heavy chain variable region; (b) a modification at amino acid position ~~45~~ 47 in the heavy chain variable region; (c) a modification at amino acid position 55 in the heavy chain variable region; (d) a modification at amino acid position 78 in the heavy chain variable region; (e) a modification at amino acid position 80 in the heavy chain variable region; (f) a modification at amino acid position 82 in the heavy chain variable region; (g) a modification at amino acid position 89 in the heavy chain variable region; or (h) a modification at amino acid position 91 in the heavy chain variable region; ~~per Kabat~~ Aho numbering; ~~(i)~~ or a combination of two or more modifications selected from (a) to (h). ———

~~3.~~ 2. The ~~antibody or antigen binding fragment of claim 2~~, wherein: The antibody or antigen binding fragment of claim 1, wherein the amino acid modification(s) comprise (a) ~~the amino acid modification is at position 47~~ R45K in the heavy chain variable region, ~~and the amino acid at position 47 is R, N, D, C, Q, E, G, H, I, L, K, M, F, P, S, T, W, Y, or V;~~ (b) ~~the amino acid modification is at position 45~~ A47R in the heavy chain variable region, ~~and the amino acid at position 45 is A, N, D, C, Q, E, G, H, I, L, K, M, F, P, S, T, W, Y, or V;~~ (c) ~~the amino acid modification is at position 55~~ M55I in the heavy chain variable region, ~~and the amino acid at position 55 is A, R, N, D, C, Q, E, G, H, I, L, K, F, P, S, T, W, Y, or V;~~ (d) ~~the amino acid modification is at position 78~~ V78A in the heavy chain variable region, ~~and the amino acid at position 78 is A, R, N, D, C, Q, E, G, H, I, L, K, M, F, P, S, T, W, or Y;~~ (e) ~~the amino acid modification is at position 80~~ M80I in the heavy chain variable region, ~~and the amino acid~~

at position 80 is A, R, N, D, C, Q, E, G, H, I, L, K, F, P, S, T, W, Y, or V; (f) the amino acid modification is at position 82 R82T in the heavy chain variable region, and the amino acid at position 82 is A, N, D, C, Q, E, G, H, I, L, K, M, F, P, S, T, W, Y, or V; (g) the amino acid modification is at position 89 V89A in the heavy chain variable region, and the amino acid at position 89 is A, R, N, D, C, Q, E, G, H, I, L, K, M, F, P, S, T, W, or Y; or (h) the amino acid modification is at position 91 M91L in the heavy chain variable region, and the amino acid at position 91 is A, R, N, D, C, Q, E, G, H, I, L, K, F, P, S, T, W, Y, or V; per Aho numbering; (i) or a combination of two or more modifications selected from (a) to (h).

4. 3. The antibody or antigen binding fragment of claim 12, wherein the amino acid modification ~~comprises one or more of: A47R, R45K, M55I, V78A, M80I, R82T, V89A, M91L in (s)~~ comprise: the heavy chain variable region, per Kabat numbering. A47R.

4. The antibody or antigen binding fragment of claim ~~1 or claim 3~~, wherein the amino acid modification(s) comprise: the A47R, M55I, V78A, M80I, R82T, V89A, and M91L; the A47R, M80I, and R82T; the A47R, M80I, R82T, V89A, and M91L; or the A47R, M55I, V78A, M80I, V89A, and M91L

5. The antibody or antigen binding fragment of claim 3, wherein the amino acid modification(s) comprise: the R45K and A47R.

6. The antibody or antigen binding fragment of claim 5, wherein the amino acid modification(s) comprise: the R45K, A47R, V89A, and M91L.

7. The antibody or antigen binding fragment of claim 5, wherein the amino acid modification(s) comprise: the R45K and A47R, and M80I.

8. The antibody or antigen binding fragment of claim 7, wherein the amino acid modification(s) comprise: the R45K, A47R, M80I, and M91L; the R45K, A47R, V78A, M80I, V89A, and M91L; the R45K, A47R, M55I, V78A, M80I, R82T, V89A, and M91L; the R45K, A47R, M80I, V89A, and M91L; the R45K, A47R, M55I, M80I, R82T, V89A, and M91L; the R45K, A47R, M80I, and V89A; the R45K, A47R, M80I, R82T, V89A, M91L; or the R45K, A47R, M55I, M80I, V89A, and M91L.

