



ATF Hollow Fiber

Cobetter ATF hollow fiber product is specially developed for perfusion cell culture process. The main body of the series is made of Cobetter's self-produced polyethersulfone (PES) hollow fiber membrane filament. The raw material has been tested and validated to have the features of low E&L profile and good biocompatibility. Cobetter ATF hollow fiber product is suitable for cell culture processes such as medium exchanging, continuous cell clarifying and harvesting from 1L to 2000L culture scale, which meets the requirements from R&D to commercialization.

Cobetter ATF hollow fiber product is manufactured following strict quality control standards. The production process is carried out in accordance with the ISO9001-2015 quality management system, and is all done under ISO Class 7. Each hollow fiber products will pass the integrity test and water flux test before release. Quality documentation can be provided to help bio-pharmaceutical customers' safety production and audit requirements.

Features

- 100% product integrity test;
- Low bioburden, no cytotoxicity;
- ADCF, good biocompatibility,
- Portable, flexible connection to 1L-2000L single-use bioreactors
- Single-use format available. Gamma irradiated and ready to use. Eliminating the need for complex on-site assembly and sterilization operations, improving manufacturing efficiency;
- All series of hollow fiber membrane columns can withstand regular autoclaving sterilization procedures, reducing the investment of high-cost sterilization equipment;
- Breakthrough the limitation of cell density in batch/ fed-Batch process while maintaining high cell viability.

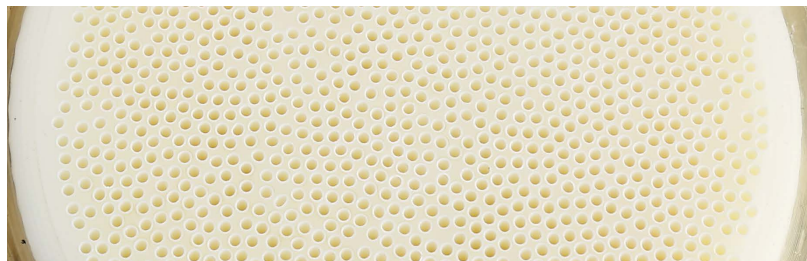
Application

Perfusion cell culture process, including

- N-1 high cell density seed culturing
- Medium exchanging and target product harvesting in dynamic/continuous perfusion cell culturing
- Medium exchanging in concentrated fed-batch cell culturing
- Cell lysis clarification and concentration

Multiple fields of cell/ microbial culture including

- Bio-pharmaceuticals such as antibody, vaccine and CGT.
- Food industries such as culture meat and wine-making.



Basic Information

	ATF 2	ATF 6	ATF 10
Culture volume	1-10 L	50-200 L	200-1000 L
Format	Stainless-steel, Single-use		
Membrane	Polyethersulfone (PES)		
Resolution	50kd, 0.2μm		
Fiber count	75	1440	6720
Effective filtration area	0.13 m ²	2.5 m ²	11 m ²
Length	60 cm		
Volume exchanged	0.1 L	1.3 L	6 L
Flow range	0.3-1.5 LPM	5-20 LPM	20-90 LPM
Recommended flow rate	5-15 ml/min/fiber 3-8 L/min/m ²		

Quality Assurance

- ISO 9001:2015 quality management system
- ISO class 7 manufacturing site
- 100% product integrity test
- ADCF raw material, meets the requirement of FDA 21CFR177-182 indirect food additives
- Meets the requirement of ISO 11137 sterilization validation
- Meets the requirement of USP <87> in Vitro Biological Reactivity Test
- Meets the requirement of USP <88> Biological Reactivity Test, in Vivo for Class VI plastics
- Aqueous extraction contains < 0.25 EU/mL as determined by Limulus Amebocyte Lysate (LAL), USP <85>
- Particulate matter in the product eluent meets the requirement in USP <788> for large volume parenterals
- Product validation guide and CoA available

