SUMMARY

[0021] The disclosure is based, at least in part, on the development of improved processes for the purification of recombinant polypeptides produced in Chinese hamster ovary (CHO) cells that provide purified product with substantially reduced levels of hamster PLBL2. Recombinant polypeptides purified according to the methods of the disclosure, including therapeutic antibodies such as an anti-IL13 antibody, may have reduced immunogenicity when administered to human subjects.

[0022] Accordingly, disclosed are compositions comprising an anti-IL13 monoclonal antibody purified from CHO cells comprising the anti-IL13 antibody and a residual amount of hamster. In one aspect, there is provided a composition comprising an anti-IL13 monoclonal antibody purified from Chinese hamster ovary host cells, wherein the composition comprises the anti-IL13 antibody and a residual amount of hamster PLBL2, wherein the amount of hamster PLBL2 is less than 20 ng/mg, or less than 15 ng/mg, or less than 10 ng/mg, or less than 8 ng/mg, or less than 5 ng/mg, or less than 3 ng/mg, or less than 2 ng/mg, or less than 1 ng/mg, or less than 0.5 ng/mg, wherein the anti-IL13 antibody comprises three heavy chain CDRs, CDR-H1 having the amino acid sequence of SEQ ID NO.: 1, CDR-H2 having the amino acid sequence of SEQ ID NO.: 2, and CDR-H3 having the amino acid sequence of SEQ ID NO.: 3, and three light chain CDRs, CDR-L1 having the amino acid sequence of SEQ ID NO.: 4, CDR-L2 having the amino acid sequence of SEQ ID NO.: 5, and CDR-L3 having the amino acid sequence of SEQ ID NO.: 6, and wherein the anti-IL13 antibody is purified by a method comprising hydrophobic interaction chromatography (HIC). In certain embodiments, the amount of hamster PLBL2 is less than 20 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 15 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 10 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 8 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 5 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 3 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 2 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 1 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 0.5 ng/mg. In certain embodiments, the amount of hamster PLBL2 is between 0.5 ng/mg and 20 ng/mg, or between 0.5 ng/mg and 15 ng/mg, or between 0.5 ng/mg and 10 ng/mg, or between 0.5 ng/mg and 8 ng/mg, or between 0.5 ng/mg and 5 ng/mg, or between 0.5 ng/mg and 3 ng/mg, or between 0.5. ng/mg and 2 ng/mg, or between 0.5 ng/mg and 1 ng/mg, or between the limit of assay quantitation (LOQ) and 1 ng/mg. In certain embodiments, the anti-IL13 antibody comprises three heavy chain CDRs, CDR-H1 having the amino acid sequence of SEQ ID NO.: 1, CDR-H2 having the amino acid sequence of SEQ ID NO.: 2, and CDR-H3 having the amino acid sequence of SEQ ID NO.: 3, and three light chain CDRs, CDR-L1 having the amino acid sequence of SEQ ID NO.: 4, CDR-L2 having the amino acid sequence of SEQ ID NO.: 5, and CDR-L3 having the amino acid sequence of SEQ ID NO.: 6. In certain embodiments, the anti-IL13 antibody comprises a heavy chain variable region having the amino acid sequence of SEQ ID NO.: 7. In certain embodiments, the anti-IL13 antibody comprises a light chain variable region having the amino acid sequence of SEQ ID NO.: 9. In certain embodiments, the anti-IL13 antibody comprises a heavy chain having the amino acid sequence of SEQ ID NO.: 10. In certain embodiments, the anti-IL13 antibody comprises a light chain having the amino acid sequence of SEQ ID NO.: 14. In certain embodiments, the anti-IL13 antibody comprises a heavy chain variable region having

the amino acid sequence of SEQ ID NO.: 7 and a light chain variable region having the amino acid sequence of SEQ ID NO.: 9. In certain embodiments, the anti-IL13 antibody comprises a heavy chain having the amino acid sequence of SEQ ID NO.: 10 and a light chain having the amino acid sequence of SEQ ID NO.: 14. In certain embodiments, the amount of hamster PLBL2 in the composition is quantified using an immunoassay or a mass spectrometry assay. In certain embodiments, the immunoassay is a total Chinese hamster ovary protein ELISA or a hamster PLBL2 ELISA. In certain embodiments, the mass spectrometry assay is LC-MS/MS.

