Corning® Elplasia® 48K Vessel

Scale Up 3D Cultures Even Further

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With the effectiveness of 3D cell culture in many areas of research, including anti-cancer drug screening and *in vitro* tumor studies, the need for better methods to produce replicate spheroids of uniform size in mass quantities has emerged.

The Corning Elplasia 48K vessel addresses this need by enabling researchers to generate an even greater number of spheroids in a scaffold-free model compared to our Elplasia 12K flask and 12K open well plate.

The Elplasia 48K vessel utilizes the same 152 microcavities per cm^2 geometry as the 12K flask and 12K open well plate, but with four times the capacity in a larger vessel footprint like that of a Corning CellSTACK® 1-Chamber vessel. Gravity, in conjunction with the Corning Ultra-Low Attachment (ULA) surface, and a rounded microcavity geometry enable formation of approximately 48,000 spheroids of similar shape and size.

The ULA surface, a proprietary, animal-free, covalently bonded hydrogel, promotes the formation and easy harvesting of spheroids.

The microcavity geometry allows spheroids to remain in place during medium exchange without compromising full recovery at harvest time. The vessel's three-port design provides a dedicated "Harvest/Media Exchange" port with a flat landing area and liquid diverter to minimize spheroid disruption during liquid handling steps. Access ports provide direct access to 3D cultures and the microcavity surface. All ports come with standard 33 mm threaded caps with 0.2 µm pore non-wettable membranes to allow gas exchange. Optional Corning CellSTACK 33 mm threaded caps are available with integrally sealed chemically resistant, heat sealable flexible tubing to allow direct transfer of media and cells.

The vessel is currently for research use only and is produced on a development pilot line.

The Corning Elplasia technology is compatible with multiple cell types often used for 3D cell culture, and may be used across many applications including:

- Spheroid biobanking
- Cancer/Tumor biology
- 3D tissue engineering
- Drug screening
- Stem cell biology
- Extracellular vesicle production
- Regenerative medicine



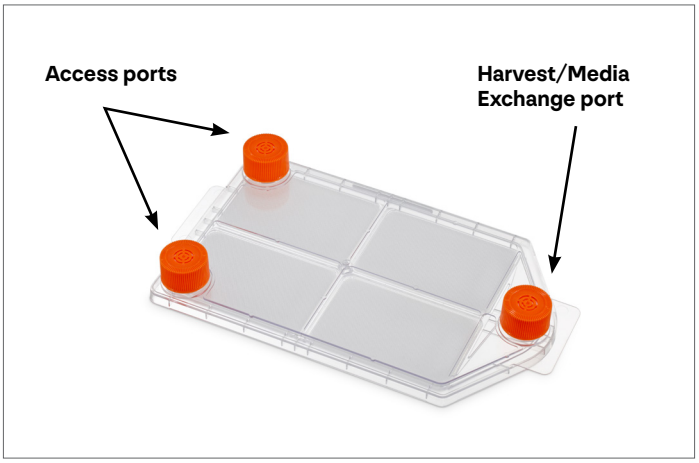
Features

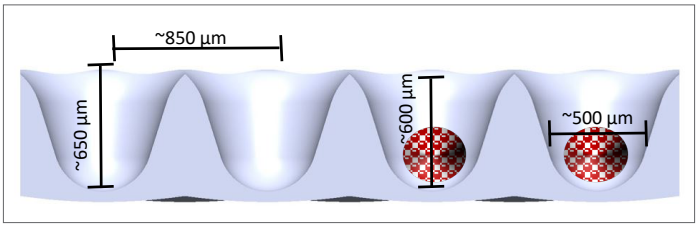
- Corning ULA surface
- Optically clear, gas permeable polystyrene film with low autofluorescence
- Harvest/media exchange port and liquid diverter minimizes impact of liquid flow during medium exchange and handling
- 320 cm^2 surface area with 152 microcavities per cm^2 generate approximately 48,000 spheroids of uniform size and shape
- Round well-bottom geometry
- Microcavity geometry dimensions: 850 x 650 µm (top diameter x depth), with working spheroid growth dimensions of 500 x 600 µm (diameter x depth)
- 50 - 250 mL working volume

