SUMMARY

[0021] The ~~invention~~ 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 ~~invention~~disclosure, including therapeutic antibodies such as an anti-IL13 antibody, may have reduced immunogenicity when administered to human subjects.

[0022] Accordingly, ~~in one aspect,~~disclosed are compositions comprising an anti-IL13 monoclonal antibody purified from CHO cells comprising the anti-IL13 antibody and a residual amount of hamster ~~PLBL2 are provided~~. 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. 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] ~~In another aspect,~~Also disclosed are anti-IL13 monoclonal antibody preparations isolated and purified from CHO cells by a process comprising a hydrophobic interaction chromatography (HIC) step ~~are provided~~. 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. 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] ~~In yet another aspect,~~Further disclosed are purified anti-IL13 monoclonal antibody preparations isolated from CHO cells ~~are provided~~. 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. 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, methods of purifying a recombinant polypeptide produced in ~~CHO~~ Chinese hamster ovary host cells, wherein the method provides a purified preparation comprising the recombinant polypeptide and residual amount of hamster PLBL2 are provided. 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

beginning at 0.5 OD and collection continues for 10 column volumes. In certain embodiments, the methods further comprise an affinity chromatography step. In certain embodiments, the affinity chromatography is protein A chromatography. In certain embodiments, the methods further comprise a mixed mode chromatography step. In certain embodiments, the methods comprise a first Protein A affinity chromatography step, a second mixed mode chromatography step, and a third hydrophobic interaction chromatography (HIC) step. In certain embodiments, the affinity chromatography step comprises MABSELECT SURE™ resin, the mixed mode chromatography step comprises CAPTO™ Adhere, 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 mixed mode chromatography step comprises operating a CAPTO™ Adhere resin-containing column in flow-through 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 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.

[0028] In yet a further ~~aspect~~ embodiment of the above purification methods, the purified antibody is IgG1. In some embodiments, the antibody is anti-IL17 A/F. In some 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.:22. In certain embodiments, the HIC chromatography 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 beginning at 0.5 OD and for 10 column volumes. In certain embodiments, the methods further

comprise an affinity chromatography step. In certain embodiments, the affinity chromatography is protein A chromatography. In certain embodiments, the methods further comprise a cation exchange chromatography step. In some embodiments, the methods comprise a first Protein A affinity chromatography step and a second cation exchange chromatography step prior to the hydrophobic interaction chromatography (HIC) step. In some embodiments, the affinity chromatography step comprises MABSELECT SURE™ resin, the cation exchange chromatography step comprises POROS 50 HS resin, and the HIC step comprises PHENYL SEPHAROSE™ 6 Fast Flow (high sub) resin. In some embodiments, the affinity chromatography step comprises operating a MABSELECT SURE™ resin-containing column in bind-elute mode; the cation exchange chromatography step comprises operating a POROS 50 HS 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.

[0029] ~~In still yet another aspect,~~Further disclosed are anti-Abeta monoclonal antibody preparations purified from CHO cells by a process comprising a hydrophobic interaction chromatography (HIC) step ~~are provided~~. In certain embodiments, the purified preparation comprises the anti-Abeta antibody and a residual amount of hamster PLBL2. 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 150 mM sodium acetate pH 5.0. 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 150 mM sodium acetate pH 4.0. 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 150 mM sodium acetate, 240 mM sodium sulfate pH 4.0. 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 150 mM sodium acetate, 240 mM sodium sulfate pH 5.0. In certain embodiments, the load density is 300 g/L. In certain embodiments, the load density is 100 g/L. 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 mixed mode chromatography step. 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. 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.

[0030] ~~In one aspect,~~Disclosed are anti-IL17 A/F monoclonal antibody preparations isolated and purified from CHO cells by a process comprising a hydrophobic interaction chromatography (HIC) step ~~are provided~~. In certain embodiments, the purified preparation comprises the anti- IL17 A/F antibody and a residual amount of hamster PLBL2. 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 5.5. 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] ~~In still another aspect,~~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 ~~are provided~~. In one aspect, there is provided 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] ~~In yet still another aspect,~~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 ~~are provided~~. In one aspect, there is provided 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

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-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.:22.

[0033] ~~In one aspect,~~Disclosed are methods of treating an IL-13-mediated disorder comprising administering a treatment composition comprising an anti-IL13 monoclonal antibody purified from CHO cells and a residual amount of hamster PLBL2 ~~are provided~~. 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 treatment composition is administered subcutaneously once every four weeks. In certain embodiments, the treatment composition is administered subcutaneously once every eight weeks. In certain embodiments, the treatment composition is administered subcutaneously once every 12 weeks. In certain embodiments, the patient is treated once every four weeks for at least one month. In certain embodiments, the patient is treated once every four weeks for at least three months. In certain embodiments, the patient is treated once every four weeks for at least six months. In certain embodiments, the patient is treated once every four weeks for at least nine months. In certain embodiments, the patient is treated once every four weeks for at least 12 months. In certain embodiments, the patient is treated once every four weeks for at least 18 months. In certain embodiments, the patient is treated once every four weeks for at least two years. In certain embodiments, the patient is treated once every four weeks for more than two years. In certain embodiments, the IL-13-mediated disorder is asthma. In certain embodiments, the IL-13-mediated disorder is idiopathic pulmonary fibrosis. In certain embodiments, the IL-13-mediated disorder is atopic dermatitis. In certain embodiments, 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.

[0033a] In one aspect, there is provided use of any one of the compositions as described herein in the manufacture of a treatment composition for treating an IL-13-mediated disorder in a patient.

[0034] In another ~~aspect~~one embodiment, administration of a treatment composition to a patient according to any of the methods described above is less immunogenic for hamster PLBL2 compared to administration of a reference composition, wherein the reference composition comprises an anti-

the affinity chromatography step comprises operating a MABSELECT SURE™ resin-containing column in bind-elute mode;

the cation exchange chromatography step comprises operating a POROS® 50HS 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.

89. 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.

90. The composition of claim 89, wherein 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.

91. The composition of claim 90, wherein the anti-IL17 A/F antibody comprises a heavy chain variable region having the amino acid sequence of SEQ ID NO.:21.

92. The composition of claim 90, wherein the anti-IL17 A/F antibody comprises a light chain variable region having the amino acid sequence of SEQ ID NO.:22.

93. The composition of claim 90, wherein 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.:22.

94. ~~A method of treating an IL-13-mediated disorder in a patient comprising administering a treatment composition to the patient, wherein the treatment composition comprises~~Use of the composition of any one of claims 1-8 in the manufacture of a treatment composition for treating an IL-13-mediated disorder in a patient.

95. The use~~method~~ of claim 94, 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.

96. The use~~method~~ claim 94, wherein the treatment composition is to be administered subcutaneously once every four weeks, or once every eight weeks, or once every 12 weeks.

97. The use~~method~~ of claim 96, 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.

98. The use~~method~~ of claim 94, wherein the IL-13-mediated disorder is selected from asthma, idiopathic pulmonary fibrosis and atopic dermatitis.

99. The use~~method~~ of claim 94, 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.