[0023] Also disclosed are anti-IL13 monoclonal antibody preparations isolated and purified from CHO cells by a process comprising a hydrophobic interaction chromatography (HIC) step. In certain embodiments, the purified preparation comprises the anti-IL13 antibody and a residual amount of hamster PLBL2. In one aspect, there is provided a purified anti-IL13 monoclonal antibody preparation isolated from Chinese hamster ovary host cells, wherein the preparation is purified by a process comprising a hydrophobic interaction chromatography (HIC) step thereby producing a purified preparation, wherein the purified preparation comprises the anti-IL13 antibody and a residual amount of hamster PLBL2, wherein the amount of hamster PLBL2 is less than 20 ng/mg, or less than 15 ng/mg, or less than 10 ng/mg, or less than 8 ng/mg, or less than 5 ng/mg, or less than 3 ng/mg, or less than 2 ng/mg, or less than 1 ng/mg, or less than 0.5 ng/mg, and wherein the anti-IL13 antibody comprises three heavy chain CDRs, CDR-H1 having the amino acid sequence of SEQ ID NO.: 1, CDR-H2 having the amino acid sequence of SEQ ID NO.: 2, and CDR-H3 having the amino acid sequence of SEQ ID NO.: 3, and three light chain CDRs, CDR-L1 having the amino acid sequence of SEQ ID NO.: 4, CDR-L2 having the amino acid sequence of SEQ ID NO.: 5, and CDR-L3 having the amino acid sequence of SEQ ID NO.: 6. In certain embodiments, the amount of hamster PLBL2 is less than 20 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 15 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 10 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 8 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 5 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 3 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 2 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 1 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 0.5 ng/mg. In certain embodiments, the amount of hamster PLBL2 is between 0.5 ng/mg and 20 ng/mg, or between 0.5 ng/mg and 15 ng/mg, or between 0.5 ng/mg and 10 ng/mg, or between 0.5 ng/mg and 8 ng/mg, or between 0.5 ng/mg and 5 ng/mg, or between 0.5 ng/mg and 3 ng/mg, or between 0.5. ng/mg and 2 ng/mg, or between 0.5 ng/mg and 1 ng/mg, or between the limit of assay quantitation (LOQ) and 1 ng/mg. In certain embodiments, the HIC step comprises PHENYL SEPHAROSE™ 6 Fast Flow (High Sub) resin. In certain embodiments, the HIC step comprises operating a resin-containing column in flow-through mode. In certain embodiments, the HIC step comprises an equilibration buffer and a wash buffer, wherein each of the equilibration buffer and the wash buffer comprise 50 mM sodium acetate pH 5.0. In certain embodiments, the flow-through is monitored by absorbance at 280 nanometers and the flow-through is collected between 0.5 OD to 1.5 OD. In certain embodiments, the flow-through is collected for a maximum of 8 column volumes. In certain embodiments, the process further comprises an affinity chromatography step. In certain embodiments, the affinity chromatography is protein A chromatography. In certain embodiments, the process further comprises an ion exchange chromatography step. In certain embodiments, the ion exchange chromatography is anion exchange chromatography. In certain embodiments, the anti-IL13

antibody comprises three heavy chain CDRs, CDR-H1 having the amino acid sequence of SEQ ID NO.: 1, CDR-H2 having the amino acid sequence of SEQ ID NO.: 2, and CDR-H3 having the amino acid sequence of SEQ ID NO.: 3, and three light chain CDRs, CDR-L1 having the amino acid sequence of SEQ ID NO.: 4, CDR-L2 having the amino acid sequence of SEQ ID NO.: 5, and CDR-L3 having the amino acid sequence of SEQ ID NO.: 6. In certain embodiments, the anti-IL13 antibody comprises a heavy chain variable region having the amino acid sequence of SEQ ID NO.: 7. In certain embodiments, the anti-IL13 antibody comprises a light chain variable region having the amino acid sequence of SEQ ID NO.: 9. In certain embodiments, the anti-IL13 antibody comprises a heavy chain having the amino acid sequence of SEQ ID NO.: 10. In certain embodiments, the anti-IL13 antibody comprises a light chain having the amino acid sequence of SEQ ID NO.: 14. In certain embodiments, the anti-IL13 antibody comprises a heavy chain variable region having the amino acid sequence of SEQ ID NO.: 7 and a light chain variable region having the amino acid sequence of SEQ ID NO.: 9. In certain embodiments, the anti-IL13 antibody comprises a heavy chain having the amino acid sequence of SEQ ID NO.: 10 and a light chain having the amino acid sequence of SEQ ID NO.: 14. In certain embodiments, the amount of hamster PLBL2 is quantified using an immunoassay or a mass spectrometry assay. In certain embodiments, the immunoassay is a total Chinese hamster ovary protein ELISA or a hamster PLBL2 ELISA. In certain embodiments, the mass spectrometry assay is LC-MS/MS.

