CLAIMS

1. ~~(Amended)~~ A vesicle comprising fine metal particles, which has a membrane formed from both a first polymer of (a) or (b) shown below and a second polymer of (c) or (d) shown below (with the proviso that a combination of (b) and (d) is excepted), wherein partial crosslinking occurs between a cationic segment in the first polymer and an anionic segment in the second polymer, and wherein the fine metal particles are located in the membrane of the vesicle:

First polymer:

(a) a block copolymer (I) having both an electrically non-charged hydrophilic segment and a cationic segment

(b) an amino acid polymer (I) having a cationic segment

Second polymer:

(c) a block copolymer (II) having both an electrically non-charged hydrophilic segment and an anionic segment

(d) an amino acid polymer (II) having an anionic segment.

~~2. (Canceled)~~

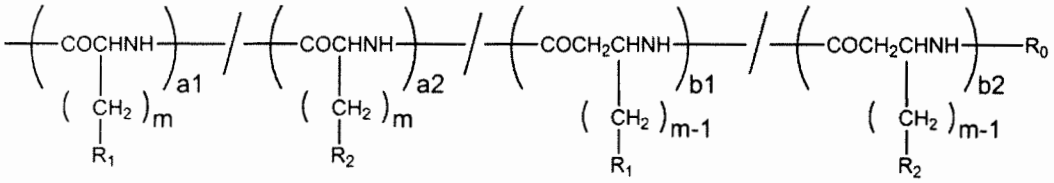
2~~3~~. ~~(Amended)~~ The vesicle according to claim 1, wherein the membrane has a three-layer structure consisting of an outer layer, an intermediate layer and an inner layer, wherein the outer layer and the inner layer are each composed of the electrically non-charged hydrophilic segment and the intermediate layer is composed of the cationic segment and the anionic segment.

3~~4~~. ~~(Amended)~~ The vesicle according to claim 1 or 2~~3~~, wherein the electrically non-charged hydrophilic segment is polyethylene glycol.

45. ~~(Amended)~~ The vesicle according to any one of claims 1 to~~or~~ 3 ~~or 4~~, wherein the metal in the fine metal particles is one or more selected from the group consisting of gold, silver, platinum, copper, nickel, palladium, iridium and rhodium.

56. ~~(Amended)~~ The vesicle according to any one of claims 1 to~~or 3 or~~ 4 ~~or 5~~, wherein the fine metal particles have a spherical or rod shape.

67. ~~(Amended)~~ The vesicle according to any one of claims 1 to~~or 3 or 4 or~~ 5 ~~or 6~~, wherein the cationic segment is represented by the following formula (1):

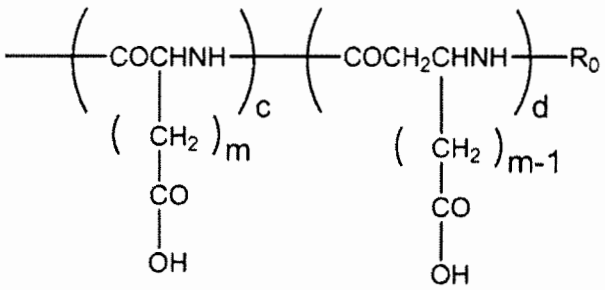


(1)

[wherein R_0 represents a hydrogen atom, an acetyl group, a trifluoroacetyl group, an acryloyl group or a methacryloyl group, R_1 and R_2 each independently represent $-(CH_2)_3NH_2$ or $-CONH(CH_2)_S-X$, wherein s is an integer of 0 to 20 and X is $-NH_2$, a pyridyl group, a morpholyl group, a 1-imidazolyl group, a piperazinyl group, a 4-(C_{1-6} alkyl)-piperazinyl group, a 4-(amino C_{1-6} alkyl)-piperazinyl group, a pyrrolidin-1-yl group, a N-methyl-N-phenylamino group, a piperidinyl group, a guanidino group, a diisopropylamino group, a dimethylamino group, a diethylamino group, $-(CH_2)_tNH_2$ or $-(NR_9(CH_2)_o)_pNHR_{10}$, wherein R_9 represents a hydrogen atom or a methyl group, R_{10} represents a hydrogen atom, an acetyl group, a trifluoroacetyl group, a benzyloxycarbonyl group, $-C(=NH)-NH_2$ or a tert-butoxycarbonyl group, o is an integer of 1 to 15, p is an integer of 1 to 5, t is an integer of 0 to 15, m is 1 or 2, a1 and a2 are each an integer of 0 to 5000, b1 and b2 are each an integer of 0 to 5000, and a1+a2+b1+b2 is 2 to 5000, and the symbol "/" means that the individual monomer units are sequenced in any order].

78. The vesicle according to claim 67, wherein X is -NH_2 or a guanidino group, s is an integer of 2 to 8, o is an integer of 1 to 10, R_0 is a hydrogen atom, a1 and a2 are each an integer of 0 to 200, b1 and b2 are each an integer of 0 to 200, and a1+a2+b1+b2 is 10 to 200.

