

