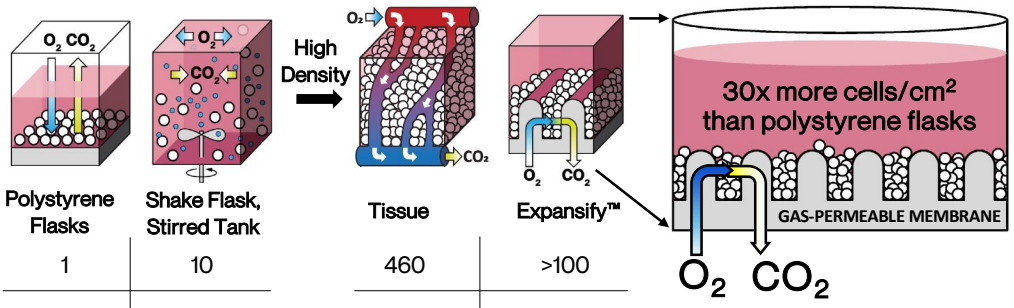
XDemics

Expanding possibilities in viral production.

Overcoming the O_2 bottleneck enables tissue-like cell density *in vitro*

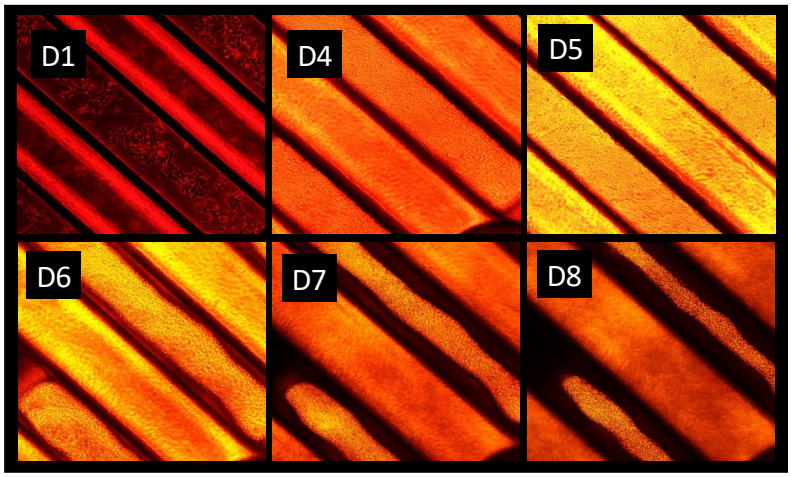
Expansify™ respiring cultureware features a gas-permeable membrane engineered for optimal oxygenation to enable intensified 3D culture of adherent, spheroid, or suspension cells.

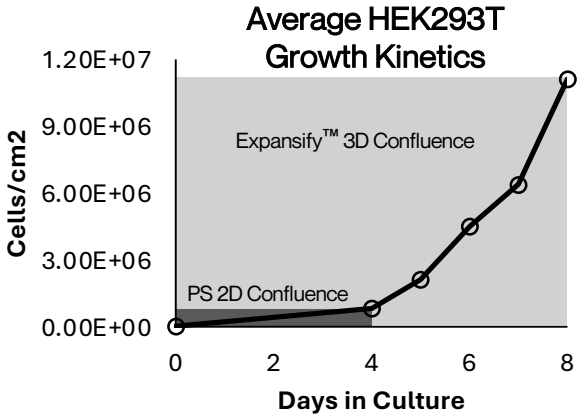


	Polystyrene Flasks	Shake Flask, Stirred Tank	Tissue	Expansify™
Mammalian Cells (1E6 cells / mL)	1	10	460	>100
O_2 Turnovers, k_La (1 / hr)	0.5	5	118	>100

Expansify™ enables:

