We claim:

1. A therapeutic composition comprising an isolated human monoclonal IgG antibody that binds specifically to the Kunitz 1 and Kuntiz 2 domain of tissue factor pathway inhibitor (TFPI).

2. The composition of claim 1, wherein the antibody heavy chain has a CDR-1 region comprised of an amino acid sequence having at least 80% homology with SEQ ID NO. 305, a CDR-2 region comprised of an amino acid sequence having at least 80% homology with SEQ ID NO. 348, and a CDR-3 region comprised of an amino acid sequence having at least 80% homology with SEQ ID NO. 391.

3. The composition of claim 1 further comprising Factor VIII or Factor IX in the substantial absence of Factor VII.

4. The composition of claim 1, wherein the antibody has a binding affinity to human TFPI by Biacore assay of about 1.25 to 1140 nM.

5. The composition of claim 1 wherein the antibody is formulated in combination a dose of 10 to 100 mg in a pharmaceutically acceptable carrier for injection.

6. The composition of claim 1, wherein the CDR-2 region has at least 85% homology to SEQ IDNO. 348.

7. The composition of claim 1, wherein the CDR-3 region has at least 85% homology to SEQ ID NO. 391.

8. The composition of claim 1, wherein the antibody is a fragment of a single chain.

9. The composition of claim 1, wherein the antibody heavy chain has a CDR-1 region comprised of an amino acid sequence as shown in SEQ ID NO. 305, a CDR-2 region comprised of an amino acid sequence as shown in SEQ ID NO. 348, and a CDR-3 region comprised of an amino acid sequence as shown in SEQ ID NO. 391.

10. The composition of claim 1, wherein the antibody heavy chain has a CDR-1 region comprised of an amino acid sequence as shown in SEQ ID NO. 305, a CDR-2 region comprised of an amino acid sequence as shown in SEQ ID NO. 348 and a CDR-3 region comprised of an amino acid sequence as shown in SEQ ID NO. 39 1, and wherein the antibody light chain has CDR-1 region comprised of an amino acid sequence as shown in SEQ ID NO. 176, a CDR-2 region comprised of an amino acid sequence as shown in SEQ ID NO. 219 and a CDR-3 region comprised of an amino acid sequence as shown in SEQ ID NO. 262.

11. The composition of claim 1, wherein the antibody heavy chain is comprised of an amino acid sequence as shown in SEQ ID NO. 16.

12. The composition of claim 8, wherein the light chain is comprised of an amino acid sequence as shown in SEQ ID NO. 14.

13. The composition of claim 1, wherein the antibody has a binding affinity to human TFPI by Biacore assay of about 1.25 nM.

14. The composition of claim 3, wherein the composition formulated in a dose of 10 to 100 mg of the human antibody in a pharmaceutically acceptable carrier for injection.

15. A therapeutic composition comprising in combination:

a) an isolated human monoclonal IgG antibody that binds specifically to the Kunitz 1 and Kunitz 2 domain of tissue factor pathway inhibitor (TFPI), and wherein the antibody heavy chain has a CDR-1 region comprised of an amino acid sequence having at least 80% homology with SEQ ID NO. 341, a CDR-2 region comprised of an amino acid sequence having at least 80% homology with SEQ ID NO. 384, and a CDR-3 region comprised of an amino acid sequence having at least 80% homology with SEQ ID NO. 427.

16. The composition of claim 15, further comprising Factor VIII or Factor IX in the substantial absence of Factor VII.

17. The composition of claim 16, wherein the antibody has a binding affinity to human TFPI by Biacore assay of about 15.7 nM.

18. The composition of claim 16, wherein the composition is formulated in a dose of 10 to 100 mg of the human antibody in a pharmaceutically acceptable carrier for injection.

19. The composition of claim 15, whereas the CDR-1 region has at least 85% homology to SEQ ID NO. 341.

20. The composition of claim 15, wherein the CDR-2 region has at least 85% homology to SEQ ID NO. 384.

21. The composition of claim 15, wherein the CDR-3 region has at least 85% homology to SEQ ID NO. 427.

22. The composition of claim 15, wherein the antibody heavy chain has a CDR-1 region comprised of an amino acid sequence as shown in SEQ ID NO. 341, a CDR-2 region comprised of an amino acid sequence as shown in SEQ ID NO. 384 and a CDR-3 region comprised of an amino acid sequence as shown in SEQ ID NO. 427.