[0024] Further disclosed are purified anti-IL13 monoclonal antibody preparations isolated from CHO cells. In certain embodiments, the antibody preparation is purified by a process comprising a first Protein A affinity chromatography step, a second anion exchange chromatography step, and a third hydrophobic interaction chromatography (HIC) step thereby producing a purified preparation, In certain embodiments, the purified preparation comprises the anti-IL13 antibody and a residual amount of hamster PLBL2. In one aspect, there is provided a purified anti-IL13 monoclonal antibody preparation isolated from Chinese hamster ovary cells, wherein the antibody preparation is purified by a process comprising a first Protein A affinity chromatography step, a second anion exchange chromatography step, and a third hydrophobic interaction chromatography (HIC) step thereby producing a purified preparation, wherein the purified preparation comprises the anti-IL13 antibody and a residual amount of hamster PLBL2, wherein the amount of hamster PLBL2 is less than 20 ng/mg, or less than 15 ng/mg, or less than 10 ng/mg, or less than 8 ng/mg, or less than 5 ng/mg, or less than 3 ng/mg, or less than 2 ng/mg, or less than 1 ng/mg, or less than 0.5 ng/mg, and wherein the anti-IL13 antibody comprises three heavy chain CDRs, CDR-H1 having the amino acid sequence of SEQ ID NO.: 1, CDR-H2 having the amino acid sequence of SEQ ID NO.: 2, and CDR-H3 having the amino acid sequence of SEQ ID NO.: 3, and three light chain CDRs, CDR-L1 having the amino acid sequence of SEQ ID NO.: 4, CDR-L2 having the amino acid sequence of SEQ ID NO.: 5, and CDR-L3 having the amino acid sequence of SEQ ID NO.: 6. In certain embodiments, the amount of hamster PLBL2 is less than 20 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 15 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 10 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 8 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 5 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 3 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 2 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 1 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 0.5 ng/mg. In certain embodiments, the amount of hamster PLBL2 is between 0.5 ng/mg and 20 ng/mg, or between 0.5 ng/mg and 15 ng/mg, or between 0.5 ng/mg and 10 ng/mg, or between

0.5 ng/mg and 8 ng/mg, or between 0.5 ng/mg and 5 ng/mg, or between 0.5 ng/mg and 3 ng/mg, or between 0.5. ng/mg and 2 ng/mg, or between 0.5 ng/mg and 1 ng/mg, or between the limit of assay quantitation (LOQ) and 1 ng/mg. In certain embodiments, the affinity chromatography step comprises MABSELECT SURE™ resin, the anion exchange chromatography step comprises Q SEPHAROSE™ Fast Flow, and the HIC step comprises PHENYL SEPHAROSE™ 6 Fast Flow (high sub). In certain embodiments, the affinity chromatography step comprises operating a MABSELECT SURE™ resin-containing column in bind-elute mode, the anion exchange chromatography step comprises operating a Q SEPHAROSE™ Fast Flow resin-containing column in bind-elute mode, and the HIC step comprises operating a PHENYL SEPHAROSE™ 6 Fast Flow (High Sub) resin-containing column in flow-through mode. In certain embodiments, the anti-IL13 antibody comprises three heavy chain CDRs, CDR-H1 having the amino acid sequence of SEQ ID NO.: 1, CDR-H2 having the amino acid sequence of SEQ ID NO.: 2, and CDR-H3 having the amino acid sequence of SEQ ID NO.: 3, and three light chain CDRs, CDR-L1 having the amino acid sequence of SEQ ID NO.: 4, CDR-L2 having the amino acid sequence of SEQ ID NO.: 5, and CDR-L3 having the amino acid sequence of SEQ ID NO.: 6. In certain embodiments, the anti-IL13 antibody comprises a heavy chain variable region having the amino acid sequence of SEQ ID NO.: 7. In certain embodiments, the anti-IL13 antibody comprises a light chain variable region having the amino acid sequence of SEQ ID NO.: 9. In certain embodiments, the anti-IL13 antibody comprises a heavy chain having the amino acid sequence of SEQ ID NO.: 10. In certain embodiments, the anti-IL13 antibody comprises a light chain having the amino acid sequence of SEQ ID NO.: 14. In certain embodiments, the anti-IL13 antibody comprises a heavy chain variable region having the amino acid sequence of SEQ ID NO.: 7 and a light chain variable region having the amino acid sequence of SEQ ID NO.: 9. In certain embodiments, the anti-IL13 antibody comprises a heavy chain having the amino acid sequence of SEQ ID NO.: 10 and a light chain having the amino acid sequence of SEQ ID NO.: 14. In certain embodiments, the amount of hamster PLBL2 is quantified using an immunoassay or a mass spectrometry assay. In certain embodiments, the immunoassay is a total Chinese hamster ovary protein ELISA or a hamster PLBL2 ELISA. In certain embodiments, the mass spectrometry assay is LC-MS/MS.

