CLAIMS

1. A method for destroying exosomes derived from cancer cells, comprising:

a step of preparing an antimicrobial peptide; and

a step of allowing the antimicrobial peptide to coexist with the exosome derived from cancer cells to destroy the exosome derived from cancer cells in a body fluid sample ex vivo.

2. The method for destroying exosomes derived from cancer cells according to claim 1,

wherein the step of allowing the antimicrobial peptide to coexist with the exosome derived from cancer cells comprises a step of allowing the antimicrobial peptide to coexist with a mixture of the exosome derived from cancer cells and an exosome derived from normal cells, and

the step of destroying exosomes comprises selectively destroying the exosome derived from cancer cells.

3. The method for destroying exosomes derived from cancer cells according to claim 1 or 2,

wherein the antimicrobial peptide is a peptide satisfying the following condition (1) or (2):

(1) the peptide has a chain length of 10 or more and less than 50, a net charge of more than 0 and less than 15, and a ratio of hydrophobic residues of 25% or more and less than 65% (excluding a peptide containing 3 or more S-S bonds, and containing any one of a lysine residue or a valine residue in total amino acids constituting the antimicrobial peptide);

(2) the peptide has a chain length of 2 or more and less than 10, a net charge of 0 or less, and a ratio of hydrophobic

residues of less than 25%, and satisfies the following condition (2-1) or (2-2):

(2-1) 3 or more histidine residues are contained and none of a tryptophan residue or a valine residue is contained in the total amino acids constituting the antimicrobial peptide;

(2-2) 1 or more arginine residues are contained and none of a phenylalanine residue, a tryptophan residue, or a valine residue is contained in the total amino acids constituting the antimicrobial peptide.

4. The method for destroying exosomes derived from cancer cells according to claim 3,

wherein the antimicrobial peptide is a peptide satisfying the following condition:

(Condition) the peptide has a chain length of 20 or more and less than 40, a net charge of 1 or more and less than 10, and a ratio of hydrophobic residues of 25% or more and less than 65% (excluding a peptide containing 3 or more S-S bonds, and containing any one of a lysine residue or a valine residue in total amino acids constituting the antimicrobial peptide).

5. A kit for destroying exosomes derived from cancer cells, comprising:

an antimicrobial peptide,

wherein the antimicrobial peptide is a peptide satisfying the following condition (1) or (2):

(1) the peptide has a chain length of 10 or more and less than 50, a net charge of more than 0 and less than 15, and a ratio of hydrophobic residues of 25% or more and less than 65% (excluding a peptide containing 3 or more S-S bonds, and containing any one of a lysine residue or a valine residue in total amino acids constituting the antimicrobial peptide);

(2) the peptide has a chain length of 2 or more and less than 10, a net charge of 0 or less, and a ratio of hydrophobic residues of less than 25%, and satisfies the following condition (2-1) or (2-2):

(2-1) 3 or more histidine residues are contained and none of a tryptophan residue or a valine residue is contained in the total amino acids constituting the antimicrobial peptide.

(2-2) 1 or more arginine residues are contained and none of a phenylalanine residue, a tryptophan residue, or a valine residue is contained in the total amino acids constituting the antimicrobial peptide.

6. The kit for destroying exosomes derived from cancer cells according to claim 5, further comprising an RNase inhibitor.

7. A method for isolating exosomes derived from normal cells, comprising:

a step of allowing an antimicrobial peptide satisfying the following condition (1) or (2) to coexist with an exosome,

wherein the exosome is a mixture of an exosome derived from cancer cells and an exosome derived from normal cells:

(1) the peptide has a chain length of 10 or more and less than 50, a net charge of more than 0 and less than 15, and a ratio of hydrophobic residues of 25% or more and less than 65% (excluding a peptide containing 3 or more S-S bonds, and containing any one of a lysine residue or a valine residue in total amino acids constituting the antimicrobial peptide);

(2) the peptide has a chain length of 2 or more and less than 10, a net charge of 0 or less, and a ratio of hydrophobic residues of less than 25%, and satisfies the following condition (2-1) or (2-2):

(2-1) 3 or more histidine residues are contained

and none of a tryptophan residue or a valine residue is contained in the total amino acids constituting the antimicrobial peptide;

(2-2) 1 or more arginine residues are contained and none of a phenylalanine residue, a tryptophan residue, or a valine residue is contained in the total amino acids constituting the antimicrobial peptide.

8. The method for isolating exosomes derived from normal cells according to claim 7,

wherein the step of allowing coexistence comprises a step of destroying the exosome derived from cancer cells,

the method further comprising a step of adsorptive removal of a destruction residue of the exosome derived from cancer cells after the step of allowing coexistence.