

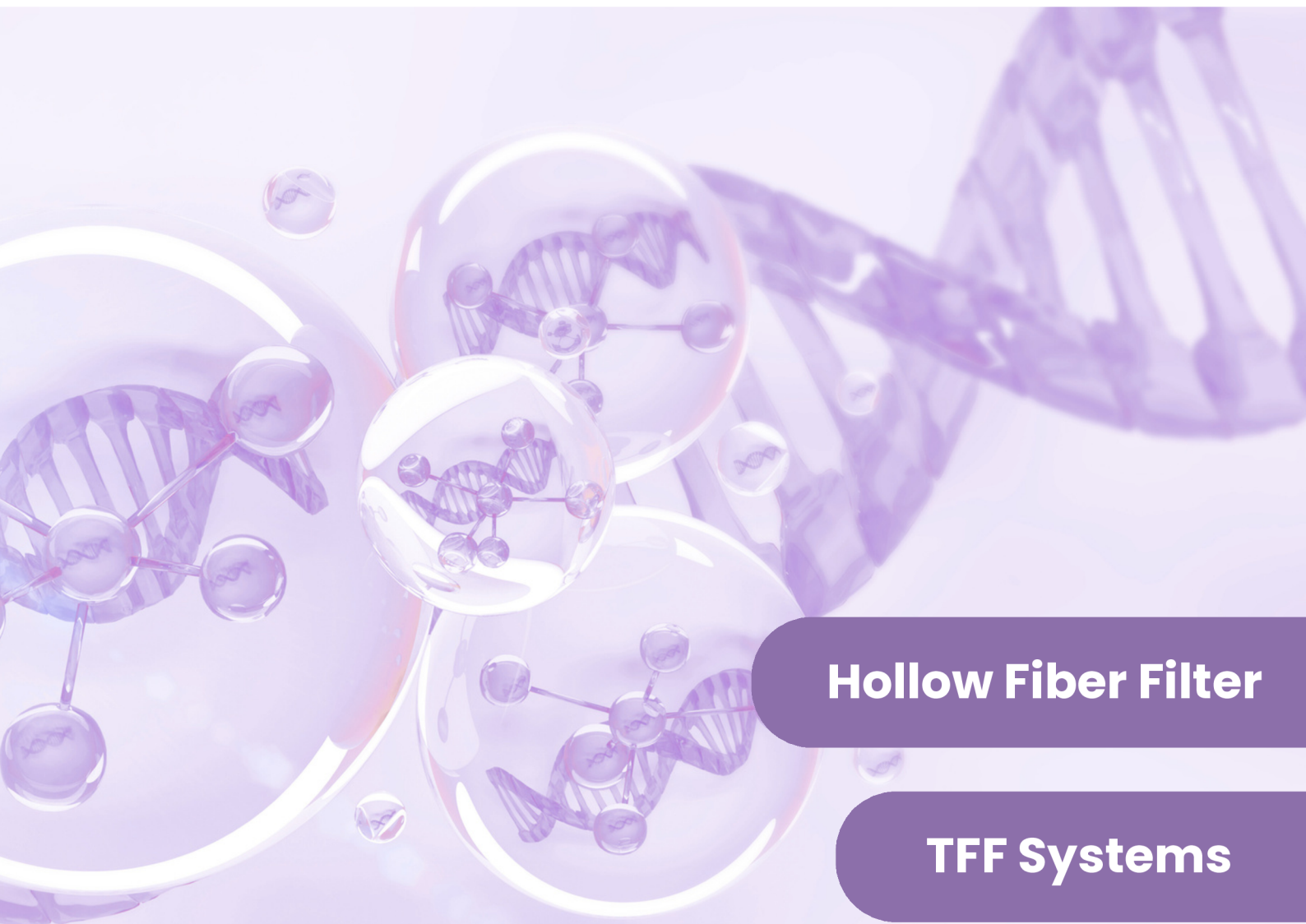


明基透析
BenQ Dialysis

Qflow-Special Issue

Integrated Tangential Flow Filtration (TFF) Solutions for Bioprocessing

From Concentration and Diafiltration to Purification and
Manufacturing Scale-Up



Hollow Fiber Filter

TFF Systems

Hollow Fiber Filter



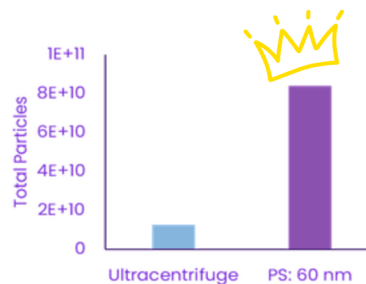
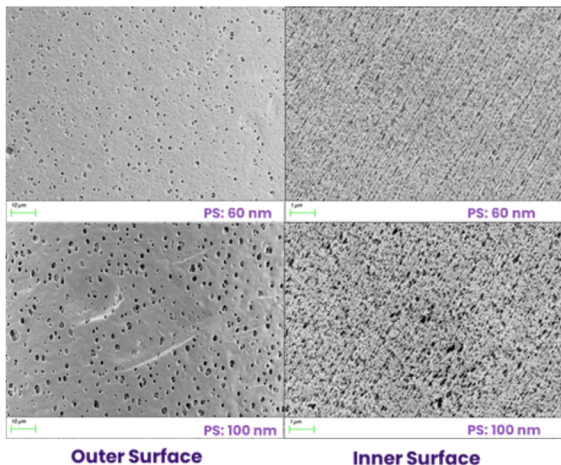
Customized Series



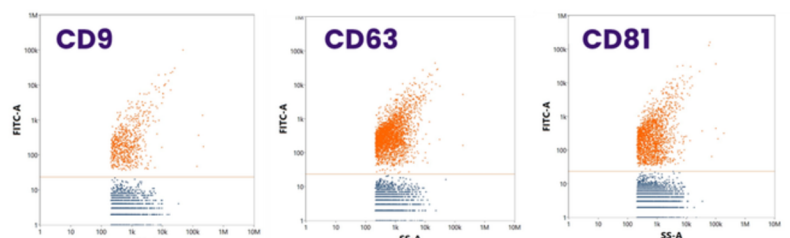
- mPES
- OEM/ODM
- Technical Service

Model No.	S100-1	S100-2	S180-1	S180-2	S350-1	S350-2
Pore size (nm)	60	100	60	100	60	100
Filtering surface (cm ²)	100	100	180	180	350	350
Internal fiber diameter (μm)	300	300	300	300	300	300
External fiber diameter (μm)	500	500	500	500	500	500
Fiber number per filter	126	126	225	225	450	450
Maximum operating pressure (psi)	30	26	30	26	30	26
Flow Rate @2000/s (ml/min)	40	40	72	72	143	143
Flow Rate @6000/s (ml/min)	120	120	215	215	429	429
Flow Rate @10000/s (ml/min)	200	200	358	358	716	716

Homogeneous pore size distribution



Qflow hollow fiber filtration (60 nm) significantly enhances EV recovery while preserving the expression of exosome markers CD9, CD63, and CD81, indicating that the recovered products exhibit typical exosomal characteristics.



Hollow Fiber Filter

Standard Series

- Linear scale-up from laboratory to production with reliable and predictable performance.
- Modified polyethersulfone (mPES) membrane with low protein binding and reduced fouling for higher flux and throughput.



