Instructions for **Cellbag** Harvest using **ULTA** filters

Instructions

This document describes the specific steps required to harvest Cellbag™ bioreactors using ULTA™ Prime GF and ULTA Prime CG or ULTA Pure HC normal flow filters.

Table 1. Recommended filters for Cellbag harvest

		ULTA Prime GF 5.0 µm			ULTA Prime CG or ULTA Pure HC		
Cellbag Size	Culture volume (L)	Size	Catalog number	Article number	Size	Catalog number	Article number
2L	up to 1	2-inch	KGF-A-0502TT	28-9084-27	2-inch	KMP-CG9202TT	28-9085-17
						KMP-HC9202TT	28-4002-31
10L	1 to 5	5-inch	KGF-A-05H1RR	28-4136-61	6-inch	KMP-CG9206TT	28-9085-23
						KMP-HC9206TT	28-4002-37
20L	5 to 10	10-inch	KGF-A-0510TT	28-4136-64	5-inch	KMP-CG92H1TT	28-4137-08
						KMP-HC92H1TT	28-4004-27
50L	10 to 25	20-inch	KGF-A-0520TT	28-4136-68	10-inch	KMP-CG9210TT	28-4137-12
						KMP-HC9210TT	28-4004-28
100L	25-50	2 x 20-inch	KGF-A-0520TT	28-4136-68	30-inch	KMP-CG9230TT	28-4137-18
						KMP-HC9230TT	28-4004-30
200L	50-100	3 x 30-inch	KGF-A-0530TT	28-4136-72	2 x 30-inch	KMP-CG9230TT	28-4137-18
						KMP-HC9230TT	28-4004-30

System preparation

Step	Action
1	Connect the appropriate size ULTA Prime GF 5.0 and ULTA Prime CG (or ULTA Pure HC) filters together. See the Table above. ***Note:*** *It may be useful to place a pressure gauge upstream of each filter capsule during initial experiments.*
2	Connect inlet of ULTA Prime GF filter to the Cellbag via one of the luer or MPC connections on the bag.
3	Connect the outlet of the ULTA Prime CG (or ULTA Pure HC) capsule to the receiving container.
4	Stop the WAVE™ rocker. Turn off the WAVE air pump.
5	Set peristaltic pump speed to achieve a flow rate which will result in a 1 hour process. See *Table 2, on page 2*.
6	Open the vent port on both capsules. (It is only necessary to open one vent port on each capsule. The appropriate vent port is the one which is physically higher, depending on the capsule orientation. See *Fig. 2, on page 2*)

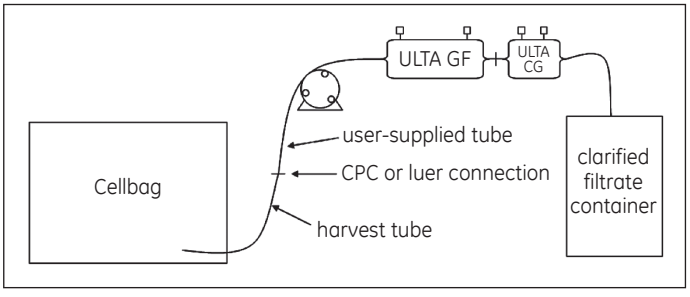

Fig 1. Process outline for Cellbag harvest.

Harvest

Step	Action
1	Start the pump.
2	When fluid appears at the ULTA Prime GF vent port, close the vent.
3	When fluid appears at the vent port on the 0.2 µm capsule (CG or HC), close the vent.

Step	Action
4	Continue pumping until the bag is completely drained. It may be necessary to remove the bag from the upper clamp on the rocker tray to ensure complete draining. ***Note:*** *If air is pumped into the system inadvertently, simply open the vent on the ULTA Prime GF capsule to allow the air to escape.*

Product recovery

Step	Action
1	When the bag is emptied, disconnect the pump inlet tubing from the Cellbag, but continue pumping air. (At this point the pump speed can be increased.)
2	Continue pumping until the liquid in both capsules is completely displaced by air. This is confirmed when the flow at the outlet comes to a stop. ***Note:*** *Expected product recovery values are shown in Table 3.*
3	Stop the pump.

System tear down

Step	Action
1	Depressurize the filters via the vent port on the second (0.2 µm) filter. ***Note:*** *It is preferable to depressurize the second filter because the first filter contains cell paste. If the first filter is depressurized, this may force the cell paste out of the vent port resulting in a spill.*
2	Disconnect the filters from the system and discard with the Cellbag. Filters can be autoclaved or disposed of with normal biohazard waste.

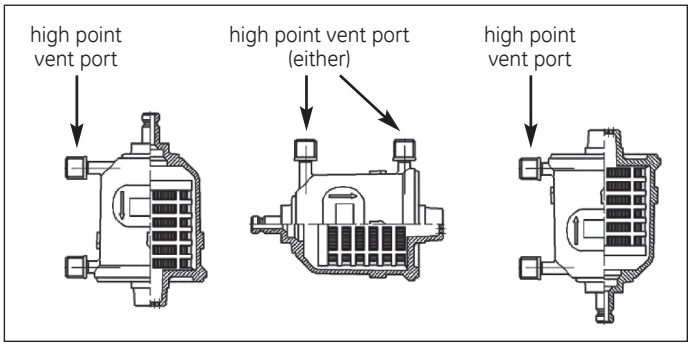

Fig 2. Capsule orientation.

Table 2. Recommended flow rates for Cellbag harvest.

Culture volume (liters)	Flow rate (lpm)
1	0.017
5	0.083
10	0.167
25	0.417

Table 3. Expected product recovery.

Culture volume (liters)	Final hold-up volume	Volumetric recovery (%)
1	32.3 mL	97%
5	121.2 mL	98%
10	211.8 mL	98%
25	423.6 mL	98%

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