SUMMARY

[0005a] In one aspect, the present disclosure refers to a method of deriving hepatic macrophages from induced pluripotent stem cells, comprising: (a) culturing induced pluripotent stem cells to obtain monocytes; and (b) culturing the monocytes from (a) in a hepatic macrophage culture medium, wherein the hepatic macrophage culture medium comprises a conditioned medium and a basal medium, wherein the conditioned medium is obtained by a method comprising: (i) culturing hepatocytes in a serum-free cell culture medium in the presence of an extracellular matrix for 1 to 7 days; and (ii) isolating the supernatant at the end of the culturing process in (i). In another aspect, the present disclosure refers to a method of deriving hepatic macrophages from induced pluripotent stem cells, comprising: (a) culturing the induced pluripotent stem cells to obtain monocytes; and (b) culturing the monocytes from (a) in a hepatic macrophage culture medium in the absence of an extracellular matrix, wherein the hepatic macrophage culture medium comprises a conditioned medium and a basal medium, and wherein the conditioned medium is obtained by a method comprising: (i) culturing hepatocytes in a serum-free cell culture medium in the presence of an extracellular matrix for 1 to 7 days; and (ii) isolating the supernatant at the end of the culturing process in (i). ~~In yet another aspect, the present disclosure refers to a kit for deriving hepatic macrophages from monocytes, comprising a cell culture device not coated using extracellular matrix, a conditioned medium and a basal medium, wherein the conditioned medium is obtained by a method comprising: (i) culturing hepatocytes in a serum-free cell culture medium in the presence of an extracellular matrix for 1 to 7 days and (ii) isolating the supernatant at the end of the culturing process in (i).~~

[0006] In one example, there is provided a method of deriving hepatic macrophages from monocytes, comprising culturing the monocytes in a hepatic macrophage culture medium, wherein the hepatic macrophage culture medium comprises a conditioned medium and a basal medium, wherein the conditioned medium is obtained by a method comprising: (a) culturing hepatocytes in a serum-free cell culture medium in the presence of an extracellular matrix for 1 to 7 days; and (b) isolating the supernatant at the end of the culturing process in (a).

[0007] In another example, there is provided a method of deriving hepatic macrophages from pluripotent stem cells, comprising: (a) culturing pluripotent stem cells to obtain monocytes; and (b) culturing the monocytes from (a) in a hepatic macrophage culture medium, wherein the hepatic macrophage culture medium comprises a conditioned medium and a basal medium, wherein the conditioned medium is obtained by a method comprising: (i) culturing hepatocytes in a serum-free cell culture medium in the presence of an extracellular

CLAIMS

1. A method of deriving hepatic macrophages from induced pluripotent stem cells, comprising:

(a) culturing induced pluripotent stem cells to obtain monocytes; and

(b) culturing the monocytes from (a) in a hepatic macrophage culture medium, wherein the hepatic macrophage culture medium comprises a conditioned medium and a basal medium, wherein the conditioned medium is obtained by a method comprising:

(i) culturing hepatocytes in a serum-free cell culture medium in the presence of an extracellular matrix for 1 to 7 days; and

(ii) isolating the supernatant at the end of the culturing process in (i).

2. The method of claim 1, wherein culturing induced pluripotent stem cells further comprises:

(i) culturing induced pluripotent stem cells to obtain embryoid bodies; and

(ii) differentiating embryoid bodies to obtain monocytes.

3. The method of any of the preceding claims, wherein the basal medium is a low serum basal medium.

4. The method of any of the preceding claims, wherein culturing the monocytes in a hepatic macrophage culture medium comprises culturing the monocytes in the hepatic macrophage culture medium in the absence of an extracellular matrix.

5. The method of any of the preceding claims, wherein the ratio of the conditioned medium and the basal medium is in the range of 10:1 to 1:10.

6. The method of any of the preceding claims, wherein the ratio of the conditioned medium and the basal medium is 1:1.

7. The method of any one of claims 3 to 6, wherein the serum level in the low serum basal medium is at a percentage of 0.1% to 10%.

8. A method of deriving hepatic macrophages from induced pluripotent stem cells, comprising:
(a) culturing the induced pluripotent stem cells to obtain monocytes; and
(b) culturing the monocytes from (a) in a hepatic macrophage culture medium in the absence of an extracellular matrix, wherein the hepatic macrophage culture medium comprises a conditioned medium and a basal medium, and wherein the conditioned medium is obtained by a method comprising:
(i) culturing hepatocytes in a serum-free cell culture medium in the presence of an extracellular matrix for 1 to 7 days; and
(ii) isolating the supernatant at the end of the culturing process in (i).

~~9. A kit for deriving hepatic macrophages from monocytes, comprising a cell culture device not coated using extracellular matrix, a conditioned medium and a basal medium, wherein the conditioned medium is obtained by a method comprising:~~
~~(i) culturing hepatocytes in a serum-free cell culture medium in the presence of an extracellular matrix for 1 to 7 days and~~
~~(ii) isolating the supernatant at the end of the culturing process in (i).~~

~~10. The kit of claim 9, wherein the basal medium is adapted to be used as a low serum basal medium.~~

~~11. The kit of any one of claims 9 to 10, further comprising one or more of the following supplements for the basal medium: insulin, transferrin, selenous acid, albumin, fatty acids, glutamine supplements and buffering agent.~~