Media ingredients from plants to enable cultivated meat at cost and scale

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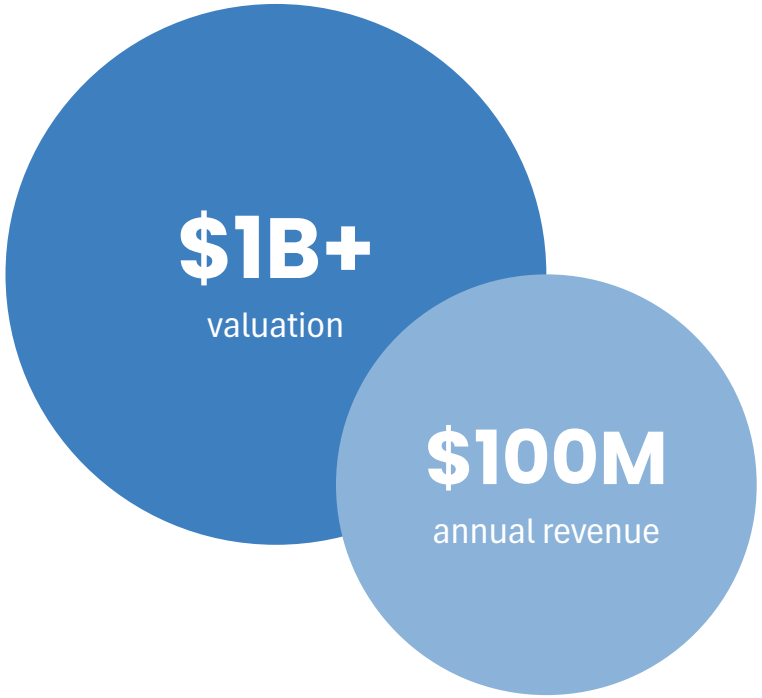
Dr. Natalie Rubio (natalie@decolabs.org)

THE BIG PICTURE Cultivated companies must hit cost, scale, quality targets to achieve market adoption (and to be investable).



$14 per kg
selling price

15%
gross margin

8,470
metric tons of beef

scale target

$12 per kg
production cost

cost target

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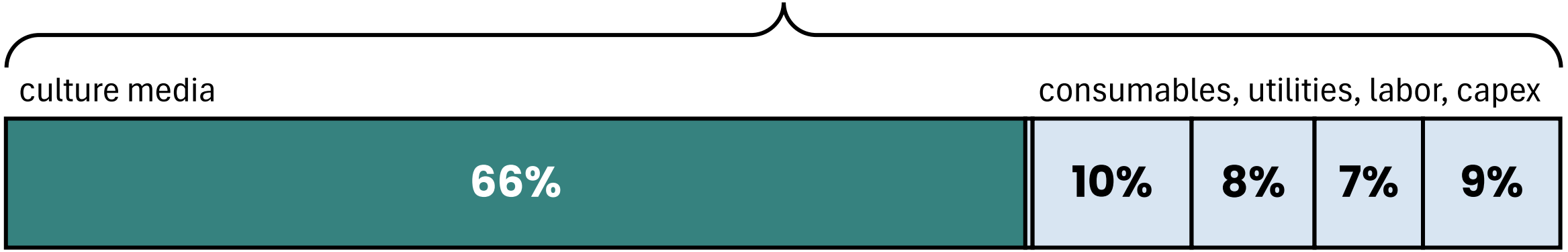
Leading companies have made significant strides to narrow cost and scale gaps.

Company	Species	Percent	Production Capacity	Price (USD/kg)
Vow Foods	Quail	40% Forged By Vow 2026	130 MT Fast Company 2025	$83 – 208 Forged By Vow 2026
Good Meat	Chicken	3% Good Meat 2026	10 MT Good Meat 2022	$45 – 1,480 Good Meat 2024
Wildtype	Salmon	Unknown	90 MT Edible Planet 2025	$53 Reddit 2022
Mission Barns	Pork	10% The Atlantic 2023	450 MT Green Queen 2024	$46 – 460 GreenQueen 2025
Upside Foods	Chicken	Unknown	92 MT Upside Foods 2026	Unknown
Believer Meats	Chicken	50% Pasitka 2024	12,000 MT Food Navigator 2025	$22 Pasitka 2024
Parima	Chicken, Duck	100% Parima 2026	1,700 MT Parima 2026	$8 Parima 2026
Aleph Farms	Steak	10-30% GreenQueen 2025	10 MT GreenQueen 2025	$20 – 60 Protein Production 2025

