Claims:

1. A fusion protein comprising Relaxin–PCS–HEM or HEM–PCS–Relaxin, wherein
Relaxin comprises a Relaxin A chain polypeptide or a functional variant thereof,
and a Relaxin B chain polypeptide or a functional variant thereof,
PCS comprises an endo-protease cleavage site, and
HEM is a proteinaceous half-life extending moiety.

2. A fusion polypeptide comprising proRelaxin–PCS–HEM or HEM–PCS–proRelaxin,
wherein
proRelaxin comprises a Relaxin A chain polypeptide or a functional variant thereof,
a relaxin C-chain polypeptide and a Relaxin B chain polypeptide or a functional variant thereof,
PCS comprises an endo-protease cleavage site, and
HEM is a proteinaceous half-life extending moiety.

3. A fusion protein or polypeptide according to claims 1 or 2, wherein the PCS is a cleavage site of an extracellular endo-protease.

4. A fusion protein or polypeptide according to claim 3, wherein the endo-protease is an endogenous endo-protease.

5. A fusion polypeptide according to anyone of the foregoing claims, wherein the proteinaceous half-life extending moieties are comprised in a group of proteinaceous half-life extending moieties consisting of immunoglobulin Fc domain, serum albumin, transferrin and serum albumin binding protein.

6. A fusion polypeptide according to anyone of the foregoing claims, wherein the Relaxin A chain is human Relaxin 2 A chain and the Relaxin B chain is human Relaxin 2 B chain.

7. A polynucleotide encoding a proRelaxin–PCS–HEM or HEM–PCS–proRelaxin fusion polypeptide according anyone of claims 2 – 6.

8. A vector comprising a polynucleotide according to claim 7.

9. A host cell comprising a vector according to claim 8 or a polynucleotide according to claim 7.

10. A method of producing a Relaxin–PCS–HEM or HEM–PCS–Relaxin protein according to anyone of claims 1 – 6 comprising the steps of cultivating a host cell of claim 9 further comprising a prohormone convertase activity and isolating the protein.

11. A pharmaceutical composition comprising a Relaxin–PCS–HEM or HEM–PCS–Relaxin protein according to anyone of claims 1 – 6.

12. A pharmaceutical composition according to claim 11 or a Relaxin–PCS–HEM or HEM–PCS–Relaxin protein according to anyone of claims 1 – 6 as medicament.

13. A pharmaceutical composition according to claim 11 or 12 or a Relaxin–PCS–HEM or HEM–PCS–Relaxin protein according to anyone of claims 1 – 6 as medicament for the treatment of cardiovascular disease, lung disease, fibrotic disorder or kidney disease.

14. A method of treating a cardiovascular disease, lung disease, fibrotic disorder or kidney disease comprising the administration of a therapeutically effective dose of a pharmaceutical composition according to claim 11 and 12 or a Relaxin–PCS–HEM or HEM–PCS–Relaxin protein according to anyone of claims 1 – 6.

15. A treatment according to claims 13 or 14, wherein the cardiovascular disease is comprised in the group of coronary heart disease, acute coronary syndrome, heart failure, or myocardial infarction.

Claims:

1. A fusion protein comprising Relaxin–PCS–HEM or HEM–PCS–Relaxin, wherein
   Relaxin comprises a Relaxin A chain polypeptide or a functional variant thereof,
   and a Relaxin B chain polypeptide or a functional variant thereof,
   PCS comprises an endo-protease cleavage site, and
   HEM is a proteinaceous half-life extending moiety.

2. A fusion polypeptide comprising proRelaxin–PCS–HEM or HEM–PCS–proRelaxin,
   wherein
   proRelaxin comprises a Relaxin A chain polypeptide or a functional variant thereof,
   a relaxin C-chain polypeptide and a Relaxin B chain polypeptide or a functional variant thereof,
   PCS comprises an endo-protease cleavage site, and
   HEM is a proteinaceous half-life extending moiety.

3. A fusion protein or polypeptide according to claims 1 or 2, wherein the PCS is a cleavage site of an extracellular endo-protease.

4. A fusion protein or polypeptide according to claim 3, wherein the endo-protease is an endogenous endo-protease.

5. A fusion polypeptide according to any one of the foregoing claims, wherein the proteinaceous half-life extending moieties are comprised in a group of proteinaceous half-life extending moieties consisting of immunoglobulin Fc domain, serum albumin, transferrin and serum albumin binding protein.

6. A fusion polypeptide according to any one of the foregoing claims, wherein the Relaxin A chain is human Relaxin 2 A chain and the Relaxin B chain is human Relaxin 2 B chain.

7. A polynucleotide encoding a proRelaxin–PCS–HEM or HEM–PCS–proRelaxin fusion polypeptide according any one of claims 2 – 6.

8. A vector comprising a polynucleotide according to claim 7.

9. A host cell comprising a vector according to claim 8 or a polynucleotide according to claim 7.

10. A method of producing a Relaxin–PCS–HEM or HEM–PCS–Relaxin protein according to any one of claims 1 – 6 comprising the steps of cultivating a host cell of claim 9 further comprising a prohormone convertase activity and isolating the protein.

11. A pharmaceutical composition comprising a Relaxin–PCS–HEM or HEM–PCS–Relaxin protein according to any one of claims 1 – 6.

12. A pharmaceutical composition according to claim 11 or a Relaxin–PCS–HEM or HEM–PCS–Relaxin protein according to any one of claims 1 – 6 for use as medicament.

13. A pharmaceutical composition according to claim 11 or 12 or a Relaxin–PCS–HEM or HEM–PCS–Relaxin protein according to any one of claims 1 – 6 for use as medicament for the treatment of cardiovascular disease, lung disease, fibrotic disorder or kidney disease.