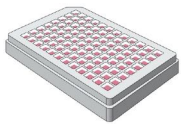
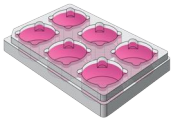
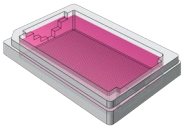
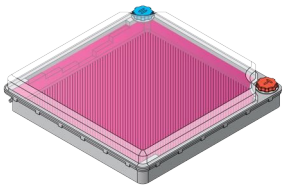
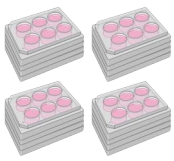
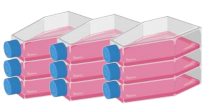
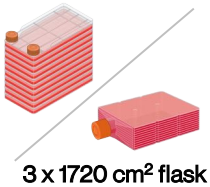
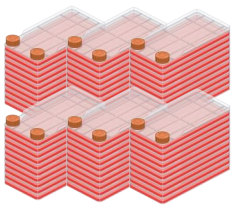
- Optimal oxygenation
- Shear-free environment
- Cell retention
- Easy media exchange
- Linear scalability
- 3D culture



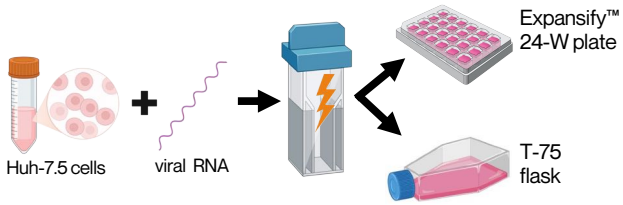


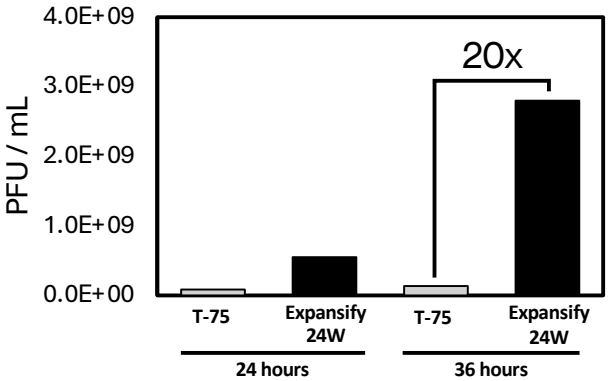
HEK293T cultured in vitronectin ECM coated Expansify™ plates achieve >450-fold expansion in 8 days (D0= 2.5E4 cells/cm²; D8= 1.11E7 cells/cm²) with >90% viability.

Expansify™ Plate and Tray Product Line

Yield (per cm²)	96-Well Launch 2026	24-Well Available Now	6-Well Launch 2027	Single-Well Available Now	Gigacell™ Tray Launch 2026 (Beta Units H1)
Expansify™: >3E6 cells					
Surface Area	0.32 cm²/ well	2 cm²/ well	8 cm²/ well	70 cm²/ well	387 cm²
Total Cells (e.g. HEK293T)	0.5 million/ well	20 million/ well	80 million/ well	500 million/ plate	>3.5 billion/ tray
Polystyrene: ~1E5 cells ~100x Yield / cm² Versus Polystyrene	 16 x 6-well plates	 24 x T-75	 6-9 x T-225	1 x 10-Stack  3 x 1720 cm² flask	 6x 10-stack