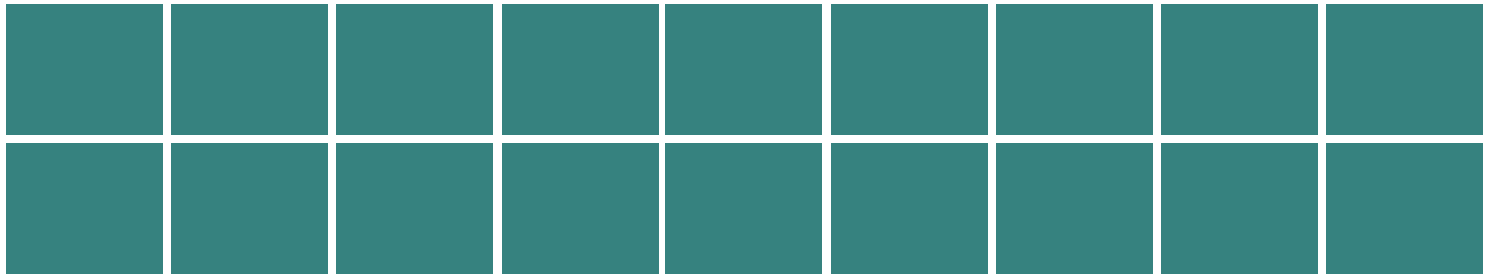
Cell culture media ingredients are a major cost and scale bottleneck.

$22 USD/kg



culture media production today = 500M L

culture media required to support 1% global meat demand = 10B LL



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[Pasitka et al., 2024]

Albumin is a particularly costly ingredient due to its high concentration.

Medium component	Weight per 1 l (g)	Price for 1 l (US$)
Amino acids	3.89	0.26
Fatty acids and lipids	0.03	0.09
Sugars and polysaccharides	5.65	0.26
Vitamins and minerals	10.26	0.79
Growth factors	0.002	0.30
Albumin	2.50	1.00
Others	0.27	0.56
Total sum	22.61	3.26

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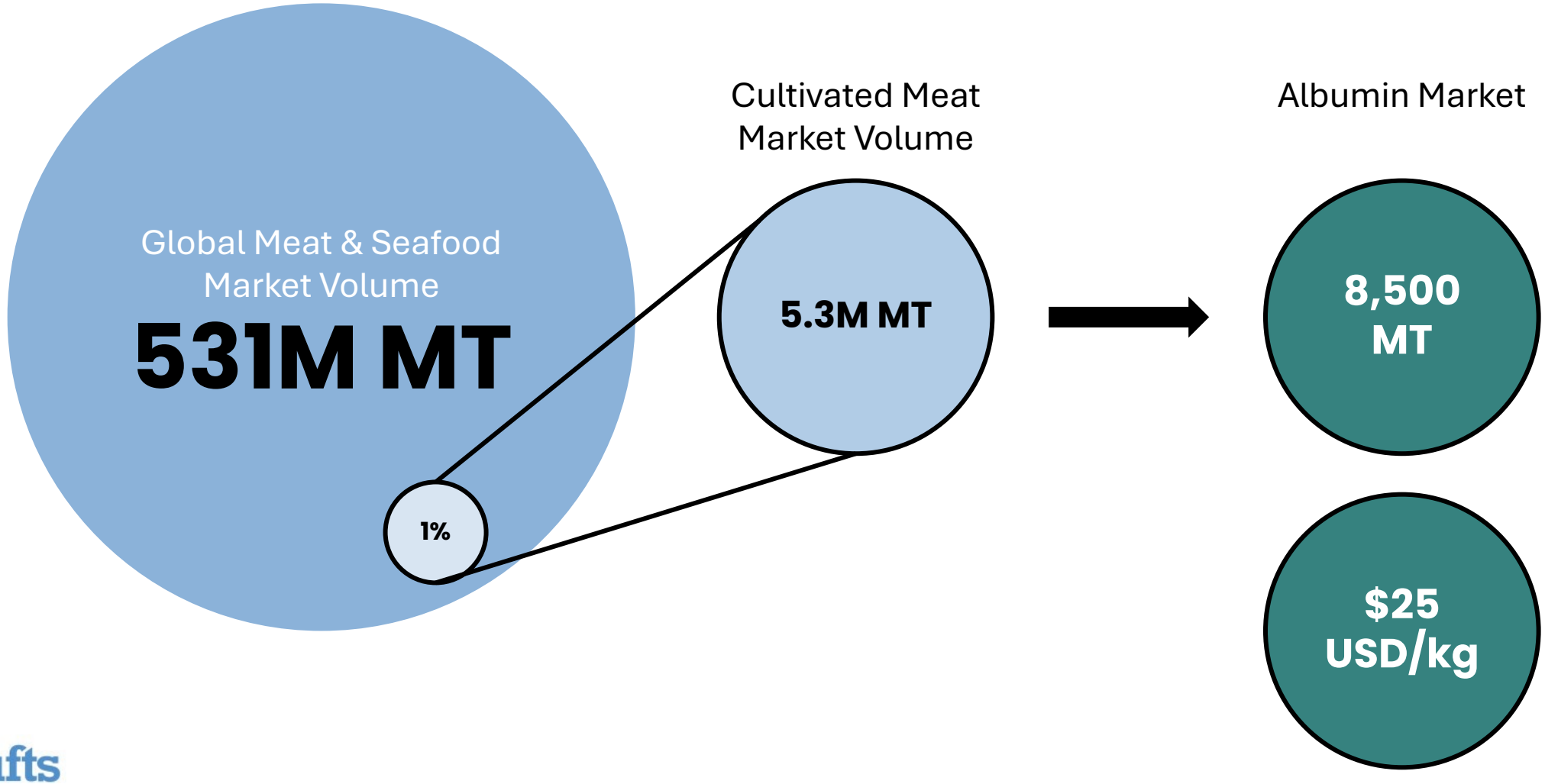
[Pasitka et al., 2024]

