

CLAIMS

What is claimed is:

1. A fusion protein comprising a GDF15 region joined to an Fc region via a linker, wherein the GDF15 region comprises the amino acid sequence of SEQ ID NO: 6 and at least one mutation, wherein at least one of the mutations is of the aspartate at position 5.
2. The fusion protein of claim 1, wherein the aspartate at position 5 is mutated to glutamate.
3. The fusion protein of claim 2, wherein the GDF15 region comprises the amino acid sequence of SEQ ID NO: 16.
4. The fusion protein of claim 1 or 2, wherein the GDF15 region further comprises a mutation of the asparagine at position 3.
5. The fusion protein of claim 3, wherein the asparagine at position 3 mutated to glutamine.
6. The fusion protein of claim 5, wherein the GDF15 region comprises the amino acid sequence of SEQ ID NO: 18.
7. The fusion protein of any one of claims 1-6, wherein the linker is a (G4S)_n or (G4Q)_n linker, wherein n is greater than 0.
8. The fusion protein of claim 7, wherein n is 1 or 2.
9. A fusion protein comprising a GDF15 region joined to an Fc region via a linker, wherein the GDF15 region comprises the amino acid sequence of SEQ ID NO 6 and at least one mutation, wherein at least one of the mutations is of the asparagine at position 3 or the aspartate at position 5, and wherein the linker is a (G₄Q)_n linker and n is greater than 2.
10. The fusion protein of claim 7 or 9, wherein the n is 3 or 4.
11. The fusion protein of claim 9 or 10, wherein the GDF15 region comprises a mutation of aspartate at position 5 to glutamate.
12. The fusion protein of claim 11, wherein the GDF15 region comprises the amino acid sequence of SEQ ID NO: 16.
13. The fusion protein of any one of claims 9-11, wherein the GDF15 region comprises a mutation of the asparagine at position 3 to glutamine.
14. The fusion protein of claim 13, wherein the GDF15 region comprises the amino acid sequence of SEQ ID NO: 18.
15. The fusion protein of any one of claims 1-14, wherein the Fc region comprises a charged pair mutation.
16. The fusion protein of any one of claims 1-14, wherein the Fc region comprises a truncated hinge region.
17. The fusion protein of any one of claims 1-10, wherein the Fc region is selected from Table 3.
18. A method for treating a metabolic condition or disorder comprising administering a fusion protein of any one of claims 1-17.