9. The antibody or antigen binding fragment of claim 2, wherein the amino acid modification(s) comprise: the R45K.

10. The antibody or antigen binding fragment of claim 9, wherein the amino acid modification(s) comprise: the R45K and V78A.

11. The antibody or antigen binding fragment of claim 2, wherein the amino acid modification(s) comprise: the V78A.

12. The antibody or antigen binding fragment of claim 11, wherein the amino acid modification(s) comprise: the V78A and V89A; the V78A and M80I; or the V78A, M80I, and R82T.

13. The antibody or antigen binding fragment of claim 2, wherein the amino acid modification(s) comprise: the V89A.

14. The antibody or antigen binding fragment of claim 2, wherein the amino acid modification(s) comprise: the M80I.

~~5.~~ 15. An antibody or antigen binding fragment thereof that binds to tumor necrosis factor-like ligand 1A (TL1A), comprising a heavy chain variable framework region comprising a human IGHV1-46*02 framework (SEQ ID NO: 316) or a modified human IGHV1-46*02 framework, and a light chain variable framework region comprising a human IGKV3-20 framework (SEQ ID NO: 317) or a modified human IGKV3-20 framework; wherein the heavy chain variable framework region and the light chain variable framework region collectively comprise one to eight amino acid modification(s) from the human IGHV1-46*02 framework and the human IGKV3-20 framework, wherein the amino acid modification(s) comprises: (a) a modification at amino acid position 54 in the light chain variable region; and/or (b) a modification at amino acid position 55 in the light chain variable region; per ~~Kabat~~Aho numbering.

~~6.—16. The antibody or antigen binding fragment of claim 5, wherein: (a) the amino acid modification is at position 54 of the light chain variable region, and the amino acid at position 54 is A, R, N, D, C, Q, E, G, H, I, K, M, F, P, S, T, W, Y, or V; and/or (b) the amino acid modification is at position 55 of the light chain variable region, and the amino acid at position 55 is A, R, N, D, C, Q, E, G, H, I, K, M, F, P, S, T, W, Y, or V.~~

~~The antibody or antigen binding fragment of claim 5~~ 15, wherein the amino acid modification comprises L54P ~~and/or in the light chain variable region, per Aho numbering.~~

~~7.~~ 17. The antibody or antigen binding fragment of claim 15, wherein the amino acid modification comprises L55W in the light chain variable region, per ~~Kabat~~Aho numbering.

~~8.—18.~~ The antibody or antigen binding fragment of ~~any one of claims 1-7, comprising a heavy chain CDR1 as set forth by SEQ ID NO: 1, a heavy chain CDR2 as set forth by any one of SEQ ID NOS: 2-5, a heavy chain CDR3 as set forth by any one of SEQ ID NOS: 6-9, a light chain CDR1 as set forth by SEQ ID NO: 10, a light chain CDR2 as set forth by SEQ ID NO: 11, and a light chain CDR3 as set forth by any one of SEQ ID NOS: 12-15.~~

~~9.—The antibody or antigen binding fragment of any one of claims 1-8, comprising a heavy chain framework (FR) 1 as set forth by SEQ ID NO: 304, a heavy chain FR2 as set forth by SEQ ID NO: 305 or SEQ ID NO: 313, a heavy chain FR3 as set forth by any one of SEQ ID NOS: 306, 307, 314, or 315, a heavy chain FR4 as set forth by SEQ ID NO: 308, a light chain FR1 as set forth by SEQ ID NO: 309, a light chain FR2 as set forth by SEQ ID NO: 310, a light chain FR3 as set forth by SEQ ID NO: 311, or a light chain FR4 as set forth by SEQ ID NO: 312, or a combination thereof.~~