THE ALBUMIN PROBLEM For cultivated meat to capture just 1% of global meat demand, we need much larger supplies of much cheaper albumin.



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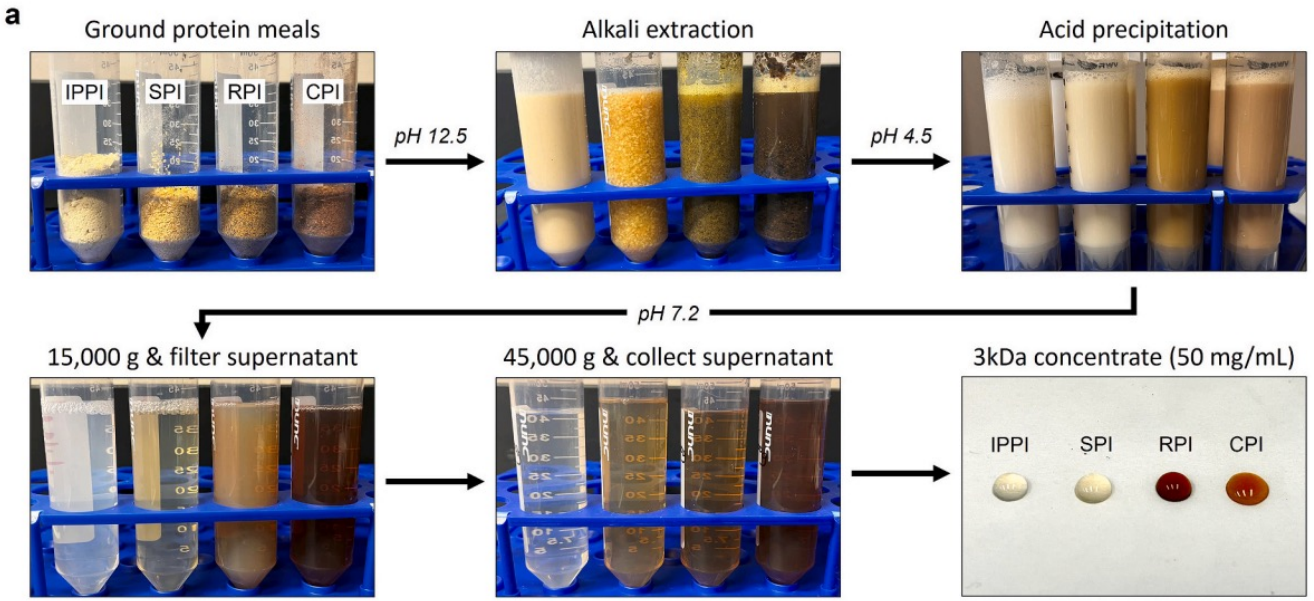
[Assumptions: 20 L/kg, 0.8 g/L, $0.02/L]

SOLVING THE ALBUMIN PROBLEM Tufts scientists discovered that certain plant protein isolates can replace the role of albumin in cell culture.