89. (Amended) The vesicle according to any one of claims 1 to 7 or 8, wherein the anionic segment is represented by the following formula (2):

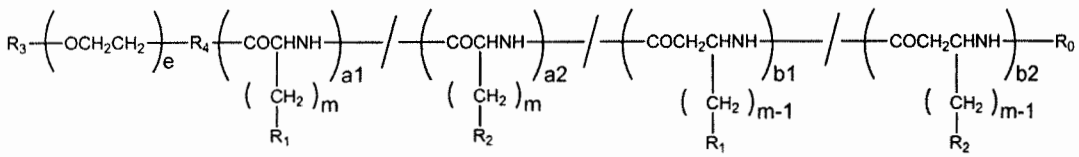


(2)

[wherein R_0 represents a hydrogen atom, an acetyl group, a trifluoroacetyl group, an acryloyl group or a methacryloyl group, m is 1 or 2, c and d are each an integer of 0 to 5000, and c+d is 2 to 5000].

910. The vesicle according to claim 89, wherein R_0 is a hydrogen atom, c and d are each an integer of 0 to 200, and c+d is 10 to 200.

1011. (Amended) The vesicle comprising fine metal particles according to any one of claims 1 to 5, wherein the block copolymer (I) is represented by the following formula (3):



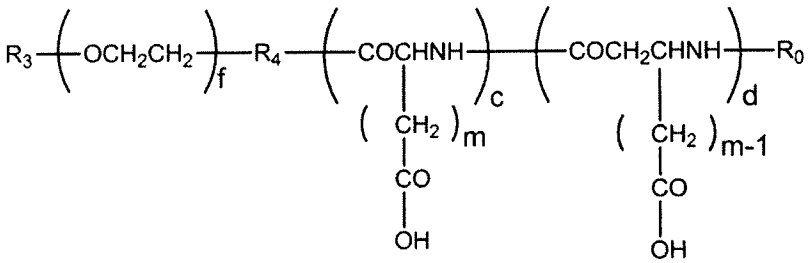
(3)

[wherein R_0 represents a hydrogen atom, an acetyl group, a trifluoroacetyl group, an acryloyl group or a methacryloyl group, R_1 and R_2 each independently represent -

$(CH_2)_3NH_2$ or $-CONH(CH_2)_S-X$, wherein s is an integer of 0 to 20 and X is $-NH_2$, a pyridyl group, a morpholyl group, a 1-imidazolyl group, a piperazinyl group, a 4-(C_{1-6} alkyl)-piperazinyl group, a 4-(amino C_{1-6} alkyl)-piperazinyl group, a pyrrolidin-1-yl group, a N-methyl-N-phenylamino group, a piperidinyl group, a guanidino group, a diisopropylamino group, a dimethylamino group, a diethylamino group, $-(CH_2)_tNH_2$ or $-(NR_9(CH_2)_o)_pNHR_{10}$, wherein R_9 represents a hydrogen atom or a methyl group, R_{10} represents a hydrogen atom, an acetyl group, a trifluoroacetyl group, a benzyloxycarbonyl group, $-C(=NH)-NH_2$ or a tert-butoxycarbonyl group, o is an integer of 1 to 15, p is an integer of 1 to 5, t is an integer of 0 to 15, R_3 represents a hydrogen atom or an optionally substituted linear or branched C_{1-12} alkyl group, R_4 represents $-(CH_2)_gNH-$ and g is an integer of 0 to 5, e is an integer of 5 to 2500, m is 1 or 2, a1 and a2 are each an integer of 0 to 5000, b1 and b2 are each an integer of 0 to 5000, and a1+a2+b1+b2 is 2 to 5000, and the symbol "/" means that the individual monomer units are sequenced in any order].

11~~12~~. The vesicle according to claim 10~~11~~, wherein X is $-NH_2$ or a guanidino group, s is an integer of 2 to 8, o is an integer of 1 to 10, R_0 is a hydrogen atom, R_3 is a methyl group, a1 and a2 are each an integer of 0 to 200, b1 and b2 are each an integer of 0 to 200, and a1+a2+b1+b2 is 10 to 200, and e is an integer of 10 to 300.

12~~13~~. ~~(Amended)~~ The vesicle according to any one of claims 1 to~~or 3 or 4 or 5 or 6 or~~ 7~~ or 8~~, wherein the block copolymer (II) is represented by the following formula (4):



(4)

[wherein R_0 represents a hydrogen atom, an acetyl group, a trifluoroacetyl group, an acryloyl group or a methacryloyl group, R_3 represents a hydrogen atom or an optionally substituted linear or branched $C_{1\text{-}12}$ alkyl group, R_4 represents $-(CH_2)_gNH-$ and g is an integer of 0 to 5, f is an integer of 5 to 2500, m is 1 or 2, c and d are each an integer of 0 to 5000, and c+d is 2 to 5000].

13~~14~~. The vesicle comprising fine metal particles according to claim 12~~13~~, wherein R_0 is a hydrogen atom, R_3 is a methyl group, c and d are each an integer of 0 to 200, and c+d is 10 to 200, and f is an integer of 10 to 300.