CLAIMS

1. A novel polypeptide or a derivative thereof, wherein the novel polypeptide is selected from any one of the following:

(1) a polypeptide with the same or substantially the same function formed by deleting 3 consecutive amino acids from a polypeptide having the amino acid sequence set forth in SEQ ID NO.1;

(2) a polypeptide with the same or substantially the same function formed by deleting 1 to 34 amino acids at N-terminus of a polypeptide having the amino acid sequence set forth in SEQ ID NO.1; and

(3) a polypeptide with the same or substantially the same function formed by substituting one or more amino acids of a polypeptide having the amino acid sequence set forth in SEQ ID NO.1, or (1), or (2).

2. The novel polypeptide or a derivative thereof according to claim 1, wherein

in said (1), a polypeptide with the same or substantially the same function formed by deleting 3 consecutive amino acids at positions 3N-2, 3N-1, and 3N from a polypeptide having the amino acid sequence set forth in SEQ ID NO.1, wherein N=1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, or 17; or

in said (2), a polypeptide with the same or substantially the same function formed by deleting 4, 9, 14, 19, 24, 29, or 34 amino acids at N-terminus of a polypeptide having the amino acid sequence set forth in SEQ ID NO.1; or

in said (3), the amino acid at position 2, 3, 8, 9, 10, 11, 12, 13, 17, 19, 20, 21, 22, 25, 27, 28, 30, 31, 32, 40, 41, 42, 43, 44, 45, 48, 49, or 50 in the amino acid sequence set forth in SEQ ID NO.1 is substituted.

3. The novel polypeptide or a derivative thereof according to claim 2, wherein the amino acid sequence of the novel polypeptide is shown as any one of SEQ ID NO.2 to SEQ ID NO.53.

4. The novel polypeptide or a derivative thereof according to claim 3, wherein the amino acid sequence of the novel polypeptide is shown as any one of SEQ ID NO.2 to SEQ ID NO.4, SEQ ID NO.6 to SEQ ID NO.10, SEQ ID NO.13, SEQ ID NO.15 to SEQ ID NO.17, SEQ ID NO.19 to SEQ ID NO.21, SEQ ID NO.26 to SEQ ID NO.51, and SEQ ID NO.53.

5. The novel polypeptide or a derivative thereof according to any one of claims 1-4, wherein the derivative comprises a derivative with the same or substantially the same function of the novel polypeptide obtained by modification.

6. The novel polypeptide or a derivative thereof according to claim 5, wherein the modification comprises one or more of N-terminus modification, C-terminus modification, side-chain modification, amino acid modification, or backbone modification.

7. The novel polypeptide or a derivative thereof according to claim 6, wherein the modification comprises one or more long-acting modification of polyethylene glycol modification, fatty acid linkage, fusion with Fc polypeptide, binding with human serum albumin, non-natural amino acid substitution, polypeptide cyclization, or high-end formulations.

8. The novel polypeptide or a derivative thereof according to claim 7, wherein the modification comprises fatty acid linkage, wherein the fatty acid linkage comprises N-terminus linkage with a 12- to 20-carbon fatty acid or linkage with a 12- to 20-carbon fatty acid using a linker.

9. The novel polypeptide or a derivative thereof according to claim 8, wherein the fatty acid linkage comprises N-terminus linkage with an 18-carbon fatty acid or linkage with an 18-carbon fatty acid using a linker, wherein the linker is a peptide less than 5 amino acids in length.

10. A pharmaceutical composition, wherein the pharmaceutical composition comprises the novel polypeptide or the derivative thereof according to any one of claims 1-9, and a pharmaceutically acceptable carrier.

11. Use of the novel polypeptide or a derivative thereof according to any one of claims 1-9 or the pharmaceutical composition according to claim 10 in the preparation of a medicament for preventing or treating tumors.

12. The use according to claim 11, wherein the tumors comprise one or more of glioma, neuroblastoma, head and neck cancer, esophageal cancer, thyroid cancer, lung cancer, liver cancer, kidney cancer, breast cancer, cervical cancer, uterine cancer, ovarian cancer, colon

cancer, small intestine cancer, ileocecal cancer, gastric cancer, bladder cancer, pancreatic cancer, prostate cancer, cholangiocarcinoma, melanoma, sarcoma, myeloma, lymphoma, and leukemia.

13. The use according to claim 12, wherein the preventing or treating tumors comprises inhibition of proliferation and/or metastasis of tumor cells.

14. The use according to claim 13, wherein the preventing or treating tumors comprises inhibition of proliferation of tumor cells, wherein the tumor cells comprise:

the tumor cells of the glioblastoma, comprising: U87-MG;

the tumor cells of the neuroblastoma, comprising: SH-SY5Y;

the tumor cells of the head and neck tumor, comprising: any one of oral epidermoid carcinoma cell KB, laryngeal epidermoid carcinoma cell HEp2, tongue squamous cell carcinoma cell CAL27, and nasopharyngeal carcinoma cell CNE-2Z;

the tumor cells of the esophageal tumor, comprising: Eca-109 and/or TE-13;

the tumor cells of the thyroid tumor, comprising: NPPA87-1;

the tumor cells of the lung tumor, comprising: any one or combination of 95-D, SK-MES-1, SPC-A1, and A549;

the tumor cells of the liver tumor, comprising: HCCLM3 and/or HepG2;

the tumor cells of the kidney tumor, comprising: Ketr-3 and/or 786-O;

the tumor cells of the breast tumor, comprising: SK-BR-3 and/or MDA-MB-231;

the tumor cells of the cervical tumor, comprising: CaSki and/or Hela;

the tumor cells of the uterine tumor, comprising: RL-952 and/or MS751;

the tumor cells of the ovarian tumor, comprising: ES-2 and/or SKOV3;

the tumor cells of the colon tumor, comprising: HT29 and/or SW480;

the tumor cells of the small intestine tumor, comprising: HIC;

the tumor cells of the ileocecal tumor, comprising: HCT-8;

the tumor cells of the gastric tumor, comprising: MGC-803 and/or BGC-823;

the tumor cells of the bladder tumor, comprising: T24 and/or EJ;

the tumor cells of the pancreatic tumor, comprising: ASPC-1 and/or PANC-1;

the tumor cells of the prostate tumor, comprising: 22RV1 and/or PC-3;

the tumor cells of the cholangiocarcinoma, comprising: QBC939;

the tumor cells of the melanoma, comprising: SK-mel-2 and/or A375;

the tumor cells of the sarcoma, comprising: MG63 and/or HT-1080;

the tumor cells of the myeloma, comprising: LP-1;

the tumor cells of the lymphoma, comprising: any one or combination of Raji, RPMI 8226, U937, and WSU-DLCL2; and

the tumor cells of the leukemia, comprising: any one or combination of CEM/C1, NB4, KG-1, K562, HL60, Jurkat, and Clone E6-1.

15. The use according to claim 13, wherein the preventing or treating tumors , comprising inhibiting metastasis of tumor cells, wherein the tumor cells comprise:

the tumor cells of the melanoma, comprising: A375;

the tumor cells of the cervical tumor, comprising: Hela;

the tumor cells of the ovarian tumor, comprising: Skvo3;

the tumor cells of the liver tumor, comprising: Hep3B; and

the tumor cells of the lung tumor, comprising: A549.