



Kerra

Replacing petrochemicals with protein, at petrochemical cost.

A materials company that makes bio-based materials price-competitive with petrochemicals.

We extract keratin from waste wool and modify the protein to replace petrochemicals across cosmetics, coatings, textiles, packaging, and industrial chemicals

\$5 / kg

Cost competitive with petrochemicals

\$0 CapEx

Capital-light market entry

2-3 yrs

to first cash-flow-positive product line

Step 1: Extract

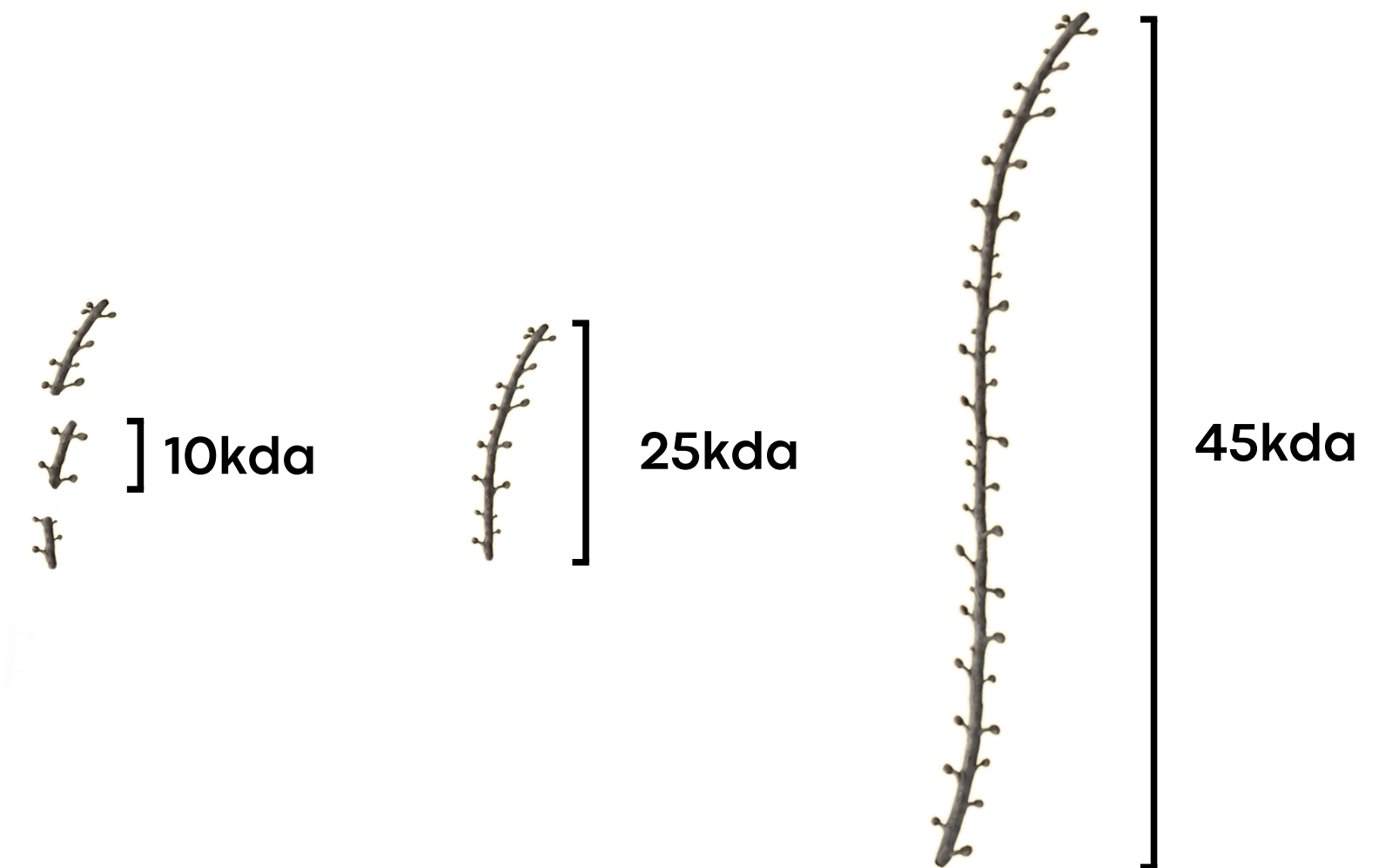
Preserving intact, high-molecular-weight protein chains

4x larger than today's keratin on the market

Creates a structure that can form films, stretch, and endure.

