SPECIFICATION

TITLE OF THE INVENTION: METHOD FOR CULTURING MUSCLE-DERIVED CELLS AND CULTURE APPARATUS CONTAINING MUSCLE-DERIVED CELLS

[Cross-Reference to Related Literature]

[0001]

The present application claims priority based on Japanese Patent Application No. 2023-001378 filed on January 6, 2023, which is incorporated by reference herein.

[Technical Field]

[0002]

The present invention relates to a method for culturing muscle-derived cells and to a culture apparatus containing muscle-derived cells.

[Background Art**]**

[0003]

Conventionally, standard culture media for culturing muscle cells have been DMEM or RPMI-1640 containing 10% to 20% serum (for example, Scientific Reports volume 12, Article number: 827 (2022)).

[Summary of the Invention]

In one aspect, the present disclosure refers to a cell culture method comprising the step of co-culturing muscle-derived cells and at least one type of cells selected from the group consisting of skin-derived cells, intestine-derived cells, heart-derived cells, brain-derived cells, stomach-derived cells, embryonic membrane-derived cells, liver-derived cells, kidney-derived cells, and lung-derived cells.

In one aspect, the present disclosure refers to a cell culture method comprising the step of circulating a culture medium between a first culture container and a second culture container in a culture apparatus, the first culture container and the second culture container being connected, the first culture container comprising muscle-derived cells, the second culture container comprising at least one type of cells selected from the group consisting of skin-derived cells, intestine-derived cells, heart-derived cells, brain-derived cells, stomach-derived cells, embryonic membrane-derived cells, liver-derived cells, kidney-derived cells, and lung-derived cells.

In one aspect, the present disclosure refers to a cell culture apparatus comprising a first culture container and a second culture container, the first culture container and the second culture container being connected so that a culture medium is circulated between the first

culture container and the second culture container, the first culture container comprising muscle-derived cells, the second culture container comprising at least one type of cells selected from the group consisting of skin-derived cells, intestine-derived cells, heart-derived cells, brain-derived cells, stomach-derived cells, embryonic membrane-derived cells, liver-derived cells, kidney-derived cells, and lung-derived cells.

In one aspect, the present disclosure refers to a culture system for co-culturing muscle-derived cells and at least one type of cells selected from the group consisting of skin-derived cells, intestine-derived cells, heart-derived cells, brain-derived cells, stomach-derived cells, embryonic membrane-derived cells, liver-derived cells, kidney-derived cells, and lung-derived cells.

In one aspect, the present disclosure refers to a cell culture method comprising the step of culturing muscle-derived cells in the presence of a culture supernatant obtained by culturing at least one type of cells selected from the group consisting of skin-derived cells, intestine-derived cells, heart-derived cells, brain-derived cells, stomach-derived cells, embryonic membrane-derived cells, liver-derived cells, kidney-derived cells, and lung-derived cells.

In one aspect, the present disclosure refers to a culture system for culturing muscle-derived cells in the presence of a culture supernatant obtained by culturing at least one type of cells selected from the group consisting of skin-derived cells, intestine-derived cells, heart-derived cells, brain-derived cells, stomach-derived cells, embryonic membrane-derived cells, liver-derived cells, kidney-derived cells, and lung-derived cells.

[Problems to be Solved by the Invention]

[0004]

The present invention aims to provide a method for culturing muscle-derived cells and a culture apparatus containing muscle-derived cells.

[Means for Solving the Problems]

[0005]

An aspect of the present invention is a cell culture method comprising the step of co-culturing muscle-derived cells and at least one type of cells selected from the group consisting of skin-derived cells, intestine-derived cells, heart-derived cells, brain-derived cells, stomach-derived cells, embryonic membrane-derived cells, liver-derived cells, kidney-derived cells, and lung-derived cells.

[0006]

Another aspect of the present invention is a cell culture method comprising the step of circulating a culture medium between a first culture and a second culture container in a culture apparatus, the first culture container and the second culture container being connected, the first culture container comprising muscle-derived cells and the second culture container comprising