

CLAIMS:

1. An isolated polypeptide comprising an amino acid sequence of SEQ. ID. NO: 2 or SEQ. ID. NO: 4.
2. An isolated polypeptide comprising an amino acid sequence of SEQ. ID. NO: 2 or SEQ. ID. NO: 4, in which one or more amino acid residues is added, deleted or replaced, without significantly affecting the biological characteristics of the modified molecule as compared to the unmodified molecule, wherein at least 70% of the amino acids of SEQ. ID. NO: 2 or SEQ. ID. NO: 4 are left unsubstituted.
3. An isolated polypeptide comprising a partial contiguous sequence from SEQ. ID. NO: 2 that includes at least 8 amino acid residues, which contiguous sequence is included as a contiguous sequence in said SEQ. ID. NO: 2.
4. An isolated polypeptide according to Claim 3, comprising a contiguous sequence of 13 amino acid residues beginning from the N-terminal of SEQ. ID. NO: 4.
5. An isolated protein or polypeptide comprising an amino acid sequence of the polypeptide according to any one of Claims 1-4.
6. An isolated polypeptide according to Claim 2, comprising a sequence of amino acids AA₁ through AA₅₁, wherein:
 - AA₁ is selected from leucine, isoleucine, valine and methionine;
 - AA₂ is selected from lysine, arginine and histidine;
 - AA₃ is selected from leucine, isoleucine, valine and methionine;
 - AA₄ is selected from tryptophan, phenylalanine and tyrosine;
 - AA₅ is selected from leucine, isoleucine, valine and methionine;
 - AA₆ is selected from serine, threonine, alanine, glycine and proline;
 - AA₇ is selected from serine, threonine, alanine, glycine and proline;
 - AA₈ is selected from glutamine, glutamic acid, aspartic acid and asparagine;
 - AA₉ is selected from serine, threonine, alanine, glycine and proline;
 - AA₁₀ is selected from leucine, isoleucine, valine and methionine;

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AA₁₁ is selected from glutamine, glutamic acid, aspartic acid and asparagine;

AA₁₂ is selected from serine, threonine, alanine, glycine and proline;

AA₁₃ is selected from serine, threonine, alanine, glycine and proline;

5 AA₁₄ is selected from serine, threonine, alanine, glycine and proline;

AA₁₅ is selected from serine, threonine, alanine, glycine and proline;

AA₁₆ is selected from lysine, arginine and histidine;

AA₁₇ is selected from glutamine, glutamic acid, aspartic acid and asparagine;

AA₁₈ is selected from leucine, isoleucine, valine and methionine;

10 AA₁₉ is selected from lysine, arginine and histidine;

AA₂₀ is selected from serine, threonine, alanine, glycine and proline;

AA₂₁ is selected from lysine, arginine and histidine;

AA₂₂ is selected from serine, threonine, alanine, glycine and proline;

AA₂₃ is selected from glutamine, glutamic acid, aspartic acid and asparagine;

15 AA₂₄ is selected from serine, threonine, alanine, glycine and proline;

AA₂₅ is selected from lysine, arginine and histidine;

AA₂₆ is selected from lysine, arginine and histidine;

AA₂₇ is selected from leucine, isoleucine, valine and methionine;

AA₂₈ is selected from serine, threonine, alanine, glycine and proline;

20 AA₂₉ is selected from glutamine, glutamic acid, aspartic acid and asparagine;

AA₃₀ is selected from lysine, arginine and histidine;

AA₃₁ is selected from glutamine, glutamic acid, aspartic acid and asparagine;

AA₃₂ is selected from leucine, isoleucine, valine and methionine;

AA₃₃ is selected from leucine, isoleucine, valine and methionine;

25 AA₃₄ is selected from serine, threonine, alanine, glycine and proline;

AA₃₅ is selected from lysine, arginine and histidine;

AA₃₆ is selected from serine, threonine, alanine, glycine and proline;

AA₃₇ is selected from leucine, isoleucine, valine and methionine;

AA₃₈ is selected from tryptophan, phenylalanine and tyrosine;

30 AA₃₉ is selected from tryptophan, phenylalanine and tyrosine;

AA₄₀ is selected from serine, threonine, alanine, glycine and proline;

AA₄₁ is selected from tryptophan, phenylalanine and tyrosine;

AA₄₂ is selected from tryptophan, phenylalanine and tyrosine;

5 AA₄₃ is selected from leucine, isoleucine, valine and methionine;

AA₄₄ is selected from serine, threonine, alanine, glycine and proline;

AA₄₅ is selected from serine, threonine, alanine, glycine and proline;

AA₄₆ is selected from serine, threonine, alanine, glycine and proline;

AA₄₇ is selected from leucine, isoleucine, valine and methionine;

10 AA₄₈ is selected from tryptophan, phenylalanine and tyrosine;

AA₄₉ is selected from glutamine, glutamic acid, aspartic acid and asparagine;

AA₅₀ is selected from lysine, arginine and histidine; and

AA₅₁ is selected from lysine, arginine and histidine.

7. An isolated polypeptide, comprising a sequence selected from SEQ.
15 ID. NO: 5, SEQ. ID. NO: 6, SEQ. ID. NO: 7, SEQ. ID. NO: 8, SEQ. ID. NO: 9,
SEQ. ID. NO: 10 and SEQ. ID. NO: 12.

