[SOLUTION TO PROBLEM]

[009a]

In one aspect, the present disclosure refers to a method of culturing a marine and/or euryhaline microalgae, using a composition comprising a medium obtained from culturing of animal cells using a medium used for culturing animal cells, as a culture medium, wherein the medium used for culturing animal cells comprises amino acids, and wherein a phosphorus concentration in the composition is 0.02 mM or greater.

[009b]

In another aspect, the present disclosure refers to a recycling culture method for microalgae and animal cells, comprising (1) a step of collecting the microalgae cultured by the method according to any one of claims 1 to 5, (2) a step of decomposing the microalgae to obtain an algae extract, and (3) a step of culturing animal cells using a medium containing the algae extract.

[009c]

In another aspect, the present disclosure refers to a composition for culturing of a marine and/or euryhaline microalgae comprising a medium obtained from culturing of animal cells using a medium used for culturing animal cells, wherein the medium used for culturing animal cells comprises amino acids, and wherein a phosphorus concentration in the composition is 0.02 mM or greater.

[0010]

While the use of microalgae has been previously reported for a variety of purposes, the use of microalgae for treatment of media used in animal cell culturing has not been known. The present inventors have conducted much ardent research and have created this invention upon finding that waste media produced by culturing of animal cells can be used for culturing of microalgae. Specifically, the invention encompasses the following.

[0011]

[1] A method of culturing an algae, using a composition comprising a medium produced by culturing of animal cells as a culture medium.

[2] The method according to [1] above, wherein the animal cells are cells of a vertebrate.

[3] The method according to [1] or [2] above, wherein the animal cells are muscle or liver cells.

[4] The method according to any one of [1] to [3] above, wherein the algae are microalgae.

[5] The method according to any one of [1] to [4] above, wherein the algae are marine and/or euryhaline microalgae.

[6] The method according to any one of [1] to [5] above, wherein the algae are

Chlorococcum littorale or *Synechococcus sp.*

[7] The method according to any one of [1] to [6] above, wherein the osmotic pressure of the composition is adjusted to an osmotic pressure equivalent to or in a range of ±10% of the osmotic pressure of standard medium for culturing of algae, as necessary.

[8] The method according to any one of [1] to [7] above, wherein an inorganic salt is further added to the composition.

[9] The method according to [8] above, wherein the inorganic salt is one or more selected from the group consisting of sodium salts, potassium salts, magnesium salts and calcium salts.

[10] The method according to any one of [1] to [9] above, wherein the ammonia concentration in the composition is 0.5 mM or greater.

[11] A recycling culture method for algae and animal cells, comprising:

(1) a step of collecting the algae cultured by the method according to any one of [1] to [10] above,

(2) a step of decomposing the algae to obtain an algae extract, and

(3) a step of using the medium containing the algae extract for culturing of animal cells.

[12] The method according to [11] above, wherein the method according to any one of [1] to [10] above is further carried out after step (3).

[0012]