[0025] In still yet another aspect, provided are methods of purifying a recombinant polypeptide produced in Chinese hamster ovary host cells comprising a hydrophobic interaction chromatography (HIC) step, wherein the method provides a purified preparation comprising the recombinant polypeptide and residual amount of hamster PLBL2 of less than 20 ng/mg, less than 15 ng/mg, less than 10 ng/mg, less than 8 ng/mg, less than 5 ng/mg, less than 3 ng/mg, less than 2 ng/mg, less than 1 ng/mg, or less than 0.5 ng/mg, and wherein the recombinant polypeptide is an anti-IL13 antibody that comprises three heavy chain CDRs, CDR-H1 having the amino acid sequence of SEQ ID NO.: 1, CDR-H2 having the amino acid sequence of SEQ ID NO.: 2, and CDR-H3 having the amino acid sequence of SEQ ID NO.: 3, and three light chain CDRs, CDR-L1 having the amino acid sequence of SEQ ID NO.: 4, CDR-L2 having the amino acid sequence of SEQ ID NO.: 5, and CDR-L3 having the amino acid sequence of SEQ ID NO.: 6. In certain embodiments, the amount of hamster PLBL2 is less than 20 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 15 ng/mg. In certain embodiments, the amount of hamster PLBL2

amount of hamster PLBL2 is less than 3 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 2 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 1 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 0.5 ng/mg. In certain embodiments, the amount of hamster PLBL2 is between 0.5 ng/mg and 20 ng/mg, or between 0.5 ng/mg and 15 ng/mg, or between 0.5 ng/mg and 10 ng/mg, or between 0.5 ng/mg and 8 ng/mg, or between 0.5 ng/mg and 5 ng/mg, or between 0.5 ng/mg and 3 ng/mg, or between 0.5. ng/mg and 2 ng/mg, or between 0.5 ng/mg and 1 ng/mg, or between the limit of assay quantitation (LOQ) and 1 ng/mg. In certain embodiments, the HIC step comprises PHENYL SEPHAROSE™ 6 Fast Flow (High Sub) resin. In certain embodiments, the HIC step comprises operating a resin-containing column in flow-through mode. In certain embodiments, the HIC step comprises an equilibration buffer and a wash buffer, wherein each of the equilibration buffer and the wash buffer comprise 50 mM sodium acetate pH 5.5. In certain embodiments, the flow-through is monitored by absorbance at 280 nanometers and the flow-through is collected between 0.5 OD and for 10 column volumes. In certain embodiments, the process further comprises an affinity chromatography step. In certain embodiments, the affinity chromatography is protein A chromatography. In certain embodiments, the process further comprises a cation exchange chromatography step. In certain embodiments, the anti- IL17 A/F antibody comprises three heavy chain CDRs, CDR-H1 having the amino acid sequence of SEQ ID NO.: 15, CDR-H2 having the amino acid sequence of SEQ ID NO.: 16, and CDR-H3 having the amino acid sequence of SEQ ID NO.: 17, and three light chain CDRs, CDR-L1 having the amino acid sequence of SEQ ID NO.: 18, CDR-L2 having the amino acid sequence of SEQ ID NO.: 19, and CDR-L3 having the amino acid sequence of SEQ ID NO.: 20. In certain embodiments, the anti- IL17 A/F antibody comprises a heavy chain variable region having the amino acid sequence of SEQ ID NO.: 21. In certain embodiments, the anti- IL17 A/F antibody comprises a light chain variable region having the amino acid sequence of SEQ ID NO.: 22. In certain embodiments, the anti- IL17 A/F antibody comprises a heavy chain variable region having the amino acid sequence of SEQ ID NO.: 21 and a light chain variable region having the amino acid sequence of SEQ ID NO.: 32. In certain embodiments, the amount of hamster PLBL2 is quantified using an immunoassay or a mass spectrometry assay. In certain embodiments, the immunoassay is a total Chinese hamster ovary protein ELISA or a hamster PLBL2 ELISA. In certain embodiments, the mass spectrometry assay is LC-MS/MS.