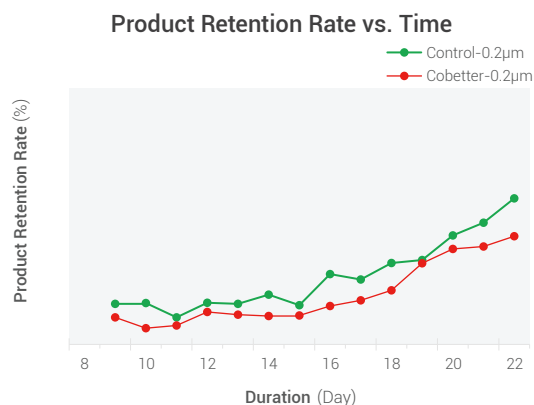
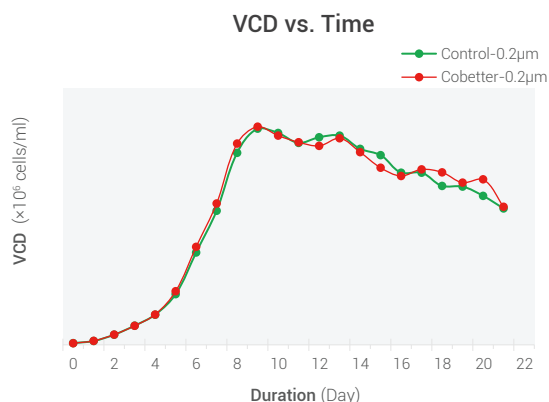
Order Information

Stainless-steel (autoclavable) Part No.	ATF Diaphragm Part No.	Single-use (gamma irradiated)		Resolution	Culture Volume	Culture Duration	Culture Stage	Product Model
HFEF2M20R1060A				0.2 μm		5-10 day	N-1	
HFEF2M20A1060A	SUF2-VP	SAH02001	/	0.2 μm	1-10 L	>10 day	N-1/N	ATF2
HFEF2050T1060A				50 kd		/	N	
HFEF6M20R1060A				0.2 μm		5-10 day	N-1	
HFEF6M20A1060A	SUF6-VP	SAH06001	SAH06002	0.2 μm	50-200L	>10 day	N-1/N	ATF6
HFEF6050T1060A				50 kd		/	N	
HFEFXM20R1060A				0.2 μm		5-10 day	N-1	
HFEFXM20A1060A	SUFX-VP	SAH10001	SAH10002	0.2 μm	200-1000L	>10 day	N-1/N	ATF10
HFEFX050T1060A				50 kd		/	N	

Note: 1. The above table shows the standard ATF products order information. For more ATF products requirement, please contact Cobetter's sales and technician.

2. The part number of Stainless-steel products should be quoted when ordering the single-use products.

Typical Case Study



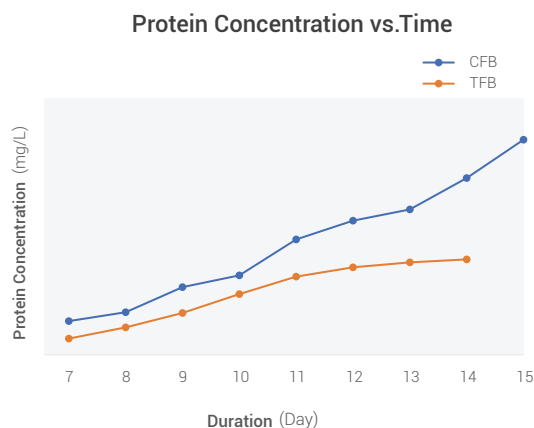
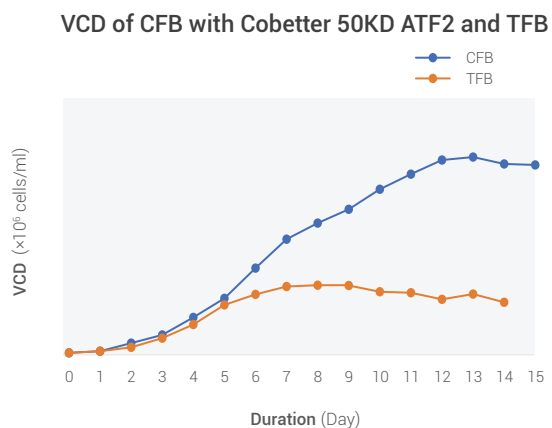
Cell growth and protein retention of N Stage dynamic perfusion cell culture process with 0.2um ATF2

