CLAIMS

1. A polypeptide comprising truncated von Willebrand Factor (VWF) which comprises a sequence as shown in SEQ ID NO:3 or a fragment thereof, wherein the truncated VWF comprises SEQ ID NO:5 (S764P/S766W/V1083A), SEQ ID NO:6 (S764G/S766Y/V1083A), SEQ ID NO:7 (S764E/S766Y/V1083A), SEQ ID NO:8 (N1011S/V1083A/K1181E), SEQ ID NO:17 (S766Y/V1083A), SEQ ID NO:9 (V1083A), SEQ ID NO:10 (S1042T), SEQ ID NO:11 (V805A/Q1158L), SEQ ID NO:12 (K912E/T1088S) or SEQ ID NO:13 (L781P); and wherein the truncated VWF binds Factor VIII (FVIII) and the truncated VWF binds to Factor VIII with an off rate lower than a reference polypeptide comprising an unmodified SEQ ID NO:3.

2. The polypeptide as claimed in claim 1 in which the truncated VWF binds to Factor VIII with an off rate at least 5 fold lower than the reference polypeptide; whereby the truncated VWF binds to Factor VIII preferably with an off rate at least 10 fold lower than the reference polypeptide.

3. The polypeptide as claimed in claim 1 in which the truncated VWF binds to Factor VIII with a KD at least 5 fold lower than the reference polypeptide; whereby the truncated VWF binds to Factor VIII preferably with a KD at least 10 fold lower than the reference polypeptide.

4. The polypeptide as claimed in any one of claims 1 to 3 in which the truncated VWF further comprises residues 1243 to 1247 of SEQ ID NO:2 or further comprises residues 1243 to 1270 of SEQ ID NO:2.

5. The polypeptide as claimed in any one of claims 1 to 3 in which the truncated VWF lacks residues 1243 to 1247 of SEQ ID NO:2 or lacks residues 1243 to 2813 of SEQ ID NO:2.

6. The polypeptide as claimed in any one of claims 1 to 5 in which the polypeptide further comprises a half-life extending moiety.

7. The polypeptide as claimed in claim 6 wherein the half-life extending moiety is a heterologous amino acid sequence fused to the truncated VWF, wherein said heterologous amino acid sequence preferably comprises or consists of a polypeptide selected from the group consisting of immunoglobulin constant regions and portions

thereof, e.g. the Fc fragment, transferrin and fragments thereof, the C-terminal peptide of human chorionic gonadotropin, solvated random chains with large hydrodynamic volume known as XTEN, homo-amino acid repeats (HAP), proline-alanine-serine repeats (PAS), albumin, afamin, alpha-fetoprotein, Vitamin D binding protein, polypeptides capable of binding under physiological conditions to albumin or immunoglobulin constant regions, and combinations thereof.

8. The polypeptide as claimed in claim 6, wherein the half-life extending moiety is conjugated to the polypeptide, wherein said half-life-extending moiety is preferably selected from the group consisting of hydroxyethyl starch (HES), polyethylene glycol (PEG), polysialic acids (PSAs), elastin-like polypeptides, heparosan polymers, hyaluronic acid and albumin binding ligands, e.g. fatty acid chains, and combinations thereof.

9. The polypeptide as claimed in claim 7 in which the heterologous amino acid sequence comprises albumin, preferably, in which the N-terminus of the albumin is fused to the C-terminus of the truncated VWF sequence either directly or via a spacer.

10. The polypeptide as claimed in one of claims 1 to 9 wherein the polypeptide is a glycoprotein comprising N-glycans, and wherein at least 75%, preferably at least 85%, preferably at least 90%, and more preferably at least 95% of said N-glycans comprise, on average, at least one sialic acid moiety, preferably, wherein at least 60% of said N-glycans comprise, on average, at least one α-2,6-sialic acid moiety.

11. The polypeptide as claimed in any one of claims 1 to 10 wherein the polypeptide is a dimer.

12. A complex comprising a Factor VIII molecule and the polypeptide of any one of claims 1 to 11.

13. The polypeptide of any one of claims 1 to 11 or the complex of claim 12 for use in the treatment or prophylaxis of a blood coagulation disorder, wherein the blood coagulation disorder preferably is von Willebrand's disease (VWD) or hemophilia A.

14. A pharmaceutical composition comprising the polypeptide of any one of claims 1 to 11 or the complex of claim 12.

15. A pharmaceutical composition comprising (i) a FVIII and (ii) a polypeptide as claimed in any one of claims 1 to 11 wherein the molar ratio of the polypeptide to the FVIII in the composition is greater than 50.

16. A pharmaceutical kit comprising (i) a FVIII and (ii) a polypeptide as defined in any one of claims 1 to 11 for simultaneous, separate or sequential use in the treatment of a blood coagulation disorder, said treatment comprising the polypeptide and the FVIII to be administered to a subject having endogenous VWF, wherein the molar ratio of the polypeptide to be administered to the endogenous VWF is greater than 0.5, and/or wherein the molar ratio of the polypeptide to be administered to the FVIII to be administered is greater than 50.

17. A polypeptide for use as defined in claim 13 for improving the plasma half-life of FVIII, and/or for reducing the frequency of administration of FVIII.

18. A polynucleotide encoding the polypeptide of any one of claims 1 to 11.

19. A plasmid or vector comprising the polynucleotide of claim 18, wherein said plasmid or vector preferably being an expression vector.

20. A host cell comprising the polynucleotide of claim 18 or the plasmid of claim 19.

21. A method of producing a polypeptide comprising a truncated VWF, comprising:

(i) culturing the host cells of claim 20 under conditions such that the polypeptide comprising a truncated VWF is expressed; and

(ii) optionally recovering the polypeptide comprising the truncated VWF from the host cells or from the culture medium.