[0031] Also disclosed are compositions comprising an anti-Abeta monoclonal antibody purified from CHO cells comprising the anti-Abeta antibody and a residual amount of hamster PLBL2. Disclosed is a composition comprising an anti-Abeta monoclonal antibody purified from Chinese hamster ovary host cells, wherein the composition comprises the anti-Abeta antibody and a residual amount of hamster PLBL2, wherein the amount of hamster PLBL2 is less than 20 ng/mg, or less than 15 ng/mg, or less than 10 ng/mg, or less than 8 ng/mg, or less than 5 ng/mg, or less than 3 ng/mg, or less than 2 ng/mg, or less than 1 ng/mg, or less than 0.5 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 20

ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 15 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 10 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 8 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 5 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 3 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 2 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 1 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 0.5 ng/mg. In certain embodiments, the amount of hamster PLBL2 is between 0.5 ng/mg and 20 ng/mg, or between 0.5 ng/mg and 15 ng/mg, or between 0.5 ng/mg and 10 ng/mg, or between 0.5 ng/mg and 8 ng/mg, or between 0.5 ng/mg and 5 ng/mg, or between 0.5 ng/mg and 3 ng/mg, or between 0.5. ng/mg and 2 ng/mg, or between 0.5 ng/mg and 1 ng/mg, or between the limit of assay quantitation (LOQ) and 1 ng/mg. In certain embodiments, the anti-Abeta antibody is crenezumab. In certain embodiments, the anti-Abeta antibody comprises three heavy chain CDRs, CDR-H1 having the amino acid sequence of SEQ ID NO.:23, CDR-H2 having the amino acid sequence of SEQ ID NO.:24, and CDR-H3 having the amino acid sequence of SEQ ID NO.:25, and three light chain CDRs, CDR-L1 having the amino acid sequence of SEQ ID NO.:26, CDR-L2 having the amino acid sequence of SEQ ID NO.:27, and CDR-L3 having the amino acid sequence of SEQ ID NO.:28. In certain embodiments, the anti-Abeta antibody comprises a heavy chain variable region having the amino acid sequence of SEQ ID NO.:29. In certain embodiments, the anti-Abeta antibody comprises a light chain variable region having the amino acid sequence of SEQ ID NO.:30. In certain embodiments, the anti-Abeta antibody comprises a heavy chain variable region having the amino acid sequence of SEQ ID NO.:29 and a light chain variable region having the amino acid sequence of SEQ ID NO.:30.

[0032] Further disclosed are compositions comprising an anti-IL17 A/F monoclonal antibody purified from CHO cells comprising the anti-IL17 A/F antibody and a residual amount of hamster PLBL2. Disclosed is a composition comprising an anti-IL17 A/F monoclonal antibody purified from Chinese hamster ovary host cells, wherein the composition comprises the anti-IL17 A/F antibody and a residual amount of hamster PLBL2, wherein the amount of hamster PLBL2 is less than 20 ng/mg, or less than 15 ng/mg, or less than 10 ng/mg, or less than 8 ng/mg, or less than 5 ng/mg, or less than 3 ng/mg, or less than 2 ng/mg, or less than 1 ng/mg, or less than 0.5 ng/mg. In certain embodiments, the composition comprises the anti-IL17 A/F antibody and a residual amount of hamster PLBL2, wherein the amount of hamster PLBL2 is less than 20 ng/mg, or less than 15 ng/mg, or less than 10 ng/mg, or less than 8 ng/mg, or less than 5 ng/mg, or less than 3 ng/mg, or less than 2 ng/mg, or less than 1 ng/mg, or less than 0.5 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 20 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 15 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 10 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 8 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than 5 ng/mg. In certain embodiments, the amount of hamster PLBL2 is less than

WHAT IS CLAIMED IS:

1. A composition comprising an anti-IL13 monoclonal antibody purified from Chinese hamster ovary host cells, wherein the composition comprises the anti-IL13 antibody and a residual amount of hamster PLBL2, wherein the amount of hamster PLBL2 is less than 20 ng/mg, or less than 15 ng/mg, or less than 10 ng/mg, or less than 8 ng/mg, or less than 5 ng/mg, or less than 3 ng/mg, or less than 2 ng/mg, or less than 1 ng/mg, or less than 0.5 ng/mg, wherein the anti-IL13 antibody comprises three heavy chain CDRs, CDR-H1 having the amino acid sequence of SEQ ID NO.: 1, CDR-H2 having the amino acid sequence of SEQ ID NO.: 2, and CDR-H3 having the amino acid sequence of SEQ ID NO.: 3, and three light chain CDRs, CDR-L1 having the amino acid sequence of SEQ ID NO.: 4, CDR-L2 having the amino acid sequence of SEQ ID NO.: 5, and CDR-L3 having the amino acid sequence of SEQ ID NO.: 6, and wherein the anti-IL13 antibody is purified by a method comprising hydrophobic interaction chromatography (HIC).

