CLAIMS

1. A polypeptide comprising a human IGF-1 protein of SEQ ID NO: 1, wherein the amino acid glycine at position 42 is mutated to serine.

2. A polypeptide according to claim 1, wherein the human IGF-1 protein comprises the following additional modifications:

    a. amino acids E3 is deleted,

    b. amino acid R37 is mutated to alanine.

3. A polypeptide according to claim 1, wherein the polypeptide comprises the following additional modifications

    a. amino acids G1, P2, E3 are deleted and amino acids R36 and R37 are substituted or deleted.

4. A polypeptide according to claim 3, wherein the polypeptide comprises the following modifications

    a. amino acids G1, P2, E3 are deleted,

    b. amino acid R36 is mutated to glutamine, and

    c. amino acid R37 is mutated to alanine.

5. A polypeptide according to claim 1, wherein the polypeptide comprises the following additional modifications

    a. amino acids G1, P2, E3 are deleted and amino acid R37 is substituted or deleted.

6. A polypeptide according to claim 5, wherein the polypeptide comprises the following modifications

    a. amino acids G1, P2, E3 are deleted and

    b. amino acid R37 is mutated to alanine.

7. A polynucleotide comprising a nucleic acid molecule encoding the polypeptide according to any of claims 1-6.

8. A pharmaceutical composition comprising the polypeptide of any of claims 1-6, for use in therapy.

9. Use of the pharmaceutical composition of claim 8 for the manufacture of a medicament for treating muscle disorder in a patient in need thereof.

10. Use of the pharmaceutical composition of claim 8, for the manufacture of a medicament for treating muscle atrophy.