Step 2: Modify

Tuning the protein for different applications



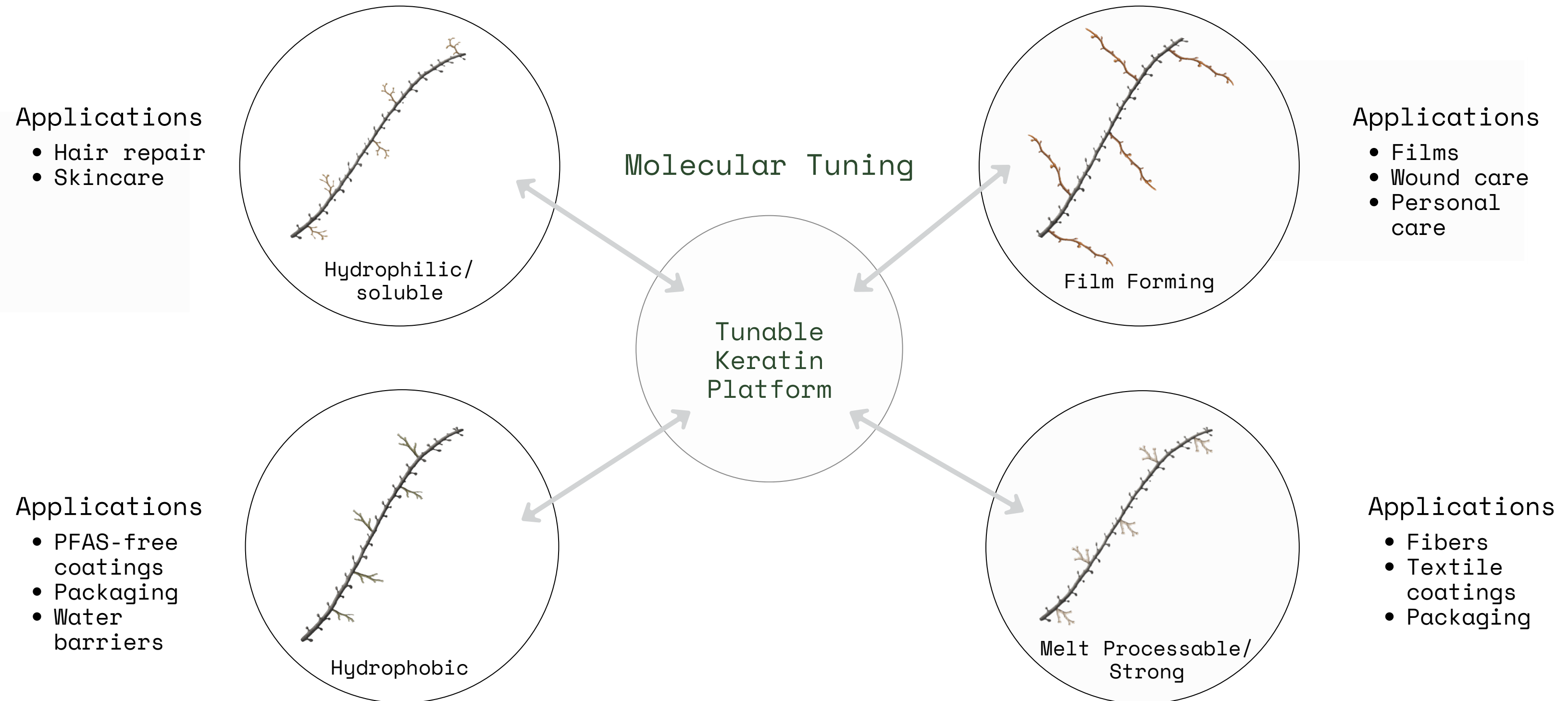
*Today's keratin
on the market*



Kerra

Intact Structure → Tunable Chemistry → Multiple Markets

Our materials discovery engine screens thousands of modifications to help us design new protein configurations.

