Claims:

1. A fusion polypeptide having Relaxin activity comprising A-L-B,

wherein

B comprises a Relaxin B chain polypeptide or a functional variant thereof,

A comprises a Relaxin A chain poylpeptide or a functional variant thereof, and

L is a linker polypeptide.

2. A fusion polypeptide according to claim 1, wherein the fusion polypeptide further comprises at least one half-life extending moiety.

3. A fusion polypeptide according to claim 2, wherein half-life extending moiety is an IgG1 Fc domain, PEG or HES.

4. A fusion polypeptide according to anyone of the foregoing claims, wherein the linker polypeptide L is 6 – 14 amino acids in length.

5. A fusion polypeptide according to anyone of the foregoing claims, wherein the Relaxin A chain is human Relaxin 2 A chain (SEQ ID NO: 117) and the Relaxin B chain is human Relaxin 2 B chain (SEQ ID NO: 119).

6. A fusion polypeptide comprising a polypeptide as depicted in table 3.

7. A fusion polypeptide according to anyone of claims 1 to 6, wherein A-L-B is selected from the group of A-L-B polypeptides consisting of scR3, scR4, scR5, scR3 w/o Tag, scR4 w/o Tag, scR5 w/o Tag, scR-Fc5, scR-Fc6 and scR-Fc7.

8. A polynucleotide encoding a fusion polypeptide according to anyone of the foregoing claims.

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

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

11. A method of producing a polypeptide according to anyone of claims 1 – 7 comprising the steps of cultivating a host cell of claim 10 and isolating the polypeptide.

12. A pharmaceutical composition comprising a fusion polypeptide according to anyone of claims 1 – 7.

13. A pharmaceutical composition according to claim 12 or a fusion polypeptide according to anyone of claims 1 – 7 as medicament.

14. A pharmaceutical composition according to claim 12 and 13 or a fusion polypeptide according to anyone of claims 1 – 7 as medicament for the treatment of cardiovascular disease, lung disease, fibrotic disorder or kidney disease.

15. 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 12 and 13 or a fusion polypeptide according to anyone of claims 1 – 7.

16. A treatment according to claims 14 and 15, wherein the cardiovascular disease is coronary heart disease, acute coronary syndrome, heart failure, and myocardial infarction.

Claims:

1. A fusion polypeptide having Relaxin activity comprising A-L-B,
wherein
B comprises a Relaxin B chain polypeptide or a functional variant thereof,
A comprises a Relaxin A chain poylpeptide or a functional variant thereof, and
L is a linker polypeptide.

2. A fusion polypeptide according to claim 1, wherein the fusion polypeptide further comprises at least one half-life extending moiety.

3. A fusion polypeptide according to claim 2, wherein half-life extending moiety is an IgG1 Fc domain, PEG or HES.

4. A fusion polypeptide according to any one of the foregoing claims, wherein the linker polypeptide L is 6 – 14 amino acids in length.

5. A fusion polypeptide according to any one of the foregoing claims, wherein the Relaxin A chain is human Relaxin 2 A chain (SEQ ID NO: 117) and the Relaxin B chain is human Relaxin 2 B chain (SEQ ID NO: 119).

6. A fusion polypeptide comprising a polypeptide as depicted in table 3.

7. A fusion polypeptide according to any one of claims 1 to 6, wherein A-L-B is selected from the group of A-L-B polypeptides consisting of scR3, scR4, scR5, scR3 w/o Tag, scR4 w/o Tag, scR5 w/o Tag, scR-Fc5, scR-Fc6 and scR-Fc7.

8. A polynucleotide encoding a fusion polypeptide according to any one of the foregoing claims.

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

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

11. A method of producing a polypeptide according to any one of claims 1 – 7 comprising the steps of cultivating a host cell of claim 10 and isolating the polypeptide.

12. A pharmaceutical composition comprising a fusion polypeptide according to any one of claims 1 – 7.

13. A pharmaceutical composition according to claim 12 or a fusion polypeptide according to any one of claims 1 – 7 for use as medicament.

14. A pharmaceutical composition according to claim 12 and 13 or a fusion polypeptide according to any one of claims 1 – 7 for use as medicament for the treatment of cardiovascular disease, lung disease, fibrotic disorder or kidney disease.