23. The composition of claim 15, wherein the antibody heavy chain is comprised of an amino acid sequence as shown in SEQ ID NO. 160.

24. The composition of claim 15, wherein the antibody heavy chain has a CDR-1 region comprised of an amino acid sequence as shown in SEQ ID NO. 341, a CDR-2 region comprised of an amino acid sequence as shown in SEQ ID NO. 384 and a CDR-3 region comprised of an amino acid sequence as shown in SEQ ID NO. 427, and wherein the antibody light chain has CDR-1 region comprised of an amino acid sequence as shown in SEQ ID NO. 212, a CDR-2 region comprised of an amino acid sequence as shown in SEQ ID NO. 255 and a CDR-3 region comprised of an amino acid sequence as shown in SEQ ID NO. 298

25. The composition of claim 15, wherein the antibody heavy chain is comprised of an amino acid sequence as shown in SEQ ID NO. 160, and the antibody light chain is comprised of an amino acid sequence as shown in SEQ ID NO. 158.

26. A therapeutic composition comprising:

an isolated human monoclonal IgG antibody that binds specifically to the Kunitz 1 and the Kunitz 2 domain of tissue factor pathway inhibitor (TFPI), wherein the antibody heavy chain has a CDR-1 region comprised of an amino acid sequence having at least 80% homology to a sequence selected

from the group consisting of SEQ ID NOS. 302-344, a CDR-2 region comprised of an amino acid sequence selected from the group consisting of SEQ IDNOS. 345- 387, and CDR-3 region selected from the group consisting of SEQ ID NOS. 388-430.

27. The composition of claim 26, wherein the antibody has a binding affinity to human TFPI by Biacore assay of about 1.25 to 1140 nM.

28. The composition of claim 26, wherein the antibody is formulated in a dose of 10 to 100 mg in a pharmaceutically acceptable carrier for injection.

29. The composition of claim 26, wherein the antibody light chain has CDR-1 region comprised of amino acid having at least about 80% homology to a sequence selected from the group consisting of SEQ ID NOS. 173-215, a CDR-2 region comprised of an amino acid sequence selected from the group consisting of SEQ ID NOS. 216-258, and a CDR-3 region selected from the group consisting of SEQ ID NOS. 259-301.

30. The use of a composition comprising an isolated human monoclonal IgG antibody of any of claims 1-29, for the manufacture of a medicament for treating a coagulation deficiency.

31. The use of claim 30, wherein the coagulation deficiency is hemophilia A or hemophilia B.

32. The use of claim 31 further comprising the Factor VIII or Factor IX in the substantial absence of Factor VII.

CLAIMS

1. An isolated monoclonal antibody that binds to human tissue factor pathway inhibitor, wherein the antibody comprises:

(a) a human heavy chain variable region comprising an amino acid sequence having at least 96% identity to the amino acid sequence set forth in SEQ ID NO: 16; and

(b) a human light chain variable region comprising an amino acid sequence having at least 97% identity to the amino acid sequence set forth in SEQ ID NO: 14.

2. The antibody of claim 1, comprising a human heavy chain variable region comprising an amino acid sequence set forth in SEQ ID NO:16 and a human light chain variable region comprising an amino acid sequence set forth in SEQ ID NO:14.

3. The antibody of claim 1, wherein the antibody is selected from the group consisting of an IgG1, an IgG2, an IgG3, an IgG4, an IgM, an IgA1, an IgA2, a secretory IgA, an IgD, and an IgE antibody.

4. The antibody of claim 1, wherein blood clotting time in the presence of the antibody is shortened as measured by diluted prothrombin time.

5. The antibody of claim 1 that is an antibody fragment or a single chain antibody.

6. A pharmaceutical composition comprising a therapeutically effective amount of the monoclonal antibody of claims 1 and a pharmaceutically acceptable carrier.

7. A pharmaceutical composition comprising a therapeutically effective amount of the combination of (a) a monoclonal antibody of claims 1 and (b) factor VIII or factor IX; wherein the composition does not contain factor VII.

8. Use of an antibody of claim 1 for the preparation of a medicament for treating genetic and acquired deficiencies or defects in coagulation.

9. An isolated nucleic acid molecule encoding the antibody of claim 1.

10. A method for producing the monoclonal antibody of claim 1 comprising:

(i) transfecting a nucleotide sequence encoding the monoclonal antibody into a host cell, and

(ii) culturing the host cell so to express the monoclonal antibody.