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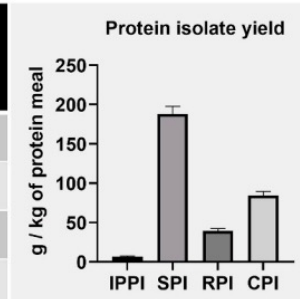
Protein	Global Supply (MMT)	Protein meal cost (per kg)	Isolate cost excluding processing (per kg)
Inca Peanut	Unknown	$27.6	$4,255
Soybean	3,060	$0.33	$1.75
Rapeseed	509	$0.24	$6.10
Cottonseed	187	$0.27	$3.21



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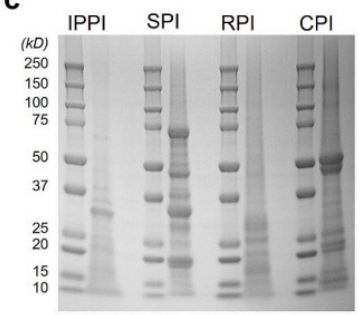

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[Stout et al., 2023]

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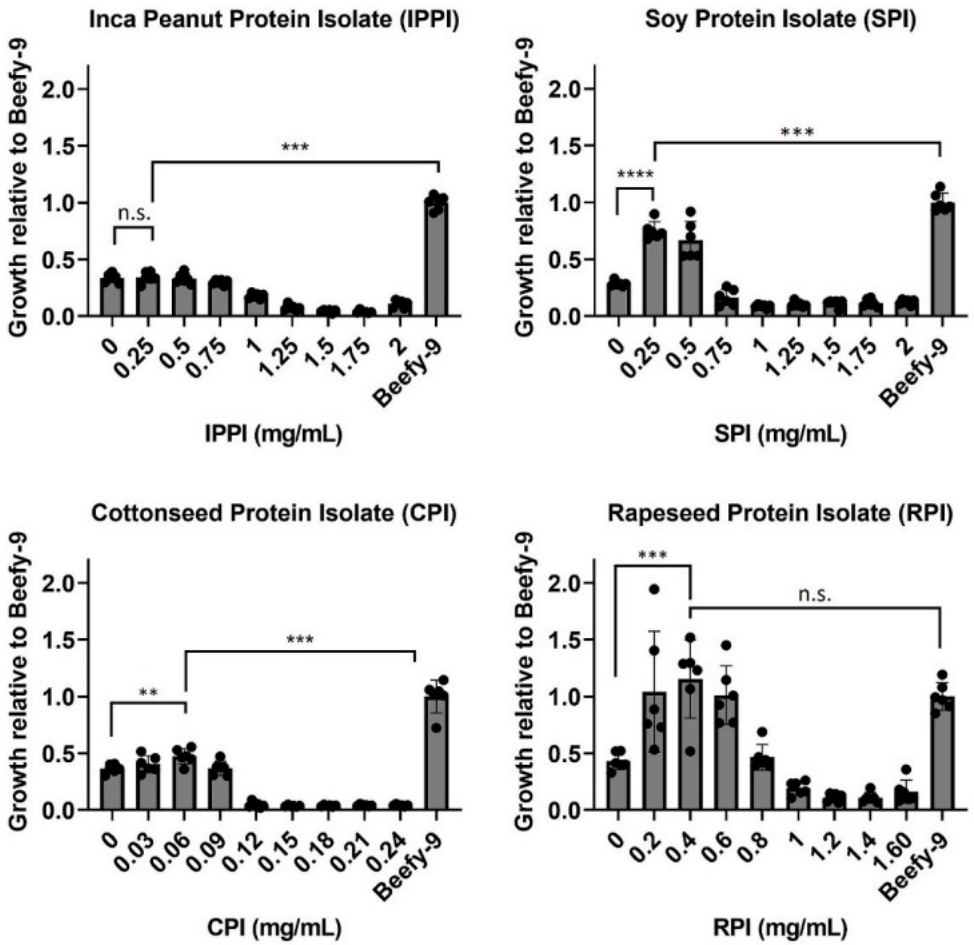