Electroporation: YF Virus

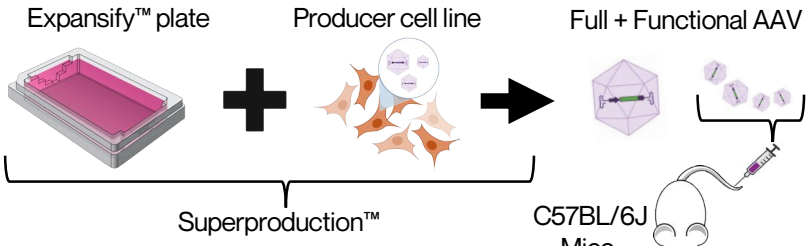


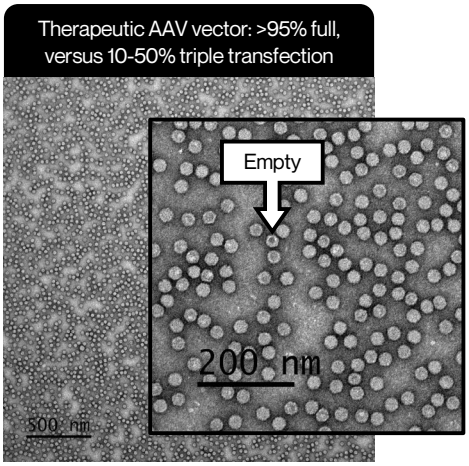


Data generated by Alison Ashbrook of the Charles Rice Laboratory (Nobel Prize, Medicine 2020), Rockefeller University

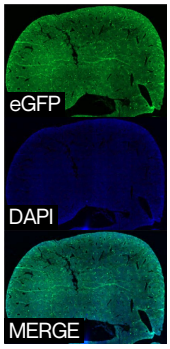
YFV-induced lethality in mice requires concentrated viral doses. Expansify™ produces pre-concentrated high titer inoculums (typical 20-40x), overcoming experimental limitations of flask-based production.

Producer Cell Lines: AAV





TEM of AAV2 post-affinity purification. No downstream enrichment for intact viral genomes.

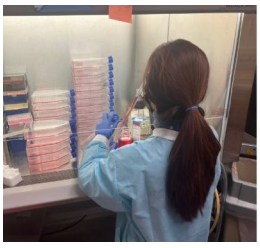


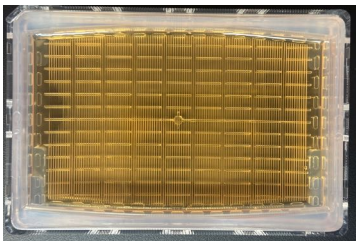
Liver 4 Weeks Post IV

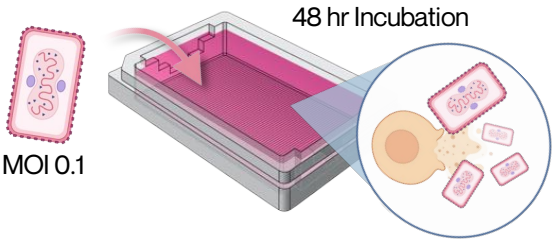
Confocal Fluorescence Microscopy
1E11 AAV2-eGFP / mouse
~ 4E12 vg/kg (n=6)

High-density biomimetic environment supports exceptional production from AAV producer cell lines.

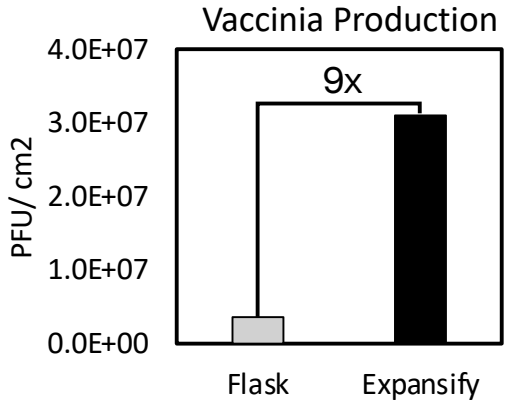
Replication Competent Virus: Vaccinia







- 10x increased cell density
- 20x reduction in flasks
- Simplified workflow
- Production intensification
- 10x fewer opening events
- Superior utilization of incubator space



Increased vaccinia viral titers from 3.6E6 PFU/cm^2 (22.9 PFU/cell) in polystyrene to 3.1E7 PFU/cm^2 (37.5 PFU/cell) in Expansify™ respiring cultureware.

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