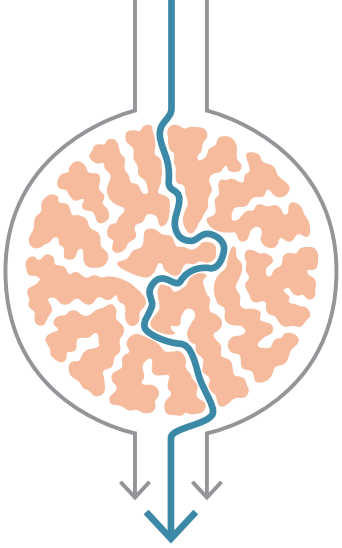
What is Cellufine™ MLP?

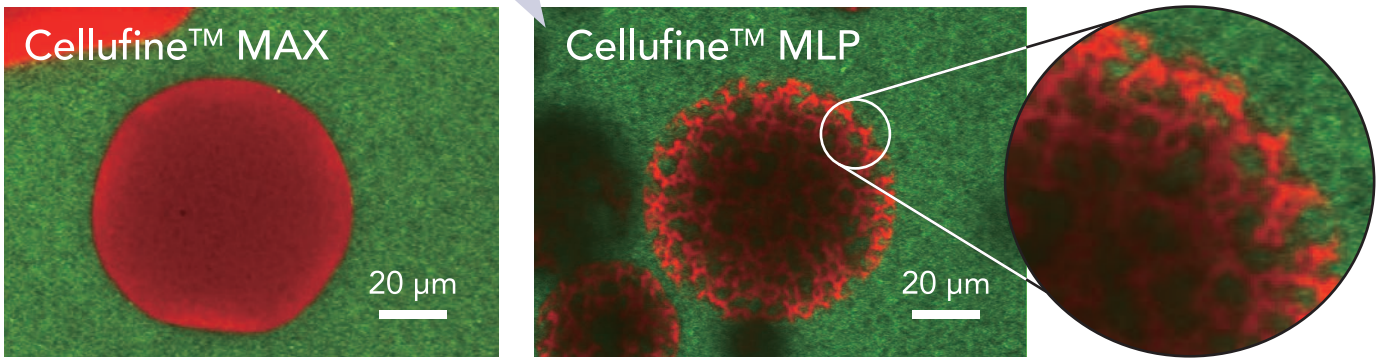
Cellulose resin MLP is a highly crosslinked cellulose particle that has exceeding 1 µm continuous pore structure.

Therefore, the intraparticle surface of the resin can be used as an adsorption site for biomacromolecules such as large virus and virus-like particles.

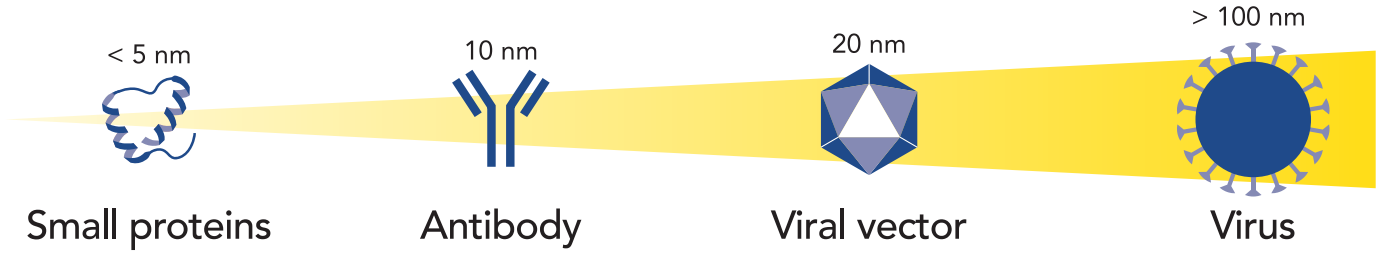


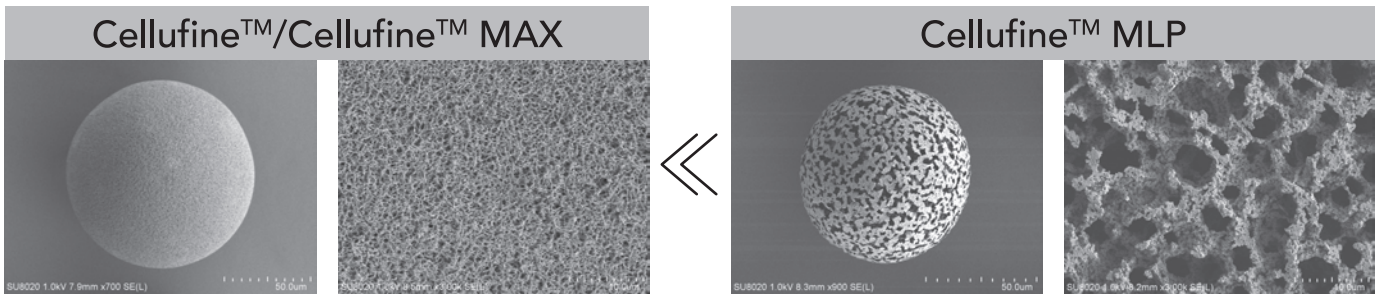
- ✓ Improved mass transfer
- ✓ High biding capacity for large biomolecules

Green fluorescent nanoparticles (100 nm) can diffuse into the intraparticle area of Cellufine™ MLP.