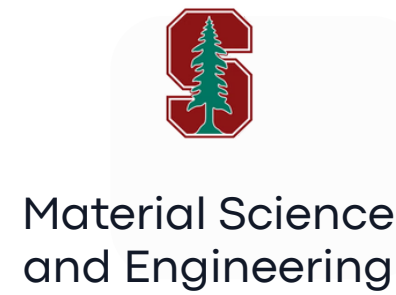


Co-founders



Caraíosa O'Farrell

Co-founder, CEO



Material Science
and Engineering



Jacob Dunlop

Co-founder, CTO



Extraction chemistry,
protein modification,
and process
development

Advisors



Nitin Parekh

Founding Director of the High Impact
Technology (HIT) Fund



Randy Harwal

Former Patagonia & Under Armour Executive
Expert on Scale-Up, Manufacturing, and
Industry Adoption



Arti Gudal

Former Country Manager, Woolmark India
Expert on global wool supply chains

Technical Team



Euisun Song, PhD

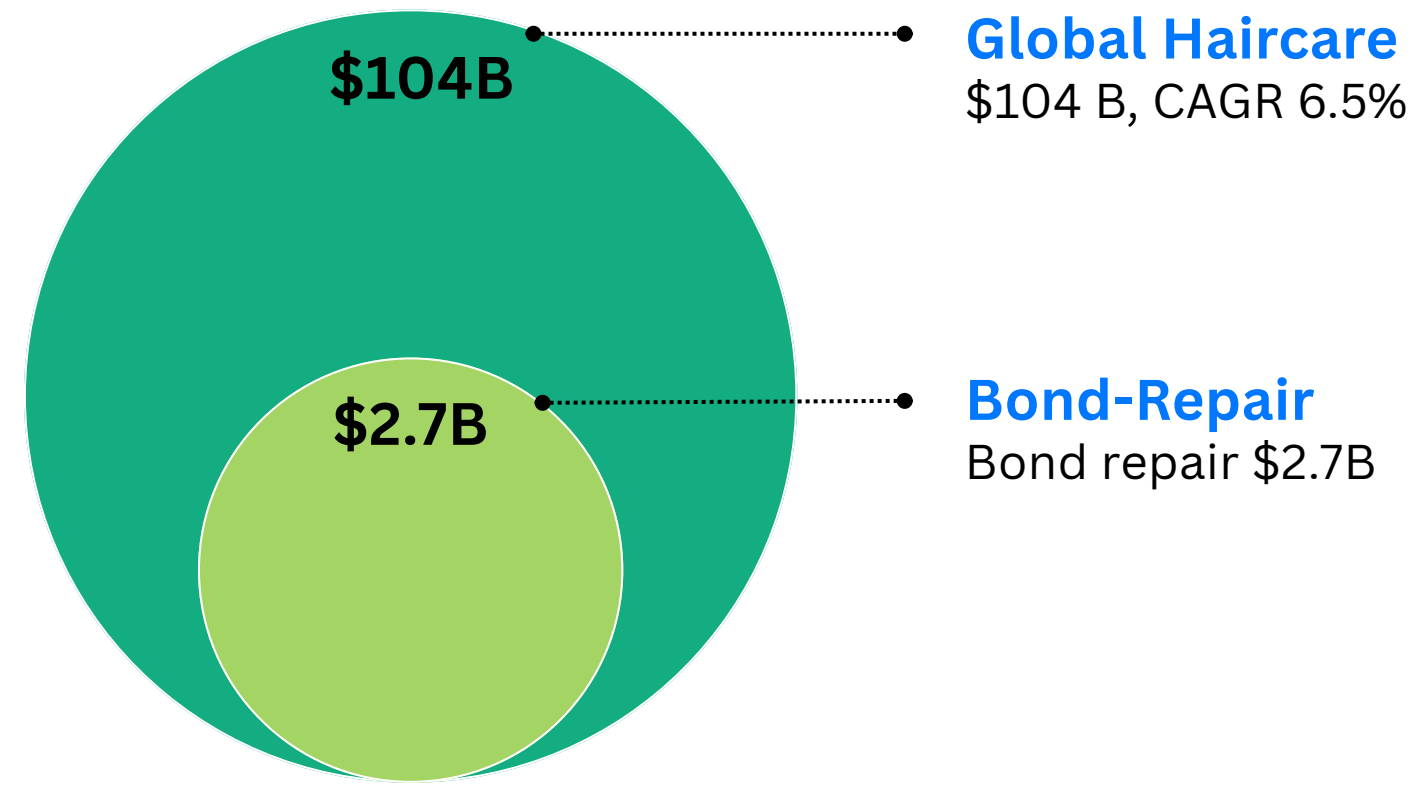
Postdoctoral Fellow, Stanford
Kerra Research Collaborator