~~10.—The antibody or antigen binding fragment of any one of claims 1-9, comprising a human IgG1 Fe region comprising (a) 297A, 297Q, 297G, or 297D, (b) 279F, 279K, or 279L, (c) 228P, (d) 235A, 235E, 235G, 235Q, 235R, or 235S, (e) 237A, 237E, 237K, 237N, or 237R, (f) 234A, 234V, or 234F, (g) 233P, (h) 328A, (i) 327Q or 327T, (j) 329A, 329G, 329Y, or 329R (k) 331S, (l) 236F or 236R, (m) 238A, 238E, 238G, 238H, 238I, 238V, 238W, or 238Y, (n) 248A, (o) 254D, 254E, 254G, 254H, 254I, 254N, 254P, 254Q, 254T, or 254V, (p) 255N, (q) 256H, 256K, 256R, or 256V, (r) 264S, (s) 265H, 265K, 265S, 265Y, or 265A, (t) 267G, 267H, 267I, or 267K, (u) 268K, (v) 269N or 269Q, (w) 270A, 270G, 270M, or 270N, (x) 271T, (y) 272N, (z) 292E, 292F, 292G, or 292I, (aa) 293S, (bb) 301W, (cc) 304E, (dd) 311E, 311G, or 311S, (ee) 316F, (ff) 328V, (gg) 330R, (hh) 339E or 339L, (ii) 343I or 343V, (jj) 373A, 373G, or 373S, (kk) 376E, 376W, or 376Y, (ll) 380D, (mm) 382D or 382P, (nn) 385P, (oo) 424H, 424M, or 424V, (pp) 434I, (qq) 438G, (rr) 439E, 439H, or 439Q, (ss) 440A, 440D, 440E, 440F, 440M, 440T, or 440V, (tt) E233P, (uu) L235E, (vv) L234A and L235A, (ww) L234A, L235A, and G237A, (xx) L234A, L235A, and P329G, (yy) L234F,~~

~~L235E, and P331S, (zz) L234A, L235E, and G237A, (aaa), L234A, L235E, G237A, and P331S (bbb) L234A, L235A, G237A, P238S, H268A, A330S, and P331S (IgG1 σ), (ccc) L234A, L235A, and P329A, (ddd) G236R and L328R, (eee) G237A, (fff) F241A, (ggg) V264A, (hhh) D265A, (iii) D265A and N297A, (jjj) D265A and N297G, (kkk) D270A, (lll) A330L, (mmm) P331A or P331S, or (nnn) any combination of two or more selected from (a) —(uu), per Kabat numbering.~~

~~11. The antibody or antigen binding fragment of any one of claims 1-9, comprising a human IgG4 Fe region.~~

~~12. The antibody or antigen binding fragment of any one of claims 1-9, comprising a Fe region comprising a sequence at least about 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical to any one of SEQ ID NOS: 320-362.~~

~~13. The antibody or antigen binding fragment of any one of claims 1-12~~claim 1 or 15, comprising at least about 80% monomeric fraction as determined by size exclusion chromatography.

~~14. 19. The antibody or antigen binding fragment of any one of claims 1-13, expressing at least about 20 ug/ml total antibody, optionally about 20 ug/ml and 70 ug/mL total antibody.~~

~~15. An antibody or antigen binding fragment thereof that binds to TL1A, comprising a heavy chain variable region comprising: (a) an HCDR1 comprising an amino acid sequence set forth by SEQ ID NO: 1; (b) an HCDR2 comprising an amino acid sequence set forth by any one of SEQ ID NOS: 2-5; and (c) an HCDR3 comprising an amino acid sequence set forth by any one of SEQ ID NOS: 6-9; and the light chain variable region comprises: (d) an LCDR1 comprising an amino acid sequence set forth by SEQ ID NO: 10; (e) an LCDR2 comprising an amino acid sequence set forth by SEQ ID NO: 11; (f) an LCDR3 comprising an amino acid sequence set forth by any one of SEQ ID NOS: 12-15; and a fragment crystallizable (Fc) region comprising reduced antibody dependent cell mediated cytotoxicity (ADCC) function as compared to human IgG1 and/or reduced complement dependent cytotoxicity (CDC) as compared to human IgG1.~~

~~16. The antibody or antigen binding fragment of claim 15~~7, wherein the human IgG1 comprises SEQ ID NO: 320.