2. The composition of claim 1, wherein the anti-IL13 antibody comprises a heavy chain variable region having the amino acid sequence of SEQ ID NO.: 7.

3. The composition of claim 1, wherein the anti-IL13 antibody comprises a light chain variable region having the amino acid sequence of SEQ ID NO.: 9.

4. The composition of claim 2, wherein the anti-IL13 antibody comprises a heavy chain having the amino acid sequence of SEQ ID NO.: 10.

5. The composition of claim 3, wherein the anti-IL13 antibody comprises a light chain having the amino acid sequence of SEQ ID NO.: 14.

6. The composition of claim 1, wherein the anti-IL13 antibody comprises a heavy chain variable region having the amino acid sequence of SEQ ID NO.: 7 and a light chain variable region having the amino acid sequence of SEQ ID NO.: 9.

7. The composition of claim 6, wherein the anti-IL13 antibody comprises a heavy chain having the amino acid sequence of SEQ ID NO.: 10 and a light chain having the amino acid sequence of SEQ ID NO.: 14.

8. The composition of claim 1, wherein the amount of hamster PLBL2 was quantified using an immunoassay or a mass spectrometry assay.

9. The composition of claim 8, wherein the immunoassay is a total Chinese hamster ovary protein ELISA or a hamster PLBL2 ELISA.

10. The composition of claim 8, wherein the mass spectrometry assay is LC-MS/MS.

11. A purified anti-IL13 monoclonal antibody preparation isolated from Chinese hamster ovary host cells, wherein the preparation is purified by a process comprising a hydrophobic interaction chromatography (HIC) step thereby producing a purified preparation, wherein the purified preparation comprises the anti-IL13 antibody and a residual amount of hamster PLBL2, wherein the amount of hamster PLBL2 is less than 20 ng/mg, or less than 15 ng/mg, or less than 10 ng/mg, or less than 8 ng/mg, or less than 5 ng/mg, or less

than 3 ng/mg, or less than 2 ng/mg, or less than 1 ng/mg, or less than 0.5 ng/mg, and wherein the anti-IL13 antibody comprises three heavy chain CDRs, CDR-H1 having the amino acid sequence of SEQ ID NO.: 1, CDR-H2 having the amino acid sequence of SEQ ID NO.: 2, and CDR-H3 having the amino acid sequence of SEQ ID NO.: 3, and three light chain CDRs, CDR-L1 having the amino acid sequence of SEQ ID NO.: 4, CDR-L2 having the amino acid sequence of SEQ ID NO.: 5, and CDR-L3 having the amino acid sequence of SEQ ID NO.: 6.

12. The anti-IL13 antibody preparation of claim 11, wherein the HIC step comprises highly cross-linked 6% agarose resin with approximately 40 μmol phenyl per mL.

13. The anti-IL13 antibody preparation of claim 12, wherein the HIC step comprises operating a column containing highly cross-linked 6% agarose resin with approximately 40 μmol phenyl per mL in flow-through mode.

14. The anti-IL13 antibody preparation of claim 13, wherein the HIC step comprises an equilibration buffer and a wash buffer, wherein each of the equilibration buffer and the wash buffer comprise 50 mM sodium acetate pH 5.0.

15. The anti-IL13 antibody preparation of claim 14, wherein the flow-through is monitored by absorbance at 280 nanometers and the flow-through is collected between 0.5 OD to 1.5 OD.

16. The anti-IL13 antibody preparation of claim 14, wherein the flow-through is collected for a maximum of 8 column volumes.

17. The anti-IL13 antibody preparation of claim 11, wherein the process further comprises an affinity chromatography step.

18. The anti-IL13 antibody preparation of claim 17, wherein the affinity chromatography is protein A chromatography.

19. The anti-IL13 antibody preparation of claim 11, wherein the process further comprises an ion exchange chromatography step.

20. The anti-IL13 antibody preparation of claim 19, wherein the ion exchange chromatography is anion exchange chromatography.

