CLAIMS

1. A peptide or a derivative thereof, comprising the sequence from the N-terminus to the C-terminus as shown in Formula I, or a sequence with conservative substitutions of Formula I:

Gly-Ser-Cys-Ser-X1-X2-X3-X4-(D-Cys)-X5-X6-X7-X8 Formula I,

wherein the cysteine at position 3 and D-cysteine at position 9 form an intramolecular disulfide bond in Formula I, D-Cys represents D-cysteine, the "-" between amino acid residues represents a peptide bond, the C-terminus of the peptide or its derivative is a free carboxyl group or an amide, X1 is Thr or D-Thr, X5 is selected from any one of Ala, Val, and D-Val, and X2–X4 and X6–X8 are independently any amino acid.

2. The peptide or a derivative thereof according to claim 1, wherein X2 is selected from any one of Pro, D-Pro, and Hyp; X3 is selected from any one of Pro, D-Pro, and Hyp; X4 is selected from any one of Ser, D-Ser, Ala, and Aib; X6 is selected from any one of Ala, Leu, D-Leu, Ile, ABu, and Nle; X7 is selected from any one of Tyr, D-Tyr, Ala, Trp, Phe, and Bip; and X8 is selected from any one of Ser, D-Ser, Ala, and Orn.

3. The peptide or a derivative thereof according to claim 1 or 2, comprising any one sequence selected from the following sequences: SEQ ID NOs: 1–5, SEQ ID NOs: 10–16, and SEQ ID NOs: 20–34, or a sequence thereof having conservative substitutions; preferably, the peptide or a derivative thereof comprises any one sequence selected from the following sequences: SEQ ID NOs: 26, 28, and 32, or a sequence thereof having conservative substitutions.

4. The peptide or a derivative thereof according to any one of claims 1–3, wherein the derivative comprises one or more modifications selected from the following modifications: amino acid modifications, conservative amino acid substitutions, and substitution of hydrogen atoms in amino acid residues, as compared to the peptide.

5. A pharmaceutical composition comprising the peptide or a derivative thereof according to any one of claims 1–4, and a pharmaceutically acceptable carrier or salt.

6. Use of the peptide or a derivative thereof according to any one of claims 1–4, or the pharmaceutical composition according to claim 5, in the preparation of a medicament for treating pain.

7. The use according to claim 6, wherein the peptide or a derivative thereof is administered via subcutaneous injection, intramuscular injection, intravenous injection, intraperitoneal injection, intrathecal injection, oral administration, transdermal administration, pulmonary administration, ocular administration, or topical administration.

8. The use according to claim 6, wherein the pain comprises chemotherapy-induced pain, diabetic peripheral neuropathic pain, sciatica, osteoarticular pain, postherpetic neuralgia, infection-induced pain, nutritional deficiency-induced pain, inflammatory pain, chronic alcohol-induced pain, hypothyroidism-associated pain, autoimmune disease pain, Guillain-Barré syndrome pain, toxic pain, drug-induced pain, tumor lesion pain, genetic disorder-associated pain, or contusion pain.