Component	Hollow Fiber Membrane	Modified Polyethersulfone (mPES)
	Potting Resin	Epoxy Resin
	Housing & Fittings	Polysulfone (PSU)
	O-Ring	Silicone Rubber
	Clamp	Nylon + Glass Fiber
	End Cap	Polypropylene (PP)
	Storage Solution	30 wt% Propylene Glycol + 0.4 wt% NaOH
Operating Specifications	Maximum Feed Pressure	36 psi (2.5 bar)
	Operating Temperature	≤ 40°C (SIP Compatible)
	Operating pH Range	1–14
Quality & Compliance	Safety	USP <87> and FDA 21 CFR Compliant
	Cytotoxicity	ISO 10993-5
	Quality System	ISO 9001
	Integrity Testing	100% Flow Rate and Integrity Tested Prior to Release

Hollow Fiber Filter

BenQ

Ultrafiltration (UF)

- Protein and antibody purification
- Vaccine processing
- Viral vector concentration
- Nanoparticle and liposome processing
- Diafiltration and buffer exchange
- Natural product purification

Microfiltration (MF)

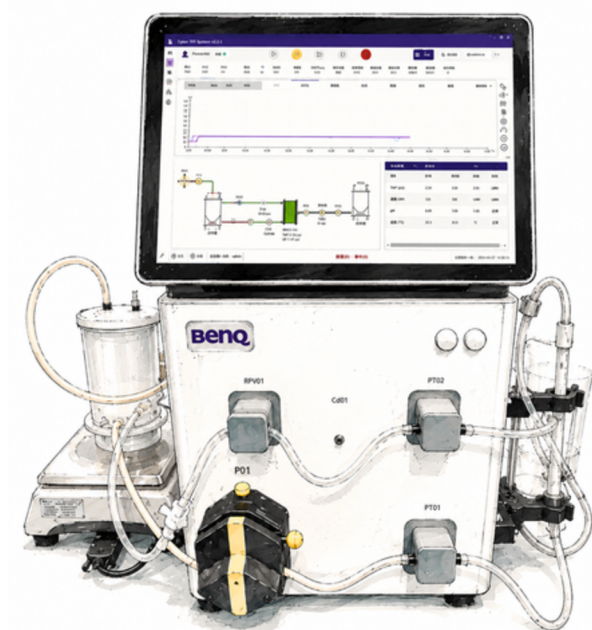
- Cell harvesting and washing
- Fermentation broth clarification
- Cell lysate clarification

Product Specifications

MWCO / Pore Size	Fiber ID (mm)	Size	Recommended Processing Volume (L)	Surface Area (m ²)		Effective Length (mm)	Feed / Retentate Port	Permeate Port
				1.0 mm	1.5 mm			
10 kDa 30 kDa 50 kDa 100 kDa 300 kDa 500 kDa 750 kDa 1000 kDa 0.22 µm 0.45 µm 0.65 µm	1.0 1.5	Lab	0.3	0.003	0.003	320	FLL	FLL
			0.6	0.006	0.006	640		
			0.6	0.006	0.006	320		
			1	0.012	0.012	640		
			1	0.018	0.015	320	0.5" TC	3/16" HB
			2	0.036	0.03	640		
			5	0.07	0.042	320	3/4" TC	3/8" HB
			10	0.14	0.084	640		
		Pilot	15	0.16	0.1	320	1.5" TC	0.5" TC
			30	0.33	0.2	640		
			20	0.23	0.18	320		
			40	0.47	0.36	640		
		Process	120	1.7	1.05	320	1.5" TC	1.0" TC
			250	3.4	2.11	640		

Specifications are subject to change without prior notice. Actual product specifications and performance may vary depending on process conditions.

Automated Separation Systems



- Clarification
- Concentration
- Desalting
- Buffer Exchange
- Purification

Item	Qflow-Neo
Feed / recirculation pump type	Peristaltic pump
Feed / recirculation flow rate	0–700 mL/min (Up to 2 L/min)
Maximum system pressure	Up to 4 bar
Supported membrane formats	100 cm ² – 0.1 m ²
Weighing module	6 kg
Reservoir volume	1L
Operating temperature	2–40 °C
Data integrity / 21 CFR Part 11	Compliant with 21 CFR Part 11, with audit trail, user management, and e-signature features.
Optional Configuration	Multi-channel selector valve, pH sensor, conductivity sensor, flow meter.

Specifications are subject to change without prior notice. Actual product specifications and configurations shall prevail.



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Creating Value Together
in Bioprocessing