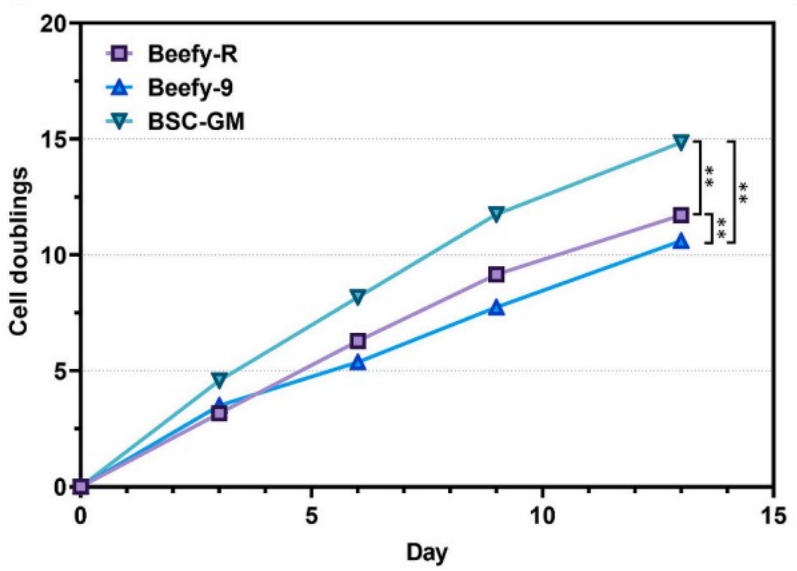

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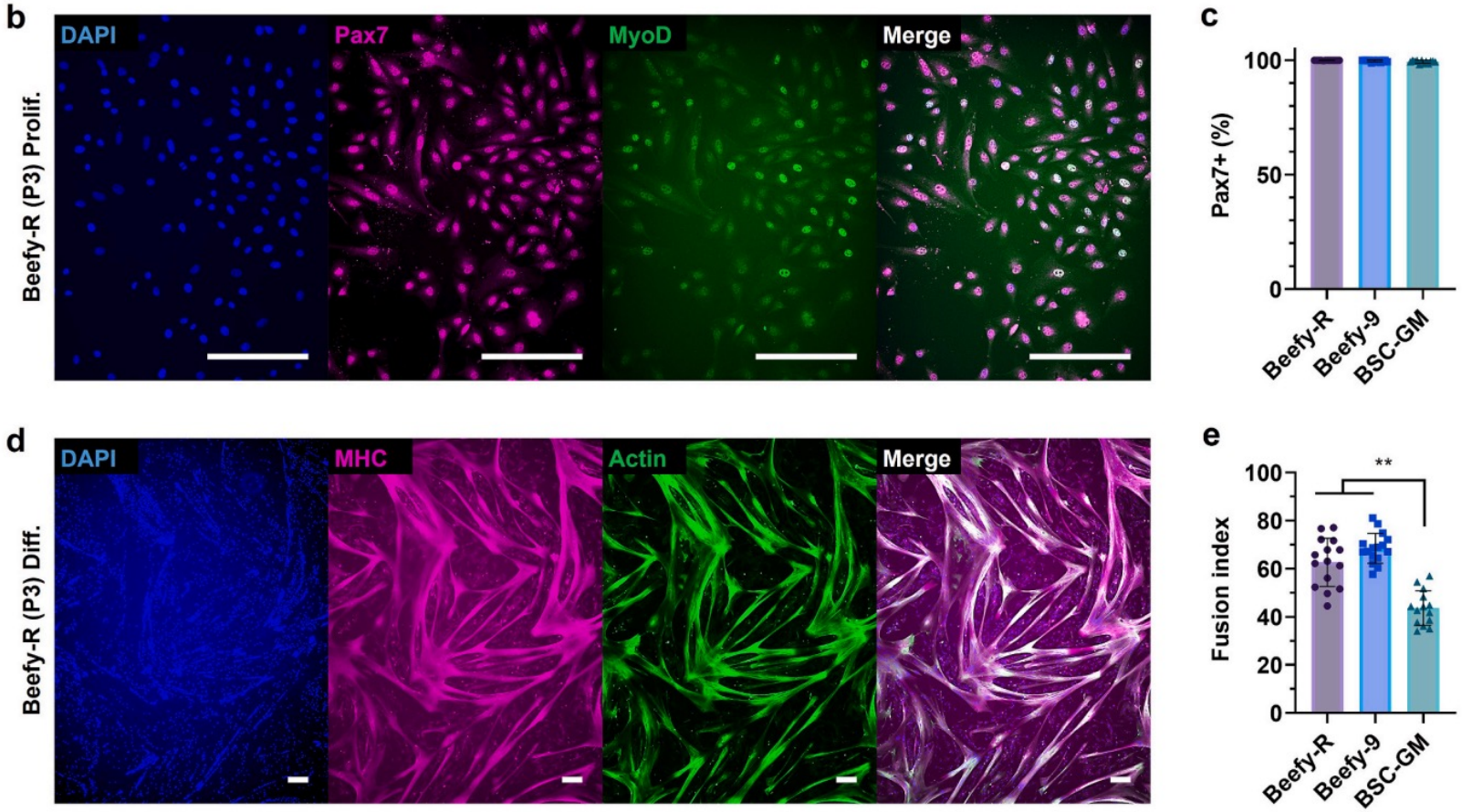
[Stout et al., 2023]