21. A purified anti-IL13 monoclonal antibody preparation isolated from Chinese hamster ovary cells, wherein the antibody preparation is purified by a process comprising a first Protein A affinity chromatography step, a second anion exchange chromatography step, and a third hydrophobic interaction chromatography (HIC) step thereby producing a purified preparation, wherein the purified preparation comprises the anti-IL13 antibody and a residual amount of hamster PLBL2, wherein the amount of hamster PLBL2 is less than 20 ng/mg, or less than 15 ng/mg, or less than 10 ng/mg, or less than 8 ng/mg, or less than 5 ng/mg, or less than 3 ng/mg, or less than 2 ng/mg, or less than 1 ng/mg, or less than 0.5 ng/mg, and wherein the anti-IL13 antibody comprises three heavy chain CDRs, CDR-H1 having the amino acid sequence of SEQ ID NO.: 1, CDR-H2 having the amino acid sequence of SEQ ID NO.: 2, and CDR-H3

having the amino acid sequence of SEQ ID NO.: 3, and three light chain CDRs, CDR-L1 having the amino acid sequence of SEQ ID NO.: 4, CDR-L2 having the amino acid sequence of SEQ ID NO.: 5, and CDR-L3 having the amino acid sequence of SEQ ID NO.: 6.

22. The anti-IL13 antibody preparation of claim 21, wherein the affinity chromatography step comprises highly cross-linked agarose resin with alkali-stabilized protein A ligand, the anion exchange chromatography step comprises highly cross-linked 6% agarose resin with quaternary amine ligand, and the HIC step comprises highly cross-linked 6% agarose resin with approximately 40 μmol phenyl per mL.

23. The anti-IL13 antibody preparation of claim 22, wherein:

the affinity chromatography step comprises operating a column containing highly cross-linked agarose resin with alkali-stabilized protein A ligand in bind-elute mode;

the anion exchange chromatography step comprises operating a column containing highly cross-linked 6% agarose resin with quaternary amine ligand in bind-elute mode; and

the HIC step comprises operating a column containing highly cross-linked 6% agarose resin with approximately 40 μmol phenyl per mL in flow-through mode.

24. The anti-IL13 antibody preparation of claim 23, wherein the anti-IL13 antibody comprises a heavy chain variable region having the amino acid sequence of SEQ ID NO.: 7.

25. The anti-IL13 antibody preparation of claim 23, wherein the anti-IL13 antibody comprises a light chain variable region having the amino acid sequence of SEQ ID NO.: 9.

26. The anti-IL13 antibody preparation of claim 24, wherein the anti-IL13 antibody comprises a heavy chain having the amino acid sequence of SEQ ID NO.: 10.

27. The anti-IL13 antibody preparation of claim 25, wherein the anti-IL13 antibody comprises a light chain having the amino acid sequence of SEQ ID NO.: 14.

28. The anti-IL13 antibody preparation of claim 23, wherein the anti-IL13 antibody comprises a heavy chain variable region having the amino acid sequence of SEQ ID NO.: 7 and a light chain variable region having the amino acid sequence of SEQ ID NO.: 9.

29. The anti-IL13 antibody preparation of claim 28, wherein the anti-IL13 antibody comprises a heavy chain having the amino acid sequence of SEQ ID NO.: 10 and a light chain having the amino acid sequence of SEQ ID NO.: 14.

30. The anti-IL13 antibody preparation of claim 11 or claim 21, wherein the amount of hamster PLBL2 was quantified using an immunoassay or a mass spectrometry assay.

31. The anti-IL13 antibody preparation of claim 30, wherein the immunoassay is a total Chinese hamster ovary protein ELISA or a hamster PLBL2 ELISA.

32. The anti-IL13 antibody preparation of claim 30, wherein the mass spectrometry assay is LC-MS/MS.

33. A method of purifying a recombinant polypeptide produced in Chinese hamster ovary host cells comprising a hydrophobic interaction chromatography (HIC) step, wherein the method provides a purified

preparation comprising the recombinant polypeptide and a residual amount of hamster PLBL2 of less than 20 ng/mg, less than 15 ng/mg, less than 10 ng/mg, less than 8 ng/mg, less than 5 ng/mg, less than 3 ng/mg, less than 2 ng/mg, less than 1 ng/mg, or less than 0.5 ng/mg, and

wherein the recombinant polypeptide is an anti-IL13 antibody that comprises three heavy chain CDRs, CDR-H1 having the amino acid sequence of SEQ ID NO.: 1, CDR-H2 having the amino acid sequence of SEQ ID NO.: 2, and CDR-H3 having the amino acid sequence of SEQ ID NO.: 3, and three light chain CDRs, CDR-L1 having the amino acid sequence of SEQ ID NO.: 4, CDR-L2 having the amino acid sequence of SEQ ID NO.: 5, and CDR-L3 having the amino acid sequence of SEQ ID NO.: 6.

