Claims

1. A therapeutic fusion protein for enhancing efferocytosis comprising an integrin binding domain, a phosphatidylserine (PS) binding domain and a solubilizing domain, wherein the solubilizing domain is inserted between the integrin binding domain and the PS binding domain; and wherein the integrin binding domain binds to an integrin.

2. The fusion protein of claim 1, wherein the integrin binding domain binds to αvβ3 and/or αvβ5 and/or α8β1 integrin.

3. The fusion protein of claim 1 or 2, wherein the integrin binding domain comprises a Arginine-Glycine-Aspartic acid (RGD) motif.

4. The fusion protein of any one of the preceding claims, wherein the solubilizing domain is linked directly to the integrin binding domain, to the PS binding domain or to both domains.

5. The fusion protein of any one of the preceding claims, wherein the solubilizing domain is linked indirectly to the integrin binding domain and/or the PS binding domain by a linker.

6. The fusion protein of any one of the preceding claims, wherein the solubilizing domain comprises human serum albumin (HSA), domain 3 of HSA (HSA D3), Fc-IgG, or a functional variant thereof.

7. The fusion protein of any one of the preceding claims, wherein the integrin binding domain has an amino acid sequence of SEQ ID NO: 2, or at least 90% sequence identity thereto, and the PS binding domain has an amino acid sequence of SEQ ID NO: 3, or at least 90% sequence identity thereto, or the PS binding domain has an amino acid sequence of SEQ ID NO: 76, or at least 90% sequence identity thereto.

8. The fusion protein of any one of the preceding claims, wherein the integrin binding domain has an amino acid sequence of SEQ ID NO: 2, or at least 90% sequence identity thereto and the PS binding domain has an amino acid sequence of SEQ ID NO: 78, or at least 90% sequence identity thereto.

9. The fusion protein of any one of the preceding claims, wherein the integrin binding domain has an amino acid sequence of SEQ ID NO: 77, or at least 90% sequence identity thereto and the PS binding domain has an amino acid sequence of SEQ ID NO: 3, or at least 90% sequence

identity thereto, or the PS binding domain has an amino acid sequence of SEQ ID NO: 76, or at least 90% sequence identity thereto.

10. The fusion protein of any one of the preceding claims, wherein the solubilizing domain is HSA and has an amino acid sequence of SEQ ID NO: 4, or at least 90% sequence identity thereto.

11. The fusion protein of any one of the preceding claims, wherein the fusion protein has an amino acid sequence of SEQ ID NO: 42, or at least 90% sequence identity thereto.

12. The fusion protein of any one of the preceding claims, wherein the fusion protein has an amino acid sequence of SEQ ID NO: 44, or at least 90% sequence identity thereto; or SEQ ID NO: 47, or at least 90% sequence identity thereto; or SEQ ID NO: 48, or at least 90% sequence identity thereto.

13. The fusion protein of any one of the preceding claims, wherein the fusion protein has an amino acid sequence of SEQ ID NO: 80, or at least 90% sequence identity thereto.

14. The fusion protein of any one of the preceding claims, wherein the fusion protein has an amino acid sequence of SEQ ID NO: 82, or at least 90% sequence identity thereto.

15. An isolated nucleic acid encoding the amino acid sequence of any one of claims 11 to 14.

16. A cloning or expression vector comprising the nucleic acid according to claim 15.

17. A recombinant host cell suitable for the production of a therapeutic fusion protein, comprising one or more cloning or expression vectors according to claim 16 and optionally, secretion signals.

18. A pharmaceutical composition comprising the fusion protein of any one of claims 1 to 14 and a pharmaceutically acceptable carrier.

19. The fusion protein of any one of claims 1 to 14 for use in the treatment or prevention of an inflammatory disorder or inflammatory organ injury in an individual in need thereof, wherein the inflammatory disorder or inflammatory organ injury is acute kidney injury, acute respiratory distress syndrome, acute liver injury, sepsis, myocardial infarction, stroke, burns, traumatic injury and inflammatory and organ injuries resulting from ischemia/reperfusion.

20. The fusion protein for use according to claim 19, wherein the fusion protein is administered in combination with another therapeutic agent, wherein the therapeutic agent is an immunosuppressive agent, an immunomodulating agent, an anti-inflammatory agent, an anti-oxidant, an anti-infective agent, a cytotoxic agent or an anti-cancer agent.