SOLVING THE ALBUMIN PROBLEM

Rapeseed protein isolate is a particularly strong candidate for an ultra low-cost albumin alternative.



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[Stout et al., 2023]

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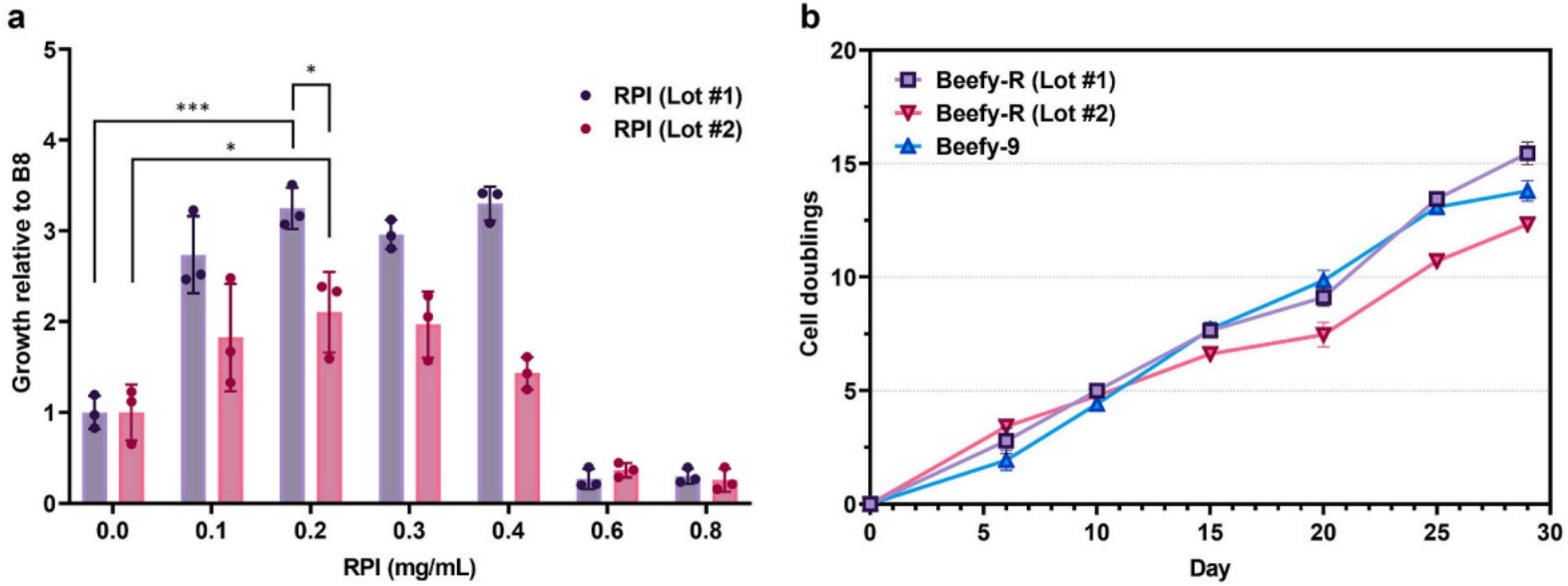

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[Stout et al., 2023]

Deco Labs created “cAlbumin” as a commercial solution to the albumin problem.

