[0004a] In an aspect, the present disclosure refers to a therapeutic device comprising: a substantially tubular member including a lumen extending therethrough, wherein a wall of the substantially tubular member includes: a first composite layer; a second composite layer; and a reservoir between the first and second composite layers, wherein the reservoir is configured to receive and contain therein a biological moiety.

[0004b] In another aspect, the present disclosure refers to a therapeutic device comprising: a plurality of substantially tubular members connected by connection members, each tubular member including a lumen extending therethrough, wherein each of the plurality of substantially tubular members has a first end and a second end, wherein each of the first end and the second end is open to the lumen, and wherein each of the plurality of substantially tubular members has a respective wall including: a first composite layer; a second composite layer; and a reservoir between the first and second composite layers, wherein the reservoir is configured to receive and contain a biological moiety.

[0004c] In another aspect, the present disclosure refers to a therapeutic device comprising: a toroidal member having a first opening therein and a hollow interior; wherein the toroidal member has a wall including: a first permeable composite layer; a second permeable composite layer; and a reservoir between the first and second composite layers, wherein the reservoir is configured to receive and contain a biological moiety.

[0005] ~~Embodiments~~ Examples of the present disclosure relate to a therapeutic device that includes a tubular member (e.g., tubular body) and a lumen extending therethrough. A wall of the therapeutic device includes a first permeable composite layer, a second permeable composite layer, and a reservoir between the first and second composite layers. The reservoir is configured to receive and contain a biological moiety.

[0006] In some ~~embodiments~~examples, the first composite layer includes a first cell permeable layer and a first cell impermeable layer and the second composite layer

includes a second cell permeable layer and a second cell impermeable layer.

[0007] In some examples~~embodiments~~, the therapeutic device has a first end and a second end. Each of the first end and the second end is open to the lumen so that vascularization occurs from the first cell permeable layer of the first composite layer and the second cell permeable layer of the second composite layer.

[0008] In some examples~~embodiments~~, the reservoir has a thickness between 50 microns and 200 microns.

[0009] In some examples~~embodiments~~, the biological moiety is a plurality of cells.

[0010] In some examples~~embodiments~~, the plurality of cells is selected from prokaryotic cells, eukaryotic cells, mammalian cells, non-mammalian cells, stem cells and combinations thereof.

[0011] In some examples~~embodiments~~, the device further includes a port in fluid communication with the reservoir.

[0012] Examples ~~Embodiments~~ of the present disclosure also relate to an article including a plurality of therapeutic devices, each of which includes a tubular member (e.g., tubular body). The therapeutic devices are connected by connection members. Each therapeutic device contains a lumen extending therethrough. Each of the therapeutic devices has a first end and a second end. Each of the first end and the second end is open to the lumen. Each of therapeutic devices has a wall including: a first permeable composite layer, a second permeable composite layer, and a reservoir between the first and second composite layers. The reservoir is configured to receive and contain a biological moiety.

[0013] In some examples~~embodiments~~, the therapeutic devices are interconnected by connection members at a first end or at a second end of the therapeutic devices.

[0014] In some examples~~embodiments~~, the therapeutic devices are independently movable from each other.

[0015] In some examples~~embodiments~~, the therapeutic devices are fluidly interconnected by connection members.

[0016] In some examples~~embodiments~~, the reservoir has a thickness of 50 microns to 200 microns.

[0017] Examples ~~Embodiments~~ of the present disclosure also relate to a device including a toroidal therapeutic device having a first opening therein and a hollow interior. The toroidal therapeutic device has a wall including: a first permeable composite layer, a second permeable composite layer, and a reservoir between the first and second composite layers. The reservoir is configured to receive and contain a biological moiety.

[0018] In some examples~~embodiments~~, the toroidal therapeutic device has a second opening on a side opposing the first opening and in substantial alignment therewith.

[0019] In some examples~~embodiments~~, the device further includes a second toroidal therapeutic device having a third opening therein positioned adjacent the second opening.

[0020] In some examples~~embodiments~~, the first and second toroidal therapeutic devices are fluidly interconnected by the second and third openings.

[0021] In some examples~~embodiments~~, the biological moiety is a plurality of cells.

[0022] In some examples~~embodiments~~, the plurality of cells is selected from prokaryotic cells, eukaryotic cells, mammalian cells, non-mammalian cells, stem cells and combinations thereof.

[0023] In some examples~~embodiments~~, the first and second composite layers each include a cell permeable layer and a cell impermeable layer.

[0024] In some examples~~embodiments~~, the device further includes a port in fluid communication with the reservoir.

BRIEF DESCRIPTION OF THE DRAWINGS

[0025] The accompanying drawings are included to provide a further understanding of the disclosure and are incorporated in and constitute a part of this specification,