CLAIMS

1. A method comprising:

(a) providing

(i) one or more organoids comprising cells, and

(ii) a microfluidic device, the device comprising a growth chamber, in which the growth chamber comprises a hydrogel mixed with other agents or formulations to induce cell colonization in the cell growth chamber;

(b) placing the one or more organoids in the growth chamber, thereby inducing the cells of the one or more organoids to colonize the growth chamber.

2. A method according to Claim 1, in which the growth chamber comprises a channel.

3. A method according to Claim 1, in which the organoids comprise bone marrow organoids.

4. A method according to Claim 3, further comprising contacting the bone marrow organoids with at least one of demineralized bone powder and bone morphogenic protein (BMP).

5. A method according to Claim 1, further comprising providing perfusion fluid.

6. A method according to Claim 5, in which providing a perfusion fluid comprises connecting the microfluidic device to a microfluidic system.

7. A method according to Claim 1, in which the microfluidic device comprises a porous separation component.

8. A method according to Claim 6, in which the microfluidic device comprises at least one inlet port and at least one outlet port connecting to the microfluidic system.

9. A method according to Claim 1, in which the growth chamber comprises a gel comprising one or more agents that induce the cells to colonize the growth chamber.