What is claimed is:

1. A liquid-tight case comprising:

a housing configured to enclose a tissue device within, wherein the tissue device comprises a first channel network and a second channel network in fluidic communication with the first channel network;

a first inlet port or coupled with the housing, and configured to be in fluidic communication with the first channel network of the tissue device;

a second inlet port coupled with the housing, and configured to be in fluidic communication with the second channel network of the tissue device; and

at least one outlet port coupled with the housing.

2. A liquid-tight case comprising:

a housing configured to enclose a tissue device within;

a first inlet port coupled with the housing, and configured to receive a first plurality of viable cells and pass the first plurality of viable cells to the tissue device;

a second inlet port coupled with the housing, and configured to receive a second plurality of viable cells and pass the second plurality of viable cells to the tissue device; and

at least one outlet port coupled with the housing.

3. The liquid-tight case of claim 2, wherein the tissue device comprises:

a first channel network in fluidic communication with the first inlet port of the liquid-tight case to receive the first plurality of viable cells; and

a second channel network in fluidic communication with the second inlet port of the liquid-tight case to receive the second plurality of viable cells,

wherein the first and second channel networks are in fluidic communication with each other.

4. The liquid-tight case of any one of the preceding claims, wherein the tissue device is a device stimulates an arterial blood flow.

5. The liquid-tight case of claim 4, wherein the tissue device is a liver device.

6. The liquid-tight case of any one of claims 1 to 3, wherein the at least one outlet port comprises a first outlet port in fluidic communication with the first inlet port through the tissue device.

7. The liquid-tight case of any one of claims 1 to 3, wherein the housing comprises:
a base formed with a hollow space configured to house the tissue device;
a lid coupled with the base to enclose the tissue device within the hollow space; and
a seal disposed between the base and the lid to enhance sealing of the liquid-tight case.

8. The liquid-tight case of claim 7, wherein the lid is coupled with the bases by one or more fasteners, snap-fitting, press-fitting, one or more adhesives, tape, or a combination thereof.

9. The liquid-tight case of claim 7, wherein the seal is made of an elastomeric material.

10. The liquid-tight case of claim 7, wherein the seal is an O-ring.

11. The liquid-tight case of claim 10, wherein the base comprises a rim and a groove formed along the rim to accommodate the seal.

12. The liquid-tight case of claim 7, wherein the first inlet port, second inlet port and at least one outlet port are coupled with the lid or base.

13. The liquid-tight case of claim 12, wherein the first inlet port, the second inlet port, or each of the first and second inlet ports comprises a barbed outer connector coupled with an exterior side of the lid or base to facilitate tubing.

14. The liquid-tight case of claim 12, wherein:
the at least one outlet port comprises a first outlet port; and
the base of the housing is monolithically formed with a sheath configured to allow tubing of the first outlet port to pass through and be connected directly to the tissue device.

15. The liquid-tight case of claim 12, wherein the first and second inlet ports are coupled with a first portion of the base and the at least one outlet port is coupled with a second portion of the base.

16. The liquid-tight case of claim 15, wherein each of the first and second inlet ports comprises a barbed outer connector formed at an exterior side of the first portion of the base to facilitate tubing, and wherein a barbed inner connector is formed at an interior side of the first portion of the base to facilitate tubing and direct connection to the tissue device.

17. The liquid-tight case of claim 15, wherein the first and second portions of the base are opposite to each other.

18. The liquid-tight case of claim 12, wherein the first and second inlet ports are coupled with the lid.

19. The liquid-tight case of claim 18, wherein each of the first and second inlet ports comprises a barbed outer connector coupled with an exterior side of the lid to facilitate tubing, and wherein a barbed inner connector is coupled with an interior side of the lid to facilitate tubing and direct connection to the tissue device.

20. A system comprising:

the liquid-tight case of any one of the preceding claims; and

the tissue device enclosed within the liquid-tight case and in fluidic communication with the first inlet port, the second inlet port and the at least one outlet port.