CLAIMS

1. A method for the preparation of thrombin from a source of prothrombin, the method comprising:

a. providing one or more $BaSO_4$ reagents and a source of prothrombin;

b. contacting the one or more $BaSO_4$ reagents and the source of prothrombin under conditions allowing adsorption of prothrombin with the one or more $BaSO_4$ reagents, thereby obtaining $BaSO_4$-adsorbed prothrombin;

c. testing the pro-coagulant activity of the $BaSO_4$-adsorbed prothrombin, and testing same pro-coagulant activity of normal mammalian plasma source;

d. evaluating the one or more $BaSO_4$ reagents as suitable $BaSO_4$ adsorbing reagent and selecting a suitable reagent based on said evaluation; wherein the evaluation is carried out by comparing the pro-coagulant activity of the $BaSO_4$-adsorbed prothrombin to the same pro-coagulant activity of a normal mammalian plasma source, the selection of suitable $BaSO_4$ reagent for use in preparing thrombin is based on the pro-coagulant activity of the $BaSO_4$ -adsorbed prothrombin being not greater than the pro-coagulant activity of normal mammalian plasma source;

e. contacting the suitable $BaSO_4$ with a source of prothrombin under conditions allowing prothrombin adsorption;

f. eluting a prothrombin-containing fraction from the $BaSO_4$-adsorbed prothrombin by contacting the adsorbed prothrombin obtained in step e. with an elution buffer; and

g. subjecting the eluted fraction to conditions which allow conversion of prothrombin into thrombin, thereby obtaining thrombin.

2. A method for evaluating the suitability of one or more $BaSO_4$ reagent for use as a prothrombin adsorbent in preparing thrombin from a source of prothrombin, the method comprising:

a. providing one or more $BaSO_4$ reagent and a source of prothrombin;

b. contacting the one or more $BaSO_4$ reagents and the source of prothrombin under conditions allowing adsorption of prothrombin to the one or more $BaSO_4$ reagents thereby obtaining $BaSO_4$-adsorbed prothrombin;

c. testing the pro-coagulant activity of the $BaSO_4$-adsorbed prothrombin and testing same pro-coagulant activity of normal mammalian plasma source; and

d. evaluating the one or more $BaSO_4$ reagents as suitable $BaSO_4$ adsorbing reagents and selecting those suitable reagents based on said evaluation;

wherein the evaluation is carried out by comparing the pro-coagulant activity of the $BaSO_4$-adsorbed prothrombin to the same pro-coagulant activity of a normal mammalian plasma source, the selection of suitable one or more $BaSO_4$ reagent for use as a prothrombin adsorbant in method of preparing thrombin is based on the pro-coagulant activity of the $BaSO_4$-adsorbed prothrombin being not greater than the pro-coagulant activity of normal mammalian plasma source.

3. The method of claim 2, wherein testing of the pro-coagulant activity comprises performing a pro-coagulant assay.

4. The method of claim 3, wherein the pro-coagulant assay comprises a functional assay.

5. The method of claim 4, wherein the functional assay is a clotting assay.

6. The method of claim 5, wherein the clotting assay is selected from the group consisting of an Non-Activated Partial Thromboplastin Time (NAPTT) assay, an Activated Partial Thromboplastin Time (APTT) assay and a protease chromogenic assay.

7. The method of claim 2, wherein the source of prothrombin is selected from the group consisting of blood plasma and a plasma fraction.

8. The method of claim 7, wherein the blood plasma or plasma fraction comprises oxalated plasma.

9. The method of claim 2, wherein the source of prothrombin comprises plasma harvested from a mammal.

10. The method of claim 9, wherein the mammal is selected from the group consisting of a human, an equine, a bovine and a porcine.

11. The method of claim 2, wherein the conditions allowing adsorption of prothrombin from the source of prothrombin by the $BaSO_4$ one or more reagents comprise pH 7.4-8.6.

12. The method of claim 2, wherein contacting the sample of the one or more $BaSO_4$ reagent and the source of prothrombin comprises adding about 1% (w/v) $BaSO_4$ reagent to the harvested plasma that is the source of prothrombin.

13. The method of claim 2, wherein testing of the pro-coagulant activity of the $BaSO_4$-adsorbed prothrombin is performed while the prothrombin is adsorbed to the one or more $BaSO_4$ reagents.

14. The method of claim 2, further comprising:

subsequently to ‘b’ and prior to ‘c‘, eluting at least some of the $BaSO_4$-adsorbed prothrombin from the $BaSO_4$ reagent; and

wherein testing of the pro-coagulant activity of the $BaSO_4$-adsorbed prothrombin is of at least some of the eluted $BaSO_4$-adsorbed prothrombin.

15. The method of claim 14, wherein eluting a prothrombin-containing fraction from the $BaSO_4$-adsorbed prothrombin comprises use of a calcium chelating salt at a pH of about 6.3 and 7.4.

16. The method of claim 15, wherein the chelating salt comprises sodium citrate.

17. The method of claim 16, wherein the concentration of sodium citrate is from about 3% (w/v) to about 4.4 % (w/v).

18. The method of claim 2, wherein the source of prothrombin comprises porcine plasma.