

BRIEF SUMMARY

[0005] In view of the foregoing, in one example provided herein is A dry powder formulation comprising a plurality of microparticles, the microparticles comprising: leucine, about 1% to about 10% trileucine by weight and an antigen binding fragment of an anti-thymic stromal lymphopoietin (TSLP) antibody.

[0005a] In one aspect, the present disclosure provides an antigen binding fragment of an anti-thymic stromal lymphopoietin (TSLP) antibody comprising a heavy chain having the sequence set forth in SEQ ID NO: 28 and a light chain having the sequence set forth in SEQ ID NO: 29, wherein the fragment is a Fab.

[0005b] In another aspect, the present disclosure provides a dry powder formulation comprising a plurality of microparticles, the microparticles comprising:

- a. 8% to 11% leucine by weight;

- b. about 2% to 4% trileucine by weight; and
- c. a Fab of an anti-thymic stromal lymphopoietin (TSLP) antibody as described hereinp.

[0005c] In yet another aspect, the present disclosure provides a use of the dry powder formulation as described herein in the manufacture of a medicament for treating asthma, wherein the medicament is to be administered by inhalation.

[0005d] In a further aspect, the present disclosure provides the dry powder formulation as described herein for use in therapy, wherein the formulation is to be administered by inhalation.

[0006] In some examples, the antigen binding fragment of the anti-thymic stromal lymphopoietin (TSLP) antibody comprises a heavy chain variable domain comprising: a heavy chain CDR1 sequence comprising the amino acid sequence set forth in SEQ ID NO:1, a heavy chain CDR2 sequence comprising the amino acid sequence set forth in SEQ ID NO:2, and a

CLAIMS

What is claimed is:

1. An antigen binding fragment of an anti-thymic stromal lymphopoietin (TSLP) antibody comprising a heavy chain having the sequence set forth in SEQ ID NO: 28 and a light chain having the sequence set forth in SEQ ID NO: 29, wherein the fragment is a Fab.
2. A dry powder formulation comprising a plurality of microparticles, the microparticles comprising:
 - a. 8% to 11% leucine by weight;
 - b. 2% to 4% trileucine by weight; and
 - c. a Fab of an anti-thymic stromal lymphopoietin (TSLP) antibody according to claim 1.
3. The dry powder formulation of claim 2, wherein the dry powder formulation has a compressed bulk density of about 0.4-1.0 g/cm³.
4. The dry powder formulation of claim 2 or claim 3, further comprising a glass stabilization agent.
5. The dry powder formulation of claim 4, wherein the glass stabilization agent is an amorphous saccharide and/or a buffer.
6. The dry powder formulation of claim 5, wherein the dry powder formulation comprises an amorphous saccharide, and wherein the amorphous saccharide is selected from the group consisting of trehalose, sucrose, raffinose, inulin, dextran, mannitol, and cyclodextrin.
7. The dry powder formulation of claim 5, wherein the dry powder formulation comprises a buffer, and wherein the buffer is selected from the group consisting of a citrate buffer, a phosphate buffer, a histidine buffer, a glycine buffer, an acetate buffer and a tartrate buffer.
8. The dry powder formulation of any one of claims 5-7, wherein the amorphous saccharide is trehalose.

9. The dry powder formulation of any one of claims 2-8, comprising 10.5% leucine by weight and 2% trileucine by weight.
10. The dry powder formulation of any one of claims 2-9, further comprising a surfactant.
11. The dry powder formulation of claim 10, wherein the surfactant is optionally selected from polysorbate-20 (PS-20), polysorbate-40 (PS-40), polysorbate-60 (PS-60), polysorbate-80 (PS-80) and poloxamer-188.
12. The dry powder formulation of claim 11, wherein the surfactant is PS-80 present at a concentration in the range of from 0.27% by weight to 2.7% by weight.
13. The dry powder formulation of claim 12, wherein the PS-80 is present at a concentration of 1.1% by weight.
14. The dry powder formulation of any one of claims 2-13, wherein said formulation comprises a plurality of microparticles, the microparticles comprising:
 - a. 10.5% leucine by weight;
 - b. 2% trileucine by weight;
 - c. a Fab consisting of a heavy chain having the sequence set forth in SEQ ID NO:28 and a light chain having the sequence set forth in SEQ ID NO:29;
 - d. a buffer; and
 - e. trehalose.
15. The dry powder formulation according to any one of claims 2-14 for use in therapy, wherein the formulation is to be administered by inhalation.
16. Use of the dry powder formulation according to any one of claims 2-14 in the manufacture of a medicament for treating asthma, wherein the medicament is to be administered by inhalation.
17. The use according to claim 16, wherein the asthma is mild asthma, moderate asthma, severe asthma, eosinophilic asthma or non-eosinophilic asthma, or low eosinophilic asthma.