WHAT IS CLAIMED IS:

1. A device for facilitating delivery of a payload to cells of a cell suspension, the device comprising:

a container comprising an interior cavity and an opening; and

a cartridge configured to connect to the opening of the container when in an assembled position with respect to the container, the cartridge comprising:

an input reservoir configured to receive a cell suspension; and

a receiving portion configured to receive a constriction-containing element, wherein the constriction-containing element comprises a constriction configured to perturb membranes of cells of the cell suspension to facilitate delivery of a payload to the cells, wherein the receiving portion is fluidly connected to the input reservoir to allow flow of the cell suspension from the input reservoir to the receiving portion, and wherein the receiving portion is directly fluidly connected to a cartridge outlet port to allow flow of the cell suspension from the receiving portion into the interior cavity of the container.

2. A device for facilitating delivery of a payload to cells of a cell suspension, the device comprising:

a container comprising an interior cavity and an opening;

a cartridge configured to connect to the opening of the container when in an assembled position with respect to the container, the cartridge comprising:

an input reservoir configured to receive a cell suspension; and

a receiving portion; and

a constriction-containing element, wherein the constriction-containing element comprises a constriction configured to perturb membranes of cells of the cell suspension to facilitate delivery of a payload to the cells;

wherein the receiving portion of the cartridge is fluidly connected to the input reservoir and to the constriction-containing element, such that the cell suspension is allowed to flow from the input reservoir through the receiving portion and into the constriction-containing element, and such that the cell suspension is allowed to flow out of the constriction-containing element through the receiving portion and into the interior cavity of the container.

3. The device of claim 2, further comprising a gasket disposed between the receiving portion and the constriction-containing element.

4. The device of claim 2 or 3, wherein the constriction-containing element comprises a microfluidic chip comprising a plurality of constrictions that perturb the membranes of the cells.

5. The device of any one of claims 1 to 4, wherein, a) when the cartridge is in the assembled position with respect to the container, a portion of the receiving portion of the cartridge is disposed inside the interior cavity of the container, and/or b) when the cartridge is in the assembled position with respect to the container, a portion of the input reservoir of the cartridge is disposed inside the interior cavity of the container.

6. The device of any one of claims 1 to 5, wherein the cartridge further comprises a cover configured to releasably attach to the receiving portion of the cartridge to hold the constriction-containing element in place when the constriction-containing element is received by the receiving portion.

7. The device of claim 6, wherein the cover is configured to slidably attach and detach to the receiving portion of the cartridge.

8. The device of claim 6 or 7, wherein the cover is configured such that, when the cartridge is in the assembled position with respect to the container, the cover is prevented by an interior wall of the container from detaching from the receiving portion.

9. The device of any one of claims 1 to 8, wherein the cartridge comprises an input reservoir cover that is movable between an open position and a closed position to selectively expose and enclose an interior of the input reservoir.

10. The device of claim 9, wherein the cartridge comprises a) a first o-ring disposed against a surface of the input reservoir cover that faces away from the interior of the input reservoir

when the input reservoir cover is in the closed position, and/or b) a second o-ring disposed between the input reservoir cover and a body portion of the cartridge.

11. The device of claim 9 or 10 wherein the input reservoir cover comprises a filter configured to prevent backflow of the cell suspension.

12. A cartridge for facilitating delivery of a payload to cells of a cell suspension, the cartridge comprising:

an input reservoir configured to receive a cell suspension;

a connection portion configured to connect to an opening to an interior cavity of a container; and

a receiving portion configured to receive a constriction-containing element, wherein the constriction-containing element comprises a constriction configured to perturb membranes of cells of the cell suspension to facilitate delivery of a payload to the cells, wherein the receiving portion is fluidly connected to the input reservoir to allow flow of the cell suspension from the input reservoir to the receiving portion, and wherein the receiving portion is fluidly connected to a cartridge outlet port to allow flow of the cell suspension out of the cartridge.

13. The cartridge of claim 12, wherein, a) when the cartridge is connected in an assembled position with respect to the container, a portion of the receiving portion of the cartridge is disposed inside the interior cavity of the container, and/or b) when the cartridge is in the assembled position with respect to the container, a portion of the input reservoir of the cartridge is disposed inside the interior cavity of the container.

14. The cartridge of claim 12 or 13, wherein the cartridge further comprises a cover configured to releasably attach to the receiving portion of the cartridge to hold the constriction-containing element in place when the constriction-containing element is received by the receiving portion.

15. The cartridge of claim 14, wherein the cover is configured to slidably attach and detach to the receiving portion of the cartridge.

16. The cartridge of claim 14 or 15, wherein the cover is configured such that, when the cartridge is connected in an assembled position with respect to the container, the cover is prevented by an interior wall of the container from detaching from the receiving portion.

17. The cartridge of any one of claims 12 to 16, wherein the cartridge comprises an input reservoir cover that is movable between an open position and a closed position to selectively expose and enclose an interior of the input reservoir.

18. The cartridge of claim 17, wherein the cartridge comprises a) a first o-ring disposed against a surface of the input reservoir cover that faces away from the interior of the input reservoir when the input reservoir cover is in the closed position, and/or b) a second o-ring disposed between the input reservoir cover and a body portion of the cartridge.

19. The cartridge of claim 17 or 18 wherein the input reservoir cover comprises a filter configured to prevent backflow of the cell suspension.

20. The cartridge of any one of claims 12 to 19, wherein the cartridge is configured to allow flow of the cell suspension through the cartridge at a pressure of greater than 100 PSI and/or less than 200 PSI.