~~17. The antibody of antigen binding fragment of claim 15 or claim 16, wherein the ADCC function of the Fc region comprising reduced ADCC is at least about 50% reduced as compared to human IgG1.~~

~~18. The antibody of antigen binding fragment of any one of claims 15-17 wherein the CDC function of the Fc region comprising reduced CDC is at least about 50% reduced as compared to human IgG1.~~

~~19. The antibody of antigen binding fragment of any one of claims 15-18, wherein the Fc region comprises a human IgG1 comprising (a) 297A, 297Q, 297G, or 297D, (b) 279F, 279K, or 279L, (c) 228P, (d) 235A, 235E, 235G, 235Q, 235R, or 235S, (e) 237A, 237E, 237K, 237N, or 237R, (f) 234A, 234V, or 234F, (g) 233P, (h) 328A, (i) 327Q or 327T, (j) 329A, 329G, 329Y, or 329R (k) 331S, (l) 236F or 236R, (m) 238A, 238E, 238G, 238H, 238I, 238V, 238W, or 238Y, (n) 248A, (o) 254D, 254E, 254G, 254H, 254I, 254N, 254P, 254Q, 254T, or 254V, (p) 255N, (q) 256H, 256K, 256R, or 256V, (r) 264S, amino acid modification(s) 265H, 265K, 265S, 265Y, or 265A, (t) 267G, 267H, 267I, or 267K, (u) 268K, (v) 269N or 269Q, (w) 270A, 270G, 270M, or 270N, (x) 271T, (y) 272N, (z) 292E, 292F, 292G, or 292I, (aa) 293S, (bb) 301W, (cc) 304E, (dd) 311E, 311G, or 311S, (ee) 316F, (ff) 328V, (gg) 330R, (hh) 339E or 339L, (ii) 343I or 343V, (jj) 373A, 373G, or 373S, (kk) 376E, 376W, or 376Y, (ll) 380D, (mm) 382D or 382P, (nn) 385P, (oo) 424H, 424M, or 424V, (pp) 434I, (qq) 438G, (rr) 439E, 439H, or 439Q, (ss) 440A, 440D, 440E, 440F, 440M, 440T, or 440V, (tt) E233P, (uu) L235E, (vv) L234A and L235A, (ww) L234A, L235A, and G237A, (xx) L234A, L235A, and P329G, (yy) L234F, L235E, and P331S, (zz) L234A, L235E, and G237A, (aaa) L234A, L235E, G237A, and P331S (bbb) L234A, L235A, G237A, P238S, H268A, A330S, and P331S (IgG1 σ), (ccc) L234A, L235A, and P329A, (ddd) G236R and L328R, (eee) G237A, (fff) F241A, (ggg) V264A, (hhh) D265A, (iii) D265A and N297A, (jjj) D265A and N297G, (kkk) D270A, (lll) A330L, (mmm) P331A or P331S, or (nnn) any combination of two or more selected from (a) – (uu), per Kabat numbering comprise: the R45K, A47R, M80I, and M91L.~~

~~20. The antibody of antigen binding fragment of any one of claims 15-18, comprising a (i) human IgG4 Fc region or (ii) a human IgG4 Fc region comprising (a) S228P, (b) S228P and L235E, or (c) S228P, F234A, and L235A, per Kabat numbering.~~

~~21. The antibody of antigen binding fragment of any one of claims 15-18, comprising a human IgG2 Fc region; IgG2-IgG4 cross-subclass Fc region; IgG2-IgG3 cross-subclass Fc region; IgG2 comprising H268Q, V309L, A330S, P331S (IgG2m4); or IgG2 comprising V234A, G237A, P238S, H268A, V309L, A330S, P331S (IgG2 σ).~~