Benefits

- Ease of spheroid formation, culture, and collection
- Creates uniform spheroid formation at large volumes
- Scaffold-free cultures
- Highly reproducible bulk spheroid formation across microcavities
- Common media reservoir for equivalent culture conditions for all spheroids
- Compatible with brightfield and fluorescent microscopy

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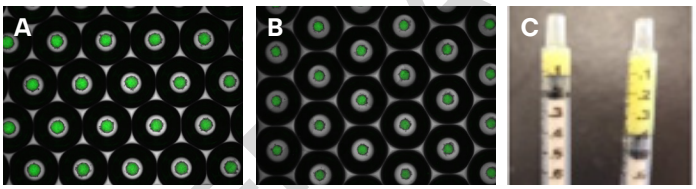


The Corning Elplasia 48K vessel substrate contains approximately 48,000 round bottom cavities that each provide a growth area of approximately 500 x 600 µm (diameter x depth) with gas permeable polystyrene film bottoms.

The Corning® Elplasia® 48K vessel was designed to enable the generation of a large volume of uniform spheroids under one culture condition. For more details, refer to the Elplasia 48K Vessel Guidelines for Use (CLS-AN-865DOC).

Table 1. Cell lines evaluated using the Corning Elplasia 48K vessel.

Cell Type	Source
Cancer Lines	
HT-29/GFP	Human colon adenocarcinoma
Stem Cells	
iPSC	Human bone marrow mesenchymal stem cells
iPSC	Human induced pluripotent stem cells, normal
Normal Lines	
HEK-293	Human embryonic kidney

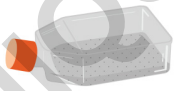


The Corning Elplasia 48K vessel utilizes the same microcavity geometry as the Corning Elplasia 12K flask and open well plate in a larger footprint to generate 4X the number of 3D cultures. Images depict 72-hour culture of HT29/GFP spheroids in the (A) Elplasia 12K flask compared to (B) the Elplasia 48K vessel. Images were captured using the EVOS-FL microscope using a 2X objective under brightfield and FL modes. Image (C) shows the concentrated spheroid pellets from the Elplasia 12K flask and Elplasia 48K vessel to illustrate the 4X increase in 3D culture collection from the Elplasia 48K vessel.

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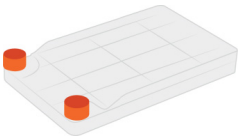
Corning Elplasia 48K Vessel



Corning Elplasia 12K Flask



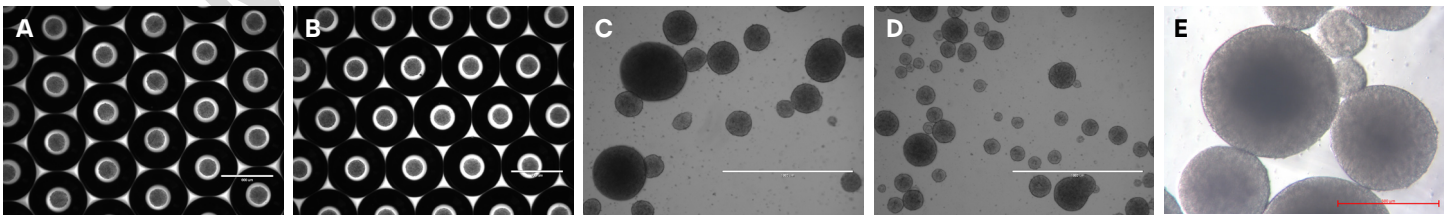
Corning 75 cm² U-shaped Flask



Corning CellSTACK® 1-chamber Vessel



Corning 125 mL Erlenmeyer Flask



iPSC aggregates/spheroids after 72-hour expansion using multiple scaffold-free ULA surface coated vessel types. The (A) Corning Elplasia 48K vessel and (B) Elplasia 12K flask form similarly sized spheroids compared to (C-E) other vessel types tested used for aggregate/spheroid scale up. Images were captured using the EVOS-FL microscope using a 2X objective under brightfield mode.

Ordering Information

Product is made-to-order (MTO) and may not be available in all markets.

Cat. No.	Description	Approximate Spheroids/Vessel	Microcavity Size (top diameter x depth)	Spheroid Growth Area (diameter x depth)	Qty/Pk	Qty/Cs
9920	Corning Elplasia 48K vessel, ULA surface	48,000	850 x 650 µm	500 x 600 µm	1	8

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