Material & Method

Hollow Fiber	Cobetter 0.2um ATF2 HFEF2M20A1060A
Cell Culture System	3L glass bioreactor
Cell-line	CHO-K1
Culture process	N stage dynamic perfusion
Control	Competitor's 0.2um ATF2

Results

Peak VCD reached 70E6 cells/ml. Comparable cell growth and metabolism. Cobetter's shows a lower protein retention rate.



Cell growth and protein concentration of N Stage CFB cell culture process with 50kd ATF2 comparing with TFB cell culture process

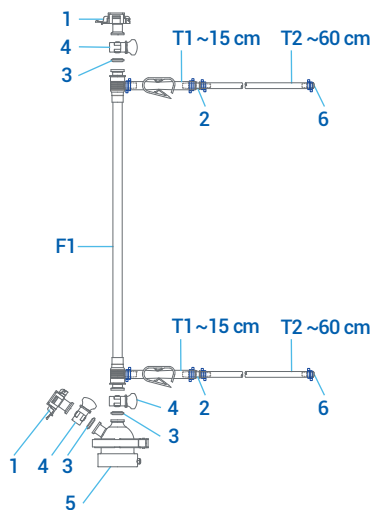
Material & Method

Hollow fiber	Cobetter 50KD ATF2
Culture system	3L glass bioreactor
Cell line	CHO-K1

Results

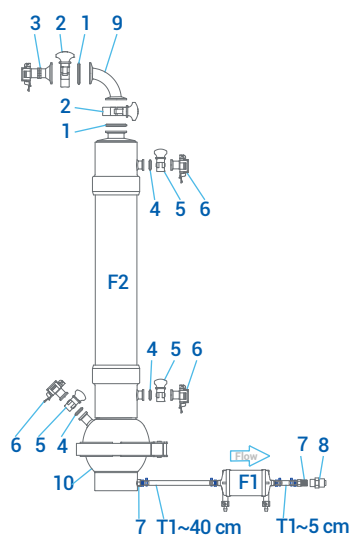
CFB process: Peak VCD reached 60E6 cells/ml, Viability $\geq$ 95%, Protein concentration in bioreactor reached 6.5g/L, which is 2 times higher than TFB process (Peak VCD: 25E6 cells/ml, Protein concentration: 3g/L). No target product detected in permeate (100% protein retention)