Elaine Ma, PhD

Postdoctoral Fellow, Stanford
Kerra Research Collaborator

Our beachhead: the \$2.7B hair repair market where we already outperform the market leader.



Competitive Landscape

- Olaplex: \$400M revenue, synthetic maleic acid chemistry, bond-builder market leader
- K18: Acquired by Unilever for \$1.35B, synthetic peptide, reached \$100M revenue by year 3

The gap: no natural ingredient matches synthetic performance — we outperform it.

We outperform Olaplex by 62%

Our regenerative cosmetic ingredients strengthen hair more than Olaplex (the leading hair repair product).

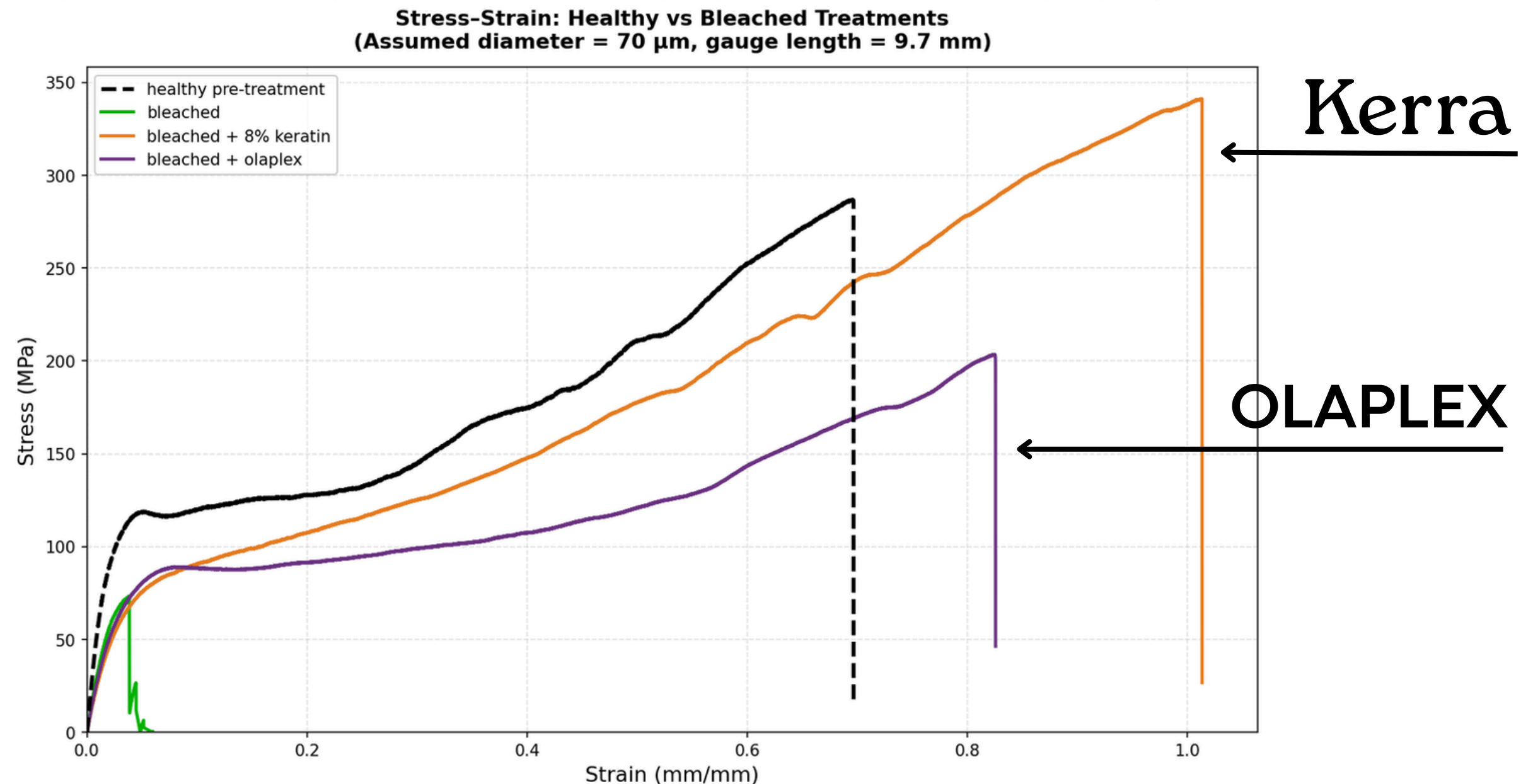


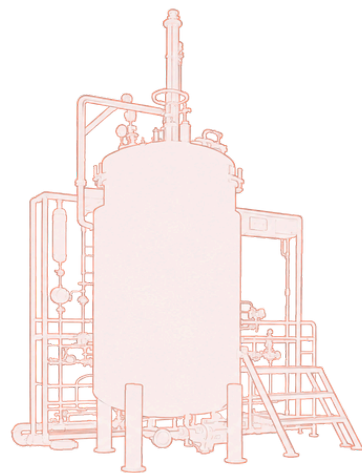
Figure: Based on replicated, internal stress-strain tensile testing on bleached hair fibers

We enter by building partnerships in beauty.
Industrial-scale petrochemical replacement is the destination.



