CLAIMS

1. A polypeptide comprising SEQ ID NO: 1 or a functionally equivalent variant thereof for use as a medicine.

2. A polypeptide comprising SEQ ID NO: 1 or a functionally equivalent variant thereof for use in the prevention and/or treatment of cancer.

3. The polypeptide for use according to any one of claims 1 or 2, wherein the functionally equivalent variant has a degree of identity with respect to SEQ ID NO: 1 greater than 60%.

4. The polypeptide for use according to any one of claims 1, 2 or 3, wherein the functionally equivalent variant is a polypeptide which results from the insertion or addition of one or more amino acids and/or from the deletion of one or more amino acids and/or from the conservative substitution of one or more amino acids with respect to SEQ ID NO: 1.

5. The polypeptide for use according to claim 4, wherein the functionally equivalent variant is a polypeptide which results from the insertion or addition of one amino acid with respect to SEQ ID NO: 1.

6. The polypeptide for use according to any one of claims 1 to 5, wherein the polypeptide or the functionally equivalent variant thereof is to be administered.

7. The polypeptide for use according to claim 6, wherein the polypeptide or the functionally equivalent variant thereof is to be administered via endovenous route or intranasal route.

8. The polypeptide for use according to any one of claims 1 to 7, wherein the cancer is lung cancer, breast cancer or brain cancer.

9. A conjugate comprising:

(i) the polypeptide comprising SEQ ID NO: 1 or a functionally equivalent variant thereof and

(ii) a chemical moiety that facilitates cellular uptake of the polypeptide or of the functionally equivalent variant thereof.

10. The conjugate according to claim 9 wherein the chemical moiety that facilitates cellular uptake of the polypeptide or of the functionally equivalent variant thereof is a cell penetrating peptide and wherein said cell penetrating peptide and said polypeptide or the functionally equivalent variant thereof form a fusion protein.

11. The conjugate according to claim 10 wherein the cell-penetrating peptide sequence is selected from the group consisting of RKKRRQRRR (SEQ ID NO:7), GRKKRRQRRR (SEQ ID NO: 28) and RRRRRRLR (SEQ ID NO: 29).

12. The conjugate according to any one of claims 9 to 11 further comprising a nuclear-localization signal.

13. The conjugate according to claim 12 wherein the nuclear localization signal is selected from the group consisting of PKKKRKV (SEQ ID NO: 39), PAAKRVKLD (SEQ ID NO: 50) and KRPAATKKAGQAKKKK (SEQ ID NO: 40).

14. The conjugate according to any one of claims 9 to 11, wherein the conjugate is selected from the group consisting of SEQ ID NO: 47 and SEQ ID NO: 48.

15. A pharmaceutical composition comprising a pharmaceutically active amount of a conjugate according to any one of claims 9 to 14 and a pharmaceutically acceptable excipient.

16. The pharmaceutical composition according to claim 15, wherein the conjugate forms part of a nanoparticle.

17. A conjugate according to any one of claims 9 to 14 for use as a medicine.

18. A conjugate according to any one of claims 9 to 14 for use in the prevention and/or treatment of cancer.

19. The conjugate for use according to claim 18, wherein the cancer is lung cancer, breast cancer or brain cancer.

20. The conjugate for use according to any one of claims 17 to 19, wherein the conjugate is to be administered.

21. The conjugate for use according to claim 20, wherein the conjugate is to be administered via endovenous route or intrasanal route.

22. A composition comprising, together or separately:

(i) a polypeptide comprising SEQ ID NO: 1, a functionally equivalent variant thereof or a conjugate according to any one of claims 9 to 14 and

(ii) an antitumoral agent

23. The composition according to claim 22 wherein the antitumoral agent is selected from the group consisting of a cytotoxic agent, an antiangiogenic agent and an antimetastatic agent.

24. The composition according to claim 23, wherein the antitumoral agent is selected from the group consisting of taxanes, platinum-based compounds, anthracycline antibiotics and DNA-alkylating drugs.

25. The composition according to claim 24, wherein the antitumoral agent is selected from the group consisting of paclitaxel, cisplatin, doxorubicin and temozolomide.

26. The composition according to any one of claims 22 to 25, wherein the functionally equivalent variant of SEQ ID NO: 1 is a polypeptide which results from the insertion or addition of one amino acid with respect to SEQ ID NO: 1.

27. The composition according to any one of claims 22 to 25, wherein the conjugate is selected from the group consisting of SEQ ID NO: 47 and SEQ ID NO: 48.

28. A pharmaceutical composition comprising a pharmaceutically active amount of a composition according to any one of claims 22 to 27 and a pharmaceutically acceptable excipient.

29. A composition according to any one of claims 22 to 27 for use as a medicine.

30. A composition according to any one of claims 22 to 27 for use in the prevention and/or treatment of cancer.

31. The composition for use according to claim 30, wherein the cancer is lung cancer, breast cancer or brain cancer.

32. The composition for use according to any one of claims 29 to 31 wherein the polypeptide comprising SEQ ID NO: 1, the functionally equivalent variant thereof or the conjugate is to be administered.