CLAIMS

1. A method of incrementally increasing the hydrodynamic size of a recombinant polypeptide of interest wherein said recombinant polypeptide of interest is selected from the group consisting of a coagulation factor IX (FIX) and a coagulation factor VIIa (FVIIa),

said method comprising a step of recombinantly fusing

(a) three chorionic gonadotrophin carboxy terminal peptide CTP units to the carboxy terminus of said coagulation factor IX (FIX) and no CTPs attached to the N-terminus; or

(b) three CTP units to the carboxy terminus of said coagulation factor VIIa (FVIIa) and no CTPs attached to the N-terminus;

followed by a step of expressing the recombinant CTP-modified polypeptides in a Chinese hamster ovary (CHO) host cell, wherein expression comprises glycosylating said CTP-units and the glycosylation comprises O-glycosylation;

wherein said glycosylated CTP units incrementally increase the hydrodynamic size of the FIX by an increment of about 48-53 kDA per each of said glycosylated CTP units, and,

wherein said glycoslyated CTP units incrementally increase the hydrodynamic size of the FVIIa by an increment of about 43-50 kDA per each of said glycosylated CTP units,

thereby incrementally increasing the hydrodynamic size of said recombinant polypeptide of interest.

2. The method of claim 1, wherein said O-glycosylation is a GalNAc attachment to serine (Ser) or threonine (Thr) in the polypeptide chain by an α-glycosidic linkage or a core 1 glycosylation, O-fucosylation, O-mannosylation, or O-glycosylation.

3. The method of claim 2, wherein said O-glycosylation is followed by the addition of one to sixty galactose molecules or by the addition of one to 120 sialic acid molecules.

4. The method of claim 1, wherein increasing said hydrodynamic size increases the bioavailability of said polypeptide.

5. The method of claim 1, wherein the amino acid sequence of at least one of said CTP units is selected from the group consisting of SEQ ID NO: 1 and SEQ ID NO: 2.

6. The method of claim 1, wherein at least one of said CTP units is truncated.

7. The method of claim 1, wherein at least one of said CTP units is attached to said polypeptide via a linker.

8. The method of claim 7, wherein said linker is a peptide bond.