Single-use ATF 2 Schematic Diagram



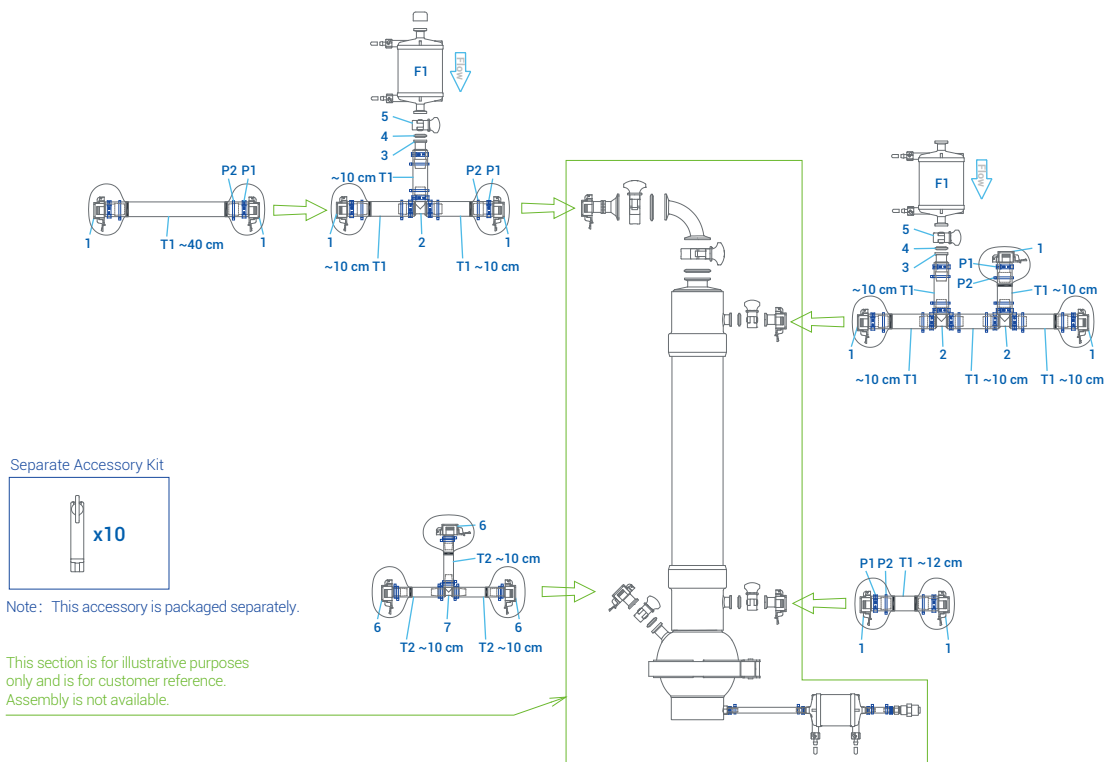
NO.	PART NO.	SUM
6	Tubing Plug, 1/4"HB	2 pcs
5	Single use Vac Pump, F2	1 pcs
4	TC Clamp, 3/4"TC	3 pcs
3	Silicone Gasket, 3/4"TC	3 pcs
2	Straight Fitting, 1/4"HB to 3/8"HB	2 pcs
1	AseptiQuik™ G Connector, 3/4"TC	2 pcs
F1	F2 Hollow Fiber Filter	1 pcs
T2	Lifemeta™ STF TPE Tubing, ID1/4"*OD7/16"	120 cm
T1	Lifemeta™ STT Pt-cured Silicone Tubing, ID3/8"*OD5/8"	30 cm

Single-use ATF 6 Schematic Diagram



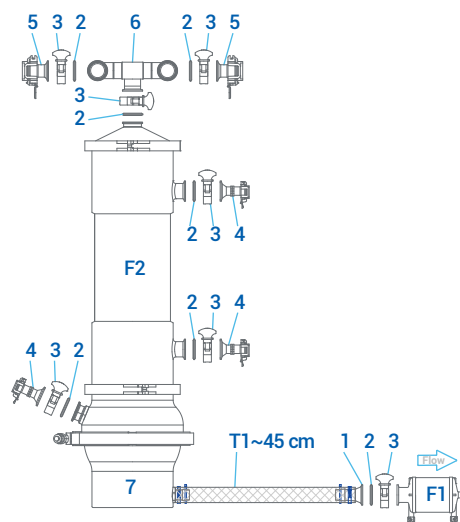
NO.	PART NO.	SUM
10	Single use Vac Pump	1 pcs
9	Bend Fitting, 1-1/2"TC	1 pcs
8	OD3/8" to 1/4" NPT Female Connector	1 pcs
7	1/4" HB to 1/4" NPT Male Connector	2 pcs
6	AseptiQuik™ G Connector, 3/4"TC	3 pcs
5	TC Clamp, 3/4"TC	3 pcs
4	Silicone Gasket, 3/4"TC	3 pcs
3	AseptiQuik™ G Connector, 1-1/2"TC	1 pcs
2	TC Clamp, 1-1/2"TC	2 pcs
1	Silicone Gasket, 1-1/2"TC	2 pcs
F2	F6 Hollow Fiber Filter	1 pcs
F1	Bricap™ C03 Capsule Filter with Cobetter Corevital™ APB 0.2 μm, Cat. No.: C03BBAPBBG1P	1 pcs
T1	Lifemeta™ ST8H High Pressure Silicone Tubing, ID1/4"*OD7/16"	45 cm

