CLAIMS

1. A method of treating inflammatory bowel disease (IBD) comprising: (a) providing an intestinal biopsy sample obtained from inflamed tissue of a patient; (b) mechanically treating the sample to obtain a cell suspension; (c) identifying cell surface markers of activated leukocytes selected from T lymphocytes, neutrophil granulocytes, and eosinophil granulocytes in the suspension; (d) raising antibodies against said activated leukocytes, (e) immobilizing said antibodies against said activated leukocytes on a common support or on separate supports; (f) providing a column loaded with said support(s); (g) diverting a portion of the patient's peripheral blood to make it pass through the column before re-infusing it to the patient to make said activated leukocytes couple with said antibodies on the support(s), thereby eliminating them from the blood stream.

2. The method of claim 1, wherein said supports carrying antibodies against said activated leukocytes are provided in separate columns coupled in line or in parallel.

3. The method of claim 2, comprising a single column loaded with support on which antibodies against said activated leukocytes are immobilized.

4. The method of any of claims 1 to 3, having an empty volume of from 20 to 100 ml.

5. The method of any of claims 1 to 3, having an empty volume of from 30 to 50 ml.

6. The method of any of claims 1 to 5, wherein from one third to two thirds of the patient's blood volume is made to pass the column in a single treatment.

7. The method of any of claims 1 to 5, wherein about half or somewhat less than half of the patient's blood volume is made to pass the column in a single treatment.

8. The method of any of claims 1 to 7, wherein the treatment is repeated from three to five times and more within from one to three weeks.

9. The method of any of claims 1 to 8, wherein said intestinal biopsy sample is one of several such samples obtained from the patient and wherein said samples are combined prior to mechanical treatment to provide a cell suspension.

10. The method of any of claims 1 to 9, wherein the presence of activated T lymphocytes is identified by exposing them to one or more of specific antibodies against CD3, CD15, CD19.

11. The method of any of claims 1 to 9, wherein the presence of activated T lymphocytes is identified by exposing them to one ore more of specific antibodies against CD69, CD62 L, CD25, CD27, HLA-DR, CD44.

12. The method of any of claims 1 to 11, wherein the antibody against activated leukocytes immobilized on a support is selected from CD 69 and integrin α4β7 antibody.

13. The method of any of claims 1 to 11, wherein the antibody against activated neutrophil granulocytes immobilized on a support is CD66b.

14. The method of any of claims 1 to 11, wherein the antibody against activated eosinophil granulocytes immobilized on a support is CD9.

15. A leukapheresis column loaded with a support on which antibodies against cell surface markers of activated leukocytes selected from T lymphocytes, neutrophil granulocytes, and eosinophil granulocytes are immobilized, said activated leukocytes being activated leukocytes in a biopsy sample obtained from inflamed intestinal tissue of a patient suffering from inflammatory bowel disease (IBD) that has been mechanically treated to obtain a cell suspension.

16. The column of claim 15 having a void volume of 20 ccm to 100 ccm.

17. The column of claim 15 having a void volume of 30 ccm to 50 ccm.

18. The column of any of claims 15 to 17, wherein said antibodies against activated T lymphocytes are selected from antibody against CD69 and integrin α4β7 antibody.

19. The column of any of claims 15 to 17, wherein said antibodies against activated neutrophil granulocytes are selected from antibodies against CD66b.

20. The column of any of claims 15 to 17, wherein said antibodies against activated eosinophil granulocytes are selected from antibodies against CD9.

21. The combination of one or more leukapheresis columns of any of claims 15 to 19 coupled in parallel and/or in line.

22. An apparatus for leukapheresis comprising the column of any of claims 15 to 21, a blood pump coupled in line with the column, and means for coupling the pump and the column to the venous system of a patient.

23. The apparatus of claim 22, wherein the means of coupling the pump and the column to the venous system of a patient comprise two cannulae.

24. The apparatus of claim 22 or 23, wherein the pump is a peristaltic pump working on a flexible tube connected with the column.

25. A support for T-leukapheresis comprising immobilized thereon one or more antibodies raised against activated leukocytes selected from T lymphocytes, neutrophil granulocytes, and eosinophil granulocytes isolated from inflamed intestinal tissue of a patient suffering from inflammatory bowel disease (IBD).

26. The support of claim 25, wherein the activated leukocytes have been isolated from one or several biopsy samples taken from inflamed intestinal tissue.

27. Use of the support of claim 25 or 26 for treating Crohn's disease.

28. Use of the support of claim 25 or 26 for treating ulcerative colitis.

29. Use of the support of claim 25 or 26 for treating collagenous colitis.

30. Use of the support of claim 25 or 26 for treating lymphocytic colitis.

CLAIMS

1. A leukapheresis column loaded with a support on which is immobilized antibodies against cell surface markers of activated leukocytes selected from T lymphocytes, neutrophil granulocytes and eosinophil granulocytes are immobilized, said activated leukocytes being activated leukocytes in a biopsy sample obtained from inflamed intestinal tissue of a patient suffering from inflammatory bowel disease (IBD) that has been mechanically treated to obtain a cell suspension, wherein:

said antibodies against activated T lymphocytes are selected from antibody against CD69 and integrin $\alpha 4\beta 7$ antibody; or
said antibodies against activated neutrophil granulocytes are selected from antibodies against CD66b; or
said antibodies against activated eosinophil granulocytes are selected from antibodies against CD9.

2. The column of claim 1 having a void volume of 20 to 100 ml.

3. The column of claim 1 having a void volume of 30 to 50 ml.

4. The combination of one or more leukapheresis columns of any one of claims 1 to 3, coupled in parallel and/or in line.

5. An apparatus for leukapheresis comprising the column of any one of claims 1 to 4, a blood pump coupled in line with the column, and means for coupling the pump and the column to the venous system of a patient.

6. The apparatus of claim 5, wherein the means of coupling the pump and the column to the venous system of a patient comprise two cannulae.

7. The apparatus of claim 5 or 6, wherein the pump is a peristaltic pump working on a flexible tube connected with the column.