34. The method of claim 33, wherein the HIC step comprises highly cross-linked 6% agarose resin with approximately 40 μmol phenyl per mL.

35. The method of claim 34, wherein the HIC step comprises operating a column containing highly cross-linked 6% agarose resin with approximately 40 μmol phenyl per mL in flow-through mode.

36. The method of claim 33, wherein the antibody is IgG1, or IgG2, or IgG3, or IgG4.

37. The method of claim 36, wherein the antibody is IgG4.

38. The method of claim 33, wherein the antibody is lebrikizumab.

39. The method of any one of claims 33 or 38, wherein the HIC step comprises operating a resin-containing column in flow-through mode and an equilibration buffer and a wash buffer, wherein each of the equilibration buffer and the wash buffer comprise 50 mM sodium acetate pH 5.0.

40. The method of claim 39, wherein the flow-through is monitored by absorbance at 280 nanometers and the flow-through is collected between 0.5 OD to 1.5 OD.

41. The method of claim 39, wherein the flow-through is collected for a maximum of 8 column volumes.

42. The method of claim 39, further comprising an affinity chromatography step.

43. The method of claim 42, wherein the affinity chromatography is protein A chromatography.

44. The method of claim 39, further comprising an ion exchange chromatography step.

45. The method of claim 44, wherein the ion exchange chromatography is anion exchange chromatography.

46. The method of claim 39 comprising a first Protein A affinity chromatography step and a second anion exchange chromatography step prior to the hydrophobic interaction chromatography (HIC) step.

47. The method of claim 46, wherein the affinity chromatography step comprises highly cross-linked agarose resin with alkali-stabilized protein A ligand, the anion exchange chromatography step comprises highly cross-linked 6% agarose resin with quaternary amine ligand, and the HIC step comprises highly cross-linked 6% agarose resin with approximately 40 μmol phenyl per mL.

48. The method of claim 47, wherein:

the affinity chromatography step comprises operating a column containing highly cross-linked agarose resin with alkali-stabilized protein A ligand in bind-elute mode;

the anion exchange chromatography step comprises operating a column containing highly cross-linked 6% agarose resin with quaternary amine ligand in bind-elute mode, and

the HIC step comprises operating a column containing highly cross-linked 6% agarose resin with approximately 40 μmol phenyl per mL in flow-through mode.

49. The method of claim 33, wherein the amount of hamster PLBL2 is quantified using an immunoassay or a mass spectrometry assay.

50. The method of claim 49, wherein the immunoassay is a total Chinese hamster ovary protein ELISA or a hamster PLBL2 ELISA.

51. The method of claim 49, wherein the mass spectrometry assay is LC-MS/MS.

52. Use of the composition of any one of claims 1-7 in the manufacture of a treatment composition for treating an IL-13-mediated disorder in a patient.

53. The use of claim 52, wherein administration of the treatment composition is less immunogenic for hamster PLBL2 compared to administration of a reference composition, wherein the reference composition comprises an anti-IL13 monoclonal antibody purified from Chinese hamster ovary host cells and a residual amount of hamster PLBL2 of greater than 30 ng/mg, or greater than 50 ng/mg, or greater than 100 ng/mg, or greater than 200 ng/mg, or greater than 300 ng/mg.

54. The use claim 52, wherein the treatment composition is to be administered subcutaneously once every four weeks, or once every eight weeks, or once every 12 weeks.

55. The use of claim 54, wherein the patient is to be treated once every four weeks for at least one month, or at least three months, or at least six months, or at least nine months, or at least twelve months, or at least 18 months, or at least two years, or more than two years.

56. The use of claim 52, wherein the IL-13-mediated disorder is selected from asthma, idiopathic pulmonary fibrosis and atopic dermatitis.

57. The use of claim 52, wherein the IL-13-mediated disorder is selected from allergic asthma, non-allergic asthma, allergic rhinitis, allergic conjunctivitis, eczema, urticaria, food allergies, chronic obstructive pulmonary disease, ulcerative colitis, RSV infection, uveitis, scleroderma, and osteoporosis.