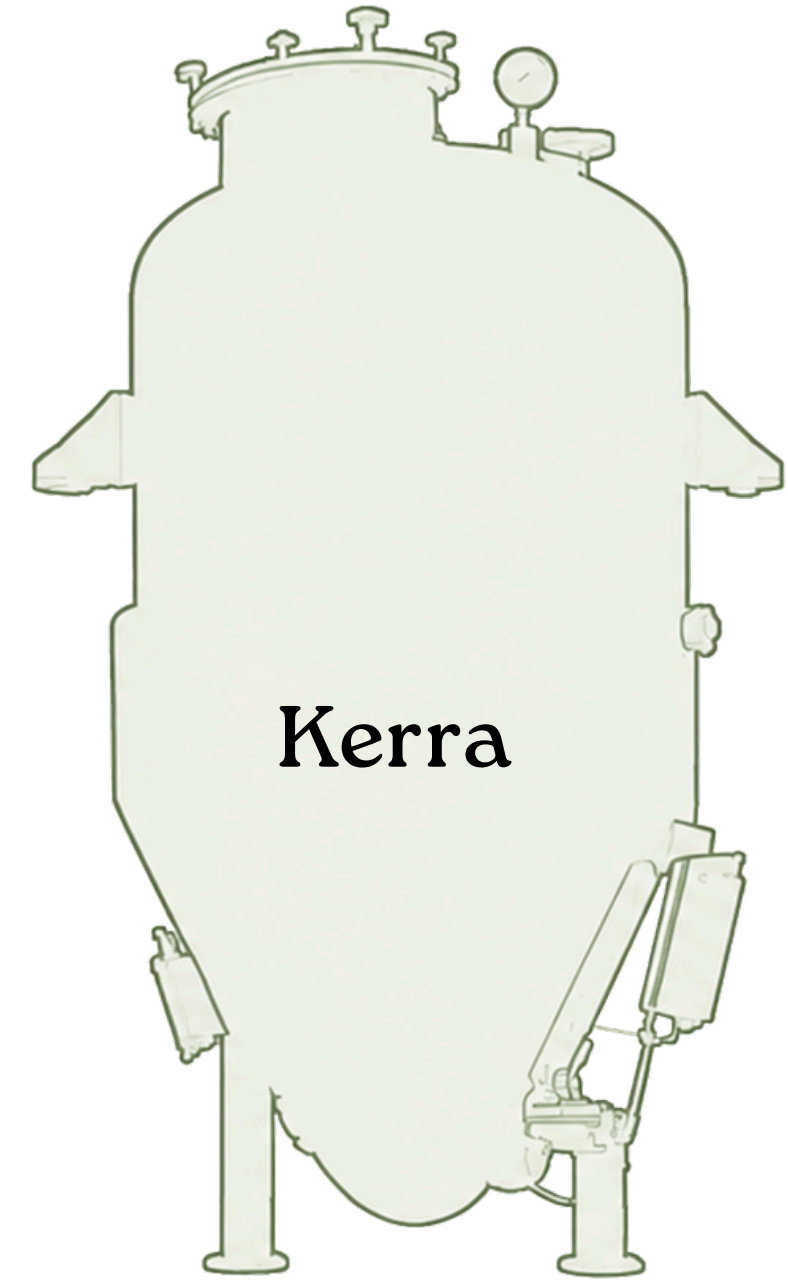
Equipment Comparison: Kerra vs Biofermentation

Kerra bypasses the biological challenge of manufacturing large structural proteins through fermentation by recovering them directly from abundant waste feedstocks.



1,250L Biofermentation Vessel:
\$63k

**8x Larger,
Same Price**



10,000L Kerra Extraction Vessel:
\$65k

Fermentation benchmark informed by peer-reviewed recombinant protein manufacturing economics (Edlund et al., 2018).

A cheaper, less capital-intensive way to replace petrochemicals with proteins.

Precision fermentation

\$23/kg

Production cost, fully optimized case, 3,550 t scale (17th plant)

3.8x
cheaper

Kerra

\$6/kg

Production cost, first plant, 3,550 t scale

Fermentation benchmark from peer-reviewed recombinant protein manufacturing economics (Edlund et al., 2018).

Kerra scales to reach competitive parity with petrochemicals:

\$7.74/kg

1,500 t scale

\$6.23/kg

3,550 t scale

\$4.91/kg

10,000 t scale

Figures shown reflect our India manufacturing TEA; we've modeled Ireland manufacturing in parallel, with its own cost and sourcing profile.

Pre-seed: \$2.2M · 24-month runway

Milestones this pre-seed raise achieves

01

100 kg production demonstrated (3000 L scale)

02

Two additional biopolymers advanced to TRL 5, beyond hair repair (downstream testing support from CBE JU partners)

03

IP portfolio expanded: 5 new patent filings

04

Core team built: 2 hires — one polymer engineer, one chemical engineer

05

Supply 15 kg of commercial-grade keratin to our JV for a hair repair pilot;
Secure LOI for our second application (film-forming polymer) with a new commercial partner

Traction so far

\$130k in non-dilutive funding secured

- Stanford TomKat Grant \$50K
- Stanford HIT Fund \$80K

Formulator partner secured:

Strategic formulation partner secured UK-based, developing first commercial hair repair application

IP portfolio

One patent filed and one invention disclosure filed.