8. An isolated polypeptide according to claim 2 comprising a modified
sequence of SEQ. ID NO: 2 or SEQ. ID. NO: 4, in which up to three residues
are each substituted by another amino acid residue by conservative substitution.

20 9. An isolated polypeptide according to any one of Claims 1-3,
comprising amino acid residues AA₃₈-AA₃₉-AA₄₀-AA₄₁-AA₄₂, being residues
of positions 38 to 42 of SEQ. ID. NO: 4, which are either modified or
unmodified, said modification being by conservative substitution, wherein:

AA₃₈ is selected from tryptophan, phenylalanine, and tyrosine;

25 AA₃₉ is selected from tryptophan, phenylalanine, and tyrosine;

AA₄₀ is selected from threonine, serine, alanine and proline;

AA₄₁ is selected from phenylalanine, tyrosine, and tryptophan;

AA₄₂ is selected from phenylalanine, tyrosine, and tryptophan.

10. An isolated polypeptide according to any one of Claims 1-3,
30 comprising amino acid residues AA₃₈-AA₃₉-AA₄₀-AA₄₁-AA₄₂-AA₄₃, being

residues of positions 38 to 43 of SEQ. ID. NO: 4, which are either substituted by other amino acid residues or unsubstituted, said substitution being a conservative substitution, wherein:

AA₃₈ is selected from tryptophan, phenylalanine, and tyrosine;

5 AA₃₉ is selected from tryptophan, phenylalanine, and tyrosine;

AA₄₀ is selected from threonine, serine, alanine and proline;

AA₄₁ is selected from phenylalanine, tyrosine, and tryptophan;

AA₄₂ is selected from phenylalanine, tyrosine, and tryptophan.

AA₄₃ is selected from leucine, valine, isoleucine, and methionine.

10 11. An isolated polypeptide according to any one of Claims 1-3, comprising amino acid residues AA₃₆-AA₃₇-AA₃₈-AA₃₉-AA₄₀-AA₄₁-AA₄₂, being residues of positions 36 to 42 of SEQ. ID. NO: 4, which are either substituted by other amino acid residues or unsubstituted, said substitution being a conservative substitution, wherein:

15 AA₃₆ is alanine;

AA₃₉ is valine;

AA₃₈ is selected from tryptophan, phenylalanine, and tyrosine;

AA₃₉ is selected from tryptophan, phenylalanine, and tyrosine;

AA₄₀ is selected from threonine, serine, alanine and proline;

20 AA₄₁ is selected from phenylalanine, tyrosine, and tryptophan;

AA₄₂ is selected from phenylalanine, tyrosine, and tryptophan.

12. An isolated polypeptide according to any one of Claims 1-3, comprising amino acid residues AA₃₆-AA₃₇-AA₃₈-AA₃₉-AA₄₀-AA₄₁-AA₄₂-AA₄₃, being residues of positions 36 to 43 of SEQ. ID. NO: 4, which are either substituted by other amino acid residues or unsubstituted, said substitution being a conservative substitution, wherein:

25 AA₃₆ is alanine;

AA₃₉ is valine;

AA₃₈ is selected from tryptophan, phenylalanine, and tyrosine;

30 AA₃₉ is selected from tryptophan, phenylalanine, and tyrosine;

AA₄₀ is selected from threonine, serine, alanine and proline;

AA₄₁ is selected from phenylalanine, tyrosine, and tryptophan;

AA₄₂ is selected from phenylalanine, tyrosine, and tryptophan;

AA₄₃ is selected from leucine, valine, isoleucine, and methionine.

- 5 13. An isolated polypeptide comprising one of the following amino acid sequences:

SKx₁x₂SDKQLISKAVx₃x₄x₅FFLx₆STL (SEQ ID NO: 15)

SKx₁x₂SDKQLISKAVx₃x₄x₅FFLx₆ (SEQ ID NO: 16)

10 SKx₁x₂SDKQLISKAVQRIFF, (SEQ ID NO: 17) or

SKx₁x₂SDKQLISKAVQRIFFLx₆STL (SEQ ID NO: 18)

wherein

x₁ represents R, Q, F, H, K, N, D, E, Y or W;

x₂ represents V, M, I or L;

15 x₃ represents W, Q, F, Y, N, D or E;

x₄ represents W, R, F, Y, H or K;

x₅ represents T, I, S, P, A, G, L, V or M; and

x₆ represents P, L, S, T, A, G, I, V or M.

14. An isolated protein or polypeptide comprising the amino acid sequence
20 of Claim 13.

15. A polypeptide sequence according to any one of Claims 1-14, in which the amino acids are in the reverse order.

16. A pharmaceutical composition comprising the isolated polypeptide of any one of Claims 1-15.

- 25 17. A method of treatment of a disease or disorder, comprising administering to a subject in need, an effective amount of the polypeptide of any one of claims 1-15.

18. A method according to Claim 17, wherein the disease or disorder is selected from Parkinson's disease, Alzheimer's disease, an inflammatory or allergic condition, a skin disorder, a viral disease, a cancer disease, an

autoimmune disease, a burn, tuberculosis, herpes, acute or chronic hepatitis B, acute or chronic hepatitis C, chronic cholestatic hepatitis, cirrhosis, stomatitis, and male infertility.

19. A polypeptide sequence according to any one of Claims 1-15, wherein
5 one or more amino acids are replaced by the corresponding D-amino acid.