CLAIMS

1. A cell culture plate comprising:

at least two sequentially arranged wells;

and a channel adapted for fluid communication between the wells, wherein a portion of the channel comprises a fluid transmission channel adapted to communicate fluid towards or away from a first pump and another portion of the channel comprises a well communication channel adapted to communicate fluid to each of the at least two sequentially arranged wells via openings in the wall of the well communication channel;

wherein the channel is connected or coupled to the first pump via openings at each end of the channel, and wherein the first pump is operable to circulate fluid between the at least two wells.

2. The cell culture plate according to claim 1, wherein the channel is 3 millimetres or less in diameter.

3. The cell culture plate according to claim 1, wherein the channel is a microfluidic channel.

4. The cell culture plate according to any of the preceding claims, wherein the pump is a peristaltic pump, suitably, wherein the peristaltic pump comprises a stepper motor or a brushless motor comprising an encoder.

5. The cell culture plate according to any of the preceding claims, wherein the channel is further configured to communicate fluid out of the cell culture plate.

6. The cell culture plate according to claim 5, wherein the channel is connected or coupled to a second pump, wherein said second pump is operable to communicate fluid out of the cell culture plate.

7. The cell culture plate according to any of the preceding claims, wherein the motor of the first pump and/or the second pump is housed in a waterproof box.

8. The cell culture plate according to any of the preceding claims, wherein the cell culture plate is fitted with a lid.

9. The cell culture plate according to any of the preceding claims, wherein the cell culture plate is housed in an incubator and/or wherein the cell culture plate is manufactured from polyether ether ketone (PEEK).

10. The cell culture plate according to any of the preceding claims, wherein the channel is in fluid communication with a plate comprising one or more reservoirs capable of holding a fluid.

11. The cell culture plate according to any of the preceding claims, wherein each well has a circular diameter of between about 6 mm and about 16 mm.

12. A cell culture device comprising the cell culture plate according to any of claims 1 to 11 housed inside an incubator.

13. A method for circulating a fluid between two or more sequentially arranged wells comprising:

(a) providing the cell culture plate according to any of claims 1 to 11 or the cell culture device according to claim 12;

(b) contacting the at least two wells with fluid; and

(c) circulating the fluid through the wells of the cell culture plate.

14. A method for determining the effect of an agent on a cell comprising the steps of:

(a) providing the cell culture plate according to any of claims 1 to 11 or the cell culture device according to claim 12;

(b) contacting the at least two wells of the cell culture plate with cells and cell culture medium;

(c) circulating the cell culture medium through the wells of the cell culture plate;

(d) exposing the wells of the cell culture plate to at least one agent;

(e) removing and testing a sample of cell culture medium from the sequentially arranged wells; and

(f) determining the effect of the agent on the cells before and after exposure to the at least one agent.

15. A cell fluid exposure sampling device comprising:

(a) the cell culture plate according to any of claims 6 to 11; and

(b) a sample plate comprising one or more wells for storing a plurality of samples,

wherein said second pump is operable to communicate fluid from the cell culture plate towards the sample plate.

16. The cell fluid exposure sampling device according to claim 15, wherein the fluid is communicated to the sample plate using a multiple pipettor.

17. A method for sampling cell culture medium exposed to one or more agents comprising the steps of:

(a) providing the cell fluid exposure sampling device according to claim 15 or claim 16;

(b) contacting at least two of the wells with cell culture medium comprising cells;

(c) circulating the cell culture medium through the wells of the cell culture plate;

(d) exposing the wells of the cell culture plate to at least one agent; and

(e) sampling the cell culture medium from the cell culture plate, optionally wherein the cell culture medium is sampled one or more times in real time during exposure to the agent.