Single-use ATF 6 Tubing Assembly Schematic Diagram



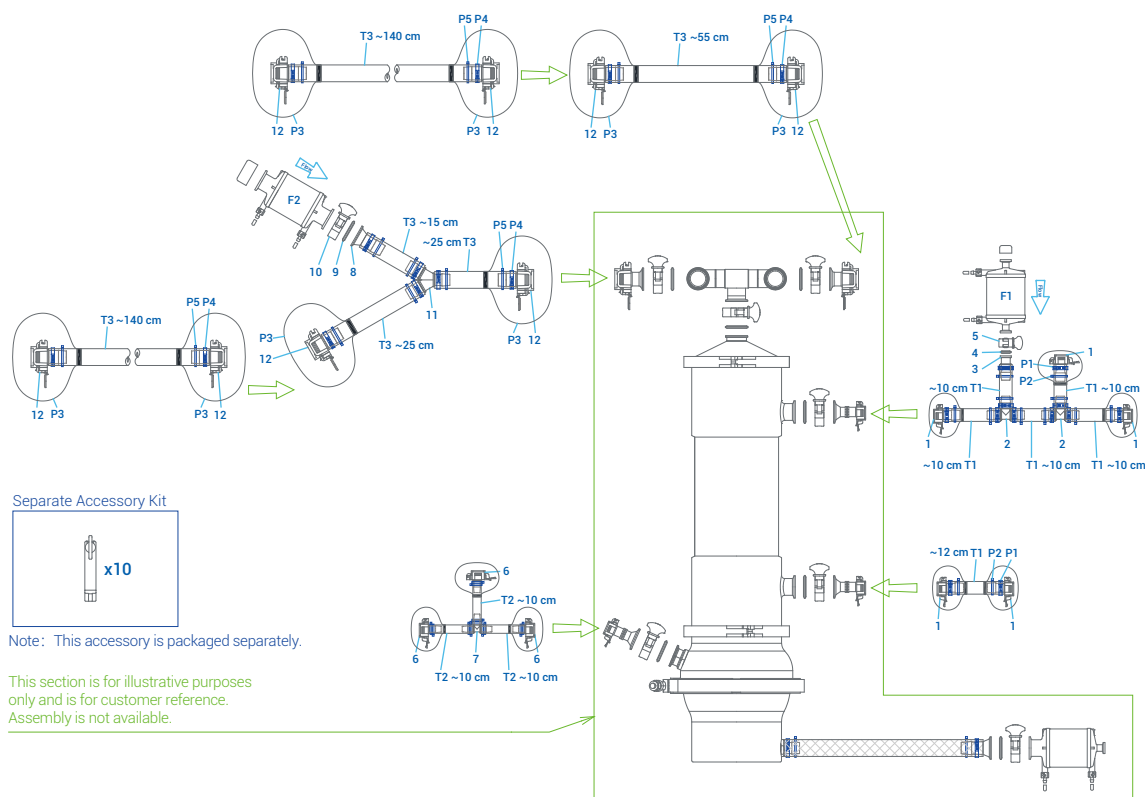
NO.	PART NO.	SUM
P2	Cable Tie, 3.6 mm	A/R
P1	StepLess™ Ear Clamps, 30.1 mm (For assembly reference only)	20 pcs
7	T-Fitting, 1/2"HB	1 pcs
6	AseptiQuik™ G Connector, 1/2"HB	3 pcs
5	TC Clamp, 3/4"TC	2 pcs
4	Silicone Gasket, 3/4"TC	2 pcs
3	TC Fitting, 3/4"HB to 3/4"TC	2 pcs
2	T-Fitting, 3/4"HB	3 pcs
1	AseptiQuik™ G Connector, 3/4"HB	9 pcs
F1	Bricap™ L03 Capsule Filter with Cobetter Corevital™APB 0.2 µm, Cat. No.: L03TTAPBBG1P	2 pcs
T2	Lifemeta™ STT Pt-cured Silicone Tubing, ID1/2"*OD3/4"	30 cm
T1	Lifemeta™ STT Pt-cured Silicone Tubing, ID3/4"*OD1-1/8"	132 cm

