CLAIMS:

1. A method for preparing a polypeptide product expressed from a polynucleotide construct comprising the nucleic acid sequence of SEQ ID NO: 7 or a nucleic acid sequence encoding an amino acid sequence having at least 90% sequence identity to the amino acid sequence encoded by SEQ ID NO: 7, comprising:

adding a detergent to a sample that contains a polypeptide product expressed from the polynucleotide construct;

loading the sample to a soybean trypsin inhibitor (STI)-based affinity chromatograph and eluting the polypeptide with a first elution buffer to generate a first eluted sample, wherein the loaded sample does not contain an organic solvent;

loading the first eluted sample to an ion exchange and mixed mode chromatograph and eluting the polypeptide with a second elution buffer comprising at least 1M of an inorganic salt to generate a second eluted sample; and

loading the second eluted sample to a hydrophobic interaction chromatograph and eluting the polypeptide with a third elution buffer comprising at least 2mM sodium chloride,

thereby preparing a purified sample comprising the polypeptide product.

2. The method of claim 1, wherein the sample to which the detergent is added contains the polynucleotide construct and a polypeptide product expressed from the polynucleotide construct.

3. The method of claim 1 or claim 2, wherein the ion exchange and mixed mode chromatograph comprises a ceramic hydroxyapatite type I chromatograph.

4. The method of any one of the preceding claims, wherein the second elution buffer comprises at least 2M of the inorganic salt; wherein preferably the inorganic salt is sodium chloride.

5. The method of any one of the preceding claims, wherein:

i) the detergent comprises Triton X-100 (polyethylene glycol p-(1,1,3,3-tetramethylbutyl)-phenyl ether); and/or

ii) the first elution buffer comprises 0.5M to 2M arginine; wherein preferably the first elution buffer has a pH of about 5 to 5.4; and/or

iii) the hydrophobic interaction chromatograph comprises an octyl sepharose chromatograph.

6. The method of any one of the preceding claims, further comprising:

i) a purification step with an anion exchange chromatograph; wherein preferably the anion exchange chromatograph comprises a Sartobind^{TM} ion exchange membrane; and/or

ii) subjecting one or more of the samples to filtration with a nanofleece filter; wherein preferably the filtration with the nanofleece filter is prior to loading the sample to the STI-based affinity chromatograph.

7. The method of any preceding claim, wherein the purified sample contains less than about 1% of contaminant proteins not expressed by the polynucleotide construct.

8. The method of any preceding claim, wherein the polypeptide product is expressed in a cell that contains the polynucleotide construct;

wherein preferably the cell is grown in a medium under conditions to produce at least 100 mg or at least 200 mg of the polypeptide product per liter of medium;

wherein more preferably the purified sample contains (i) more than about 50% of the polypeptide product produced in the medium or (ii) more than about 100 mg of the polypeptide product from each liter production of the medium.

9. The method of any preceding claim, wherein the polypeptide product is a two-chain polypeptide comprising a light chain and a heavy chain.

10. The method of claim 9, wherein:

i) about 20% to 50% of the polypeptide product in the purified sample has:

(A) a heavy chain consisting of the amino acid sequence of SEQ ID NO: 5; or

(B) a heavy chain consisting of the amino acid sequence of SEQ ID NO: 5; and about 5%-95% of the heavy chain consisting of the amino acid sequence of SEQ ID NO: 5 has two O-linked glycosylations and about 5%-95% of the heavy chain consisting of the amino acid sequence of SEQ ID NO: 5 has one O-linked glycosylation;

and/or

ii) about 40-80% of the polypeptide product in the purified sample has:

(A) a heavy chain consisting of the amino acid sequence of SEQ ID NO: 8; or

(B) a heavy chain consisting of the amino acid sequence of SEQ ID NO: 8; and at least about 90% of the heavy chain consisting of the amino acid sequence of SEQ ID NO: 8 has one O-linked glycosylation;

and/or

iii) about 2%-12% of the polypeptide product in the purified sample has a heavy chain consisting of the amino acid sequence of SEQ ID NO: 9; and/or

iv) about 0.1%-1.5% of the polypeptide product in the purified sample has a heavy chain consisting of the amino acid sequence of SEQ ID NO: 10; and/or

v) about 2%-8% of the polypeptide product in the purified sample has a heavy chain consisting of the amino acid sequence of SEQ ID NO: 11; and/or

vi) about 35%-60% of the polypeptide product in the purified sample has a light chain consisting of the amino acid sequence of SEQ ID NO: 4.

11. A pharmaceutical composition comprising a pharmaceutically acceptable carrier and a polypeptide portion of two-chain polypeptides wherein:

about 35%-60% of the two-chain polypeptides have a light chain consisting of the amino acid sequence of SEQ ID NO: 4;

about 20%-60% of the two-chain polypeptides have a heavy chain consisting of the amino acid sequence of SEQ ID NO: 5;

about 40%-60% of the two-chain polypeptides have a heavy chain consisting of the amino acid sequence of SEQ ID NO: 8; and

less than 10% of the two-chain polypeptides have a heavy chain consisting of the amino acid sequence of SEQ ID NO: 9.

12. The pharmaceutical composition of claim 11, wherein:

i) less than 5% or less than 3% of the two-chain polypeptides have a heavy chain consisting of the amino acid sequence of SEQ ID NO: 9; and/or

ii) about 0.1%-1.5% of the two-chain polypeptides have a heavy chain consisting of the amino acid sequence of SEQ ID NO: 10; and/or

iii) about 2%-8% of the two-chain polypeptides have a heavy chain consisting of the amino acid sequence of SEQ ID NO: 11.

13. The pharmaceutical composition of claim 11 or claim 12, wherein:

i) about 30%-70% of the heavy chain consisting of the amino acid sequence of SEQ ID NO: 5 has two O-linked glycosylations; and/or.

ii) about 30%-70% of the heavy chain consisting of the amino acid sequence of SEQ ID NO: 5 has one O-linked glycosylation; and/or

iii) at least about 90% of the heavy chain consisting of the amino acid sequence of SEQ ID NO: 8 has one O-linked glycosylation.

14. The pharmaceutical composition of any one of claims 11 to 13, wherein:

i) the preparation is lyophilized; and/or

ii) the pharmaceutical composition further comprises L-arginine HCl or L-arginine acetate; and/or

iii) the pharmaceutical composition further comprises sucrose; and/or

iv) the pharmaceutical composition further comprises mannitol.

15. Use of the pharmaceutical composition according to any one of claims 11 to 14 in the manufacture of a medicament for treatment of anticoagulation in a patient undergoing an anticoagulation treatment with a factor Xa inhibitor, wherein the medicament reverses or inhibits anticoagulation and wherein the medicament is to be administered to said patient.