Target molecule size





We welcome requests for free samples and collaborative research!

10 mL bottle  and/or Prepacked column (1 mL, 5 mL) 

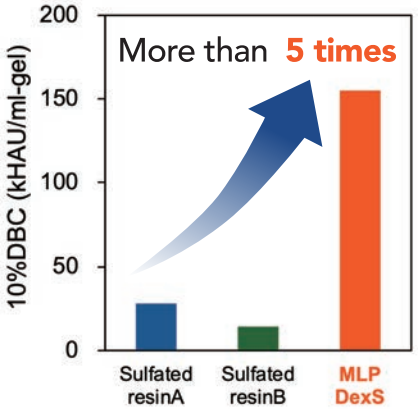
Let's create the future together. Reach us via the QR code on back. 

Virus purification

High binding capacity of >100 nm bioparticles

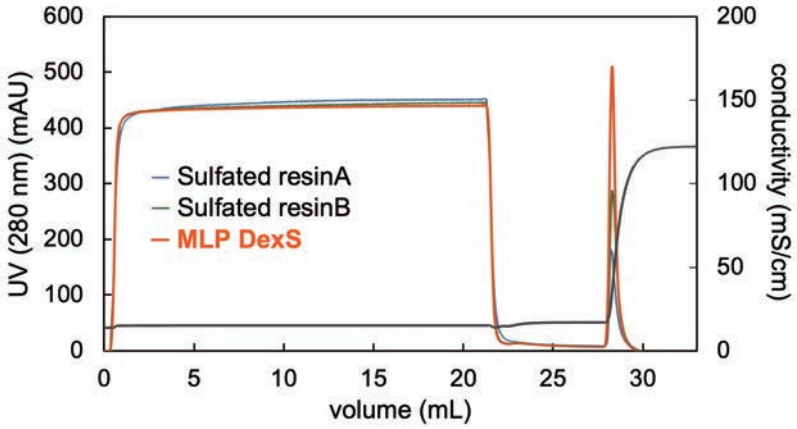
Cellufine™ MLP DexS

Binding capacity of influenza virus



Column vol : ID 5 mm × 1.5 cm L (CV = 0.29 mL)
Flow rate : 0.5 mL/min
Load sample : Influenza A virus (H1N1) from MDCK cells

SARS-CoV-2 Purification



Column vol : ID 5 mm × 1.5 cm L (CV = 0.29 mL)
Flow rate : 0.5 mL/min
Load sample : SARS-CoV-2 XBB

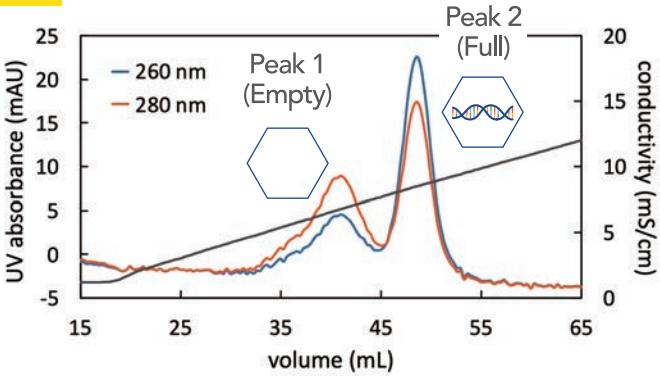
AAV purification

High performance for AAV full/empty capsids separation

Cellufine™ MLP AEX

	Full particle ratio*
Load (AFF purified)	15.9%
Monolithic Column	42.8%
MLP AEX for AAV	**70.6%**

* Full particle ratio was determined using a mass photometry



Column vol : 1.0 mL
Flow rate : 1.0 mL/min (RT 1min)
Load sample : AFF purified AAV2: 1.06 x 10^{12} vg
Equilibration buffer : 50 mM Tris-HCl, pH 9.0, 2 mM $MgCl_2$
Elution buffer (B) : 50 mM Tris-HCl, 150 mM NaCl, 2 mM $MgCl_2$, pH 9.0

mAb purification

Efficient host cell proteins removal under high loading condition

Cellufine™ MLP MMC

	mAb purity in feed (%)	HCPs in feed (ppm)	mAb purity in FT pool (%)	**mAb yield (%)**	**HCPs in FT pool (ppm)**
Capto adhere	97.2	1718	97.6	95.6	513
MAX IB	96.7	2229	97.8	96.3	59
MLP MMC	97.2	1718	97.7	**99.4**	**8**

Column vol : 0.3 mL Flow rate : 0.075 mL/min Load sample : Partially purified mAb solution (pH 7.0, 6.0 mS/cm), 1010 mg mAb/1 mL resin

Kenji Kadoi *et al.*, Fabrication and characterization of a cellulose monolith-like particle for virus purification, *Biochemical Engineering Journal*, 192 (2023), 108849.
Kenji Kadoi *et al.*, Enhanced sulfate pseudo-affinity chromatography using monolith-like particle architecture for purifying SARS-CoV-2, *Vaccines*, 53 (2025), 126951.