- ~~22. The antibody or antigen-binding fragment of any one of claims 15-18, wherein the Fc region comprises a human IgG1 with a substitution selected from 329A, 329G, 329Y, 331S, 236F, 236R, 238A, 238E, 238G, 238H, 238I, 238V, 238W, 238Y, 248A, 254D, 254E, 254G, 254H, 254I, 254N, 254P, 254Q, 254T, 254V, 264S, 265H, 265K, 265S, 265Y, 265A, 267G, 267H, 267I, 267K, 434I, 438G, 439E, 439H, 439Q, 440A, 440D, 440E, 440F, 440M, 440T, and 440V, per Kabat numbering.~~
- ~~23. The antibody or antigen-binding fragment of any one of claims 15-18, comprising a sequence at least about 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical to any one of SEQ ID NOS: 320-362.~~
- ~~24. The antibody or antigen-binding fragment of any one of claims 15-18, wherein the Fc region comprises any one of SEQ ID NOs: 401-413 or a sequence at least about 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, or 99% identical to any one of SEQ ID NOs: 401-413.~~
- ~~25. The antibody or antigen-binding fragment of any one of claims 15-18, wherein the heavy chain comprises any one of SEQ ID NOs: 501-513 or a sequence at least about 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, or 99% identical to any one of SEQ ID NOs: 501-513.~~
- ~~26. The antibody or antigen-binding fragment of any one of claims 15-25, wherein the light chain comprises any one of SEQ ID NO: 514 or a sequence at least about 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, or 99% identical to any one of SEQ ID NO: 514.~~
- ~~27. The antibody or antigen-binding fragment of any one of claims 15-26 comprising at least about 80% monomeric fraction as determined by size exclusion chromatography.~~
- ~~28. The antibody or antigen-binding fragment of any one of claims 15-27, expressing at least about 20 ug/ml total antibody, optionally about 20 ug/ml and 70 ug/mL total antibody.~~
- ~~29. A method of treating inflammatory bowel disease (IBD) in a subject in need thereof, the method comprising administering to the subject an antibody or antigen-binding fragment of any one of claims 1-28.~~
- ~~30. The method of claim 29, wherein the subject has fibrosis.~~
- ~~31. The method of claim 29, wherein the IBD comprises Crohn's Disease.~~
- ~~32. The method of claim 29, wherein the IBD comprises ulcerative colitis.~~

~~33. A liquid composition comprising the antibody or antigen binding fragment of any one of claims 1-28, comprising a concentration of the antibody or antigen binding fragment of 10 mg/ml to 170 mg/ml.~~

~~34. A liquid composition comprising an~~20. An antibody or antigen binding fragment thereof that binds to TL1A, wherein the antibody or antigen binding fragment thereof ~~is at a concentration of 10 mg/ml to 170 mg/ml~~comprises: (a) a heavy chain variable region comprising an amino acid sequence at least 96% identical to SEQ ID NO: 104 and (b) a light chain variable region comprising an amino acid sequence at least 96% identical to SEQ ID NO: 201.

~~35. The liquid composition of claim 33 or claim 34, comprising a pharmaceutically acceptable excipient.~~

~~36. The liquid composition of any one of claims 33-35, wherein the viscosity is from about 4 to about 30 mPa·s (millipascal second (mPa·s)).~~

~~37. The liquid composition of any one of claims 33-35, wherein the viscosity is from about 4 to about 10 mPa·s (millipascal second (mPa·s)).~~

21. The antibody or antigen binding fragment of claim 20, wherein the antibody or antigen binding fragment thereof comprises: (a) a heavy chain variable region comprising an amino acid sequence at least 97%, 98%, or 99% identical to SEQ ID NO: 104 and (b) a light chain variable region comprising an amino acid sequence at least 97%, 98%, or 99% identical to SEQ ID NO: 201.

22. The antibody or antigen binding fragment of claim 20, wherein the heavy chain variable region comprises three heavy chain complementarity determining regions (HCDRs) comprising the amino acid sequences of the corresponding three HCDRs as set forth in SEQ ID NO: 104 and the light chain variable region comprises three light chain complementarity determining regions (LCDRs) comprising the amino acid sequences of the corresponding three LCDRs as set forth in SEQ ID NO: 201, wherein the HCDRs and LCDRs are determined by Kabat, Chothia, IMGT, Contact, AbM, or Aho numbering scheme.

23. The antibody or antigen binding fragment of claim 20, wherein the heavy chain variable region comprises a heavy chain complementarity-determining region 1 (HCDR1) comprising the amino acid sequence set forth in SEQ ID NO: 1, a heavy chain complementarity-

determining region 2 (HCDR2) comprising the amino acid sequence set forth in SEQ ID NO: 2, and a heavy chain complementarity-determining region 3 (HCDR3) comprising the amino acid sequence set forth in SEQ ID NO: 6, and wherein the light chain variable region comprises a light chain complementarity-determining region 1 (LCDR1) comprising the amino acid sequence set forth in SEQ ID NO: 10, a light chain complementarity-determining region 2 (LCDR2) comprising the amino acid sequence set forth in SEQ ID NO: 11, and a light chain complementarity-determining region 3 (LCDR3) comprising the amino acid sequence set forth in SEQ ID NO: 12.