Single-use ATF 10 Schematic Diagram



NO.	PART NO.	SUM
7	Single use Vac Pump, adaptation FX	1 pcs
6	Tee Fitting, 1-1/2"TC	1 pcs
5	AseptiQuik™ L Connector, 1-1/2"TC	2 pcs
4	AseptiQuik™ G Connector, 1-1/2"TC	3 pcs
3	TC Clamp, 1-1/2"TC	7 pcs
2	Silicone Gasket, 1-1/2"TC	7 pcs
1	TC Fitting, 1"HB to 1-1/2"TC	1 pcs
F2	FX Hollow Fiber Filter	1 pcs
F1	Bricap™ L05 Capsule Filter with Cobetter Corevital™ APB 0.2 μm, Cat. No.: L05STAPBBG1P	1 pcs
T1	Vena™ Technosil Reinforced Silicone Tubing, ID25.4*OD34.5mm	45 cm

Single-use ATF 10 Tubing Assembly Schematic Diagram



NO.	PART NO.	SUM
P5	Large Cable Tie	12 pcs
P4	StepLess™ Ear Clamps, 38.1 mm (For assembly reference only)	12 pcs
P3	Large Dust Cover	8 pcs
P2	Cable Tie, 3.6 mm	A/R
P1	StepLess™ Ear Clamps, 30.1 mm (For assembly reference only)	12 pcs
12	AseptiQuik™ L Connector, 1"HB	8 pcs
11	Y-Fitting, 1"HB	1 pcs
10	TC Clamp, 1-1/2"TC	1 pcs
9	Silicone Gasket, 1-1/2"TC	1 pcs
8	TC Fitting, 1"HB to 1-1/2"TC	1 pcs
7	T-Fitting, 1/2"HB	1 pcs
6	AseptiQuik™ G Connector, 1/2"HB	3 pcs
5	TC Clamp, 3/4"TC	1 pcs
4	Silicone Gasket, 3/4"TC	1 pcs
3	TC Fitting, 3/4"HB to 3/4"TC	1 pcs
2	T-Fitting, 3/4"HB	2 pcs
1	AseptiQuik™ G Connector, 3/4"HB	5 pcs
F2	Bricap™ L03 Capsule Filter with Cobetter Corevital™ APB 0.2 μm, Cat. No.: L03SSAPBBG1P	1 pcs
F1	Bricap™ L03 Capsule Filter with Cobetter Corevital™ APB 0.2 μm, Cat. No.: L03TTAPBBG1P	1 pcs
T3	Lifemeta™ STT Pt-cured Silicone Tubing, ID1"×OD1-3/8"	400 cm
T2	Lifemeta™ STT Pt-cured Silicone Tubing, ID1/2"×OD3/4"	30 cm
T1	Lifemeta™ STT Pt-cured Silicone Tubing, ID3/4"×OD1-1/8"	62 cm

cobetter[®]

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Ver. 01-a



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