CLAIMS

1. A system for producing a compound, comprising:

a plurality of chambers, wherein each chamber is configured to receive at least one reagent for producing the compound;

at least one robotic arm configured to load each chamber with the at least one reagent; and

at least one computer processor operatively coupled to the plurality of chambers and the at least one robotic arm, wherein the at least one computer processor is programmable to control the at least one robotic arm to:

a. fill a first chamber with the at least one reagent;

b. fill a second chamber after a time interval X with the at least one reagent; and

c. repeat step (b) until at least a portion of the plurality of chambers is filled with the at least one reagent,

d. after a time interval Y, when the compound is produced, remove from each of the portion of the plurality of chambers in step (c);

wherein the at least one computer processor is further programmable for at least a portion of the plurality of chambers to control the at least one robotic arm to re-fill and, after the compound is again produced, remove the compound as in steps (a)-(c), thereby for a time period of at least 2Y continuously producing the compound within at least a portion of the plurality of chambers.

2. The system of claim 1, wherein the plurality of chambers is housed in a cartridge.

3. The system of claim 2, wherein a number of the plurality of chambers is at least the time interval Y divided by the time interval X.

4. The system of claim 1, in (d), wherein the compound is removed by the at least one robotic arm.

5. The system of claim 1, in (d), wherein the compound is removed by a pressurized system.

6. The system of claim 1, wherein the computer processor is configured to conduct an in vitro transcription (IVT) reaction.

7. The system of claim 1, wherein the computer processor is configured to conduct an in vitro translation.

8. The system of any one of claims 1-7, wherein the chamber is configured to monitor and/or regulate a pH value of a medium comprising the at least one reagent.

9. The system of any one of claims 1-7, wherein the chamber is configured to monitor and/or regulate a temperature of a medium comprising the at least one reagent or an atmosphere within the chamber.

10. The system of any one of claims 1-7, wherein each chamber comprises an agitation device.

11. The system of any one of claim 1-7, wherein the chamber comprises a lid and the system is configured to shake the plurality of chambers to mix the at least one reagent.

12. The system of any one of claims 1-11, wherein the system further comprises at least one intermediate storage vessel.

13. The system of claim 1, wherein the system comprises a purification system.

14. A method for producing a compound, comprising:
(i) providing a plurality of chambers,
(ii) filling a first chamber with a medium, wherein the medium comprises at least one reagent;
(iii) filling a further chamber after a time interval X with the medium;
(iv) repeating step (iii) until at least a portion of the plurality of chambers is filled with the medium; and
(v) producing and removing the compound after a time interval Y from each of the portion of the plurality of chambers in step (iv), thereby for a time period of at least 2Y continuously producing the compound within the at least a portion of the plurality of chambers.

15. The method of claim 14, further comprising rinsing or washing each chamber subsequent to the removing step thereof .

16. The method of claim 14, wherein said filling steps are performed by at least one robotic arm.

17. The method of claim 14, wherein the time interval Y is at least the time interval X times the number of the plurality of chambers.

18. The method of any of claims 14-17, further comprising filling the first chamber with a first medium comprising a first reagent and the further chamber with a second medium comprising a second reagent.

19. The method of any of claims 14-18, further comprising purifying the compound.

20. The method of any of the claims 14-18, wherein said compound is a nucleotide, preferably RNA or DNA.