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[Ying et al., 2025]

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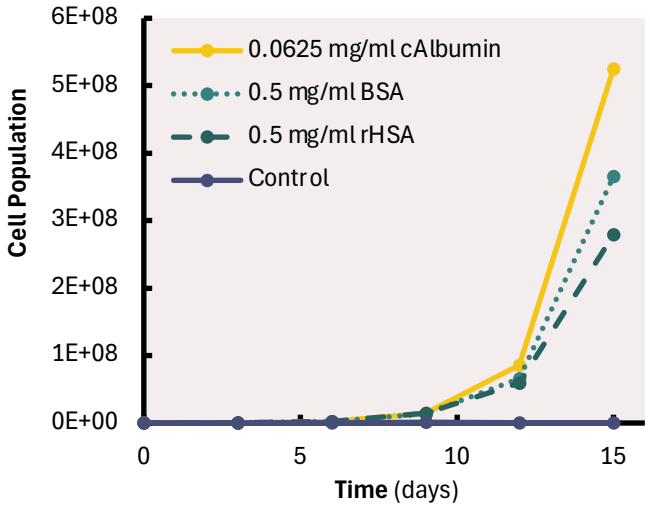

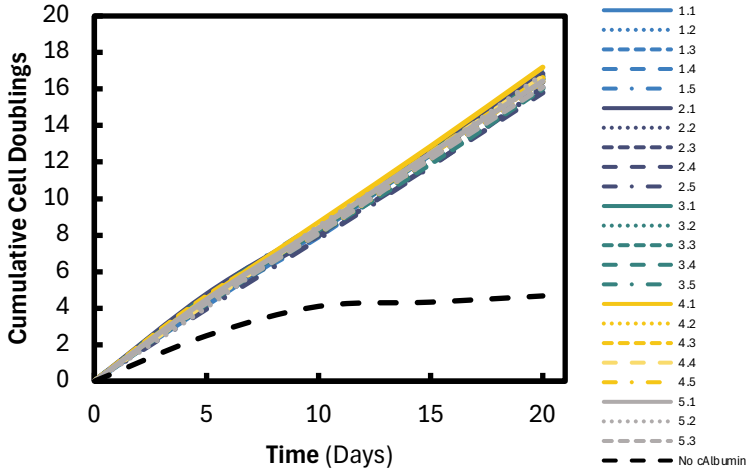

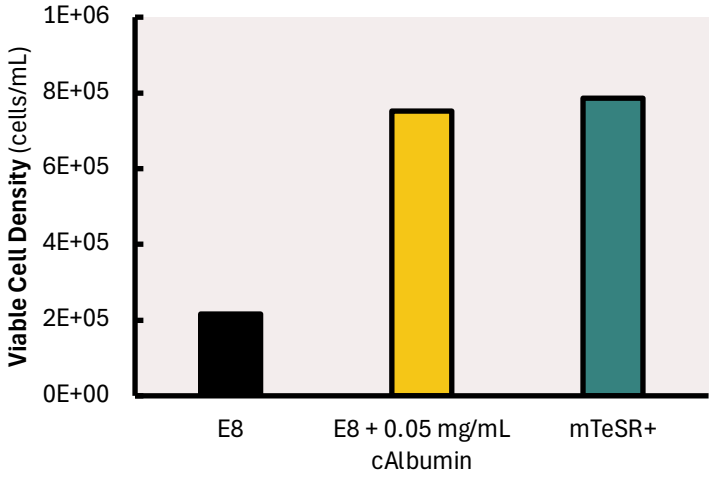

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ENABLING PRICE PARITY

cAlbumin is 1000x less costly than rAlbumin, paving the way for price parity of cultivated products

Cost		Concentration		Media conversion		Cost added	
$20,000 USD/kg	X	0.8 g/L	X	20 L/kg	=	$320 USD/kg	4000% of wholesale beef prices
$350 USD/kg	X	0.05 g/L	X	20 L/kg	=	$0.35 USD/kg	4.3% of wholesale beef prices

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OTHER PROBLEMS

After albumin, amino acids, recombinant proteins, and growth factors remain as large bottlenecks for the industry.

cAlbumin™

cAminos™

pFactor1™

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ACKNOWLEDGEMENTS

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QUESTIONS

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