24. The antibody or antigen binding fragment of claim 20, wherein the antibody or antigen binding fragment thereof comprises: (a) a heavy chain variable region comprising SEQ ID NO: 104 and (b) a light chain comprising SEQ ID NO: 201.

25. The antibody or antigen binding fragment of any one of claims 20 to 24, wherein the antibody or antigen binding fragment thereof is a humanized antibody or humanized antigen binding fragment.

26. The antibody or antigen binding fragment of any one of claims 20 to 24, wherein (i) the antibody or antigen binding fragment comprises a human IgG1 heavy chain constant region, (ii) the antibody or antigen binding fragment comprises a human kappa light chain constant region, or (iii) the antibody or antigen binding fragment comprises a human IgG1 heavy chain constant region and a human kappa light chain constant region.

27. The antibody or antigen binding fragment of claim 26, wherein the heavy chain constant region comprises 1 amino acid deletion.

28. An antibody that binds to TL1A, wherein the antibody comprises: (a) a heavy chain comprising an amino acid sequence at least 96% identical to SEQ ID NO: 505 and (b) a light chain comprising an amino acid sequence at least 96% identical to SEQ ID NO: 514.

29. The antibody of claim 28, wherein the antibody comprises: (a) a heavy chain comprising an amino acid sequence at least 97%, 98%, or 99% identical to SEQ ID NO: 505 and (b) a light chain comprising an amino acid sequence at least 96%, 97%, 98%, or 99% identical to SEQ ID NO: 514.

30. The antibody of claim 28, wherein the heavy chain comprises three heavy chain complementarity determining regions (HCDRs) comprising the amino acid sequences of the corresponding three HCDRs as set forth in SEQ ID NO: 505 and the light chain comprises three light chain complementarity determining regions (LCDRs) comprising the amino acid sequences of the corresponding three LCDRs as set forth in SEQ ID NO: 514, wherein the HCDRs and LCDRs are determined by Kabat, Chothia, IMGT, Contact, AbM, or Aho numbering scheme.

31. The antibody of claim 28, wherein the heavy chain comprises a heavy chain complementarity-determining region 1 (HCDR1) comprising the amino acid sequence set forth in SEQ ID NO: 1, a heavy chain complementarity-determining region 2 (HCDR2) comprising the amino acid sequence set forth in SEQ ID NO: 2, and a heavy chain complementarity-determining region 3 (HCDR3) comprising the amino acid sequence set forth in SEQ ID NO: 6, and wherein the light chain comprises a light chain complementarity-determining region 1 (LCDR1) comprising the amino acid sequence set forth in SEQ ID NO: 10, a light chain complementarity-determining region 2 (LCDR2) comprising the amino acid sequence set forth in SEQ ID NO: 11, and a light chain complementarity-determining region 3 (LCDR3) comprising the amino acid sequence set forth in SEQ ID NO: 12.

32. The antibody of claim 28, wherein the antibody comprises: (a) a heavy chain comprising SEQ ID NO: 505 and (b) a light chain comprising SEQ ID NO: 514.

33. The antibody of claim 28, wherein the antibody is a humanized antibody.

34. The antibody of claim 28, wherein (i) the heavy chain is a human IgG1 isotype, (ii) the light chain is a human kappa light chain, or (iii) the heavy chain is a human IgG1 isotype and the light chain is a human kappa light chain.

35. The antibody of claim 28, wherein the heavy chain constant region comprises 1 amino acid deletion.

36. An isolated polynucleotide encoding the antibody or antigen binding fragment of any one of claims 20 to 24 and 28 to 35.

37. An isolated vector comprising the polynucleotide of claim 36.

38. A host cell comprising the vector of claim 37.

39. A method of making an antibody or antigen binding fragment thereof that binds to TL1A, wherein the method comprises:

- a) culturing the host cell of claim 38 under conditions suitable for expression of the polynucleotide encoding the antibody or antigen binding fragment thereof; and
- b) isolating the antibody or antigen binding fragment thereof.

40. Use of a therapeutically effective amount of the antibody or antigen binding fragment of any one of claims 20 to 24 and 28 to 35 in the manufacture of a medicament for treating inflammatory bowel disease (IBD) in a subject in need thereof.

41. The antibody or antigen binding fragment of any one of claims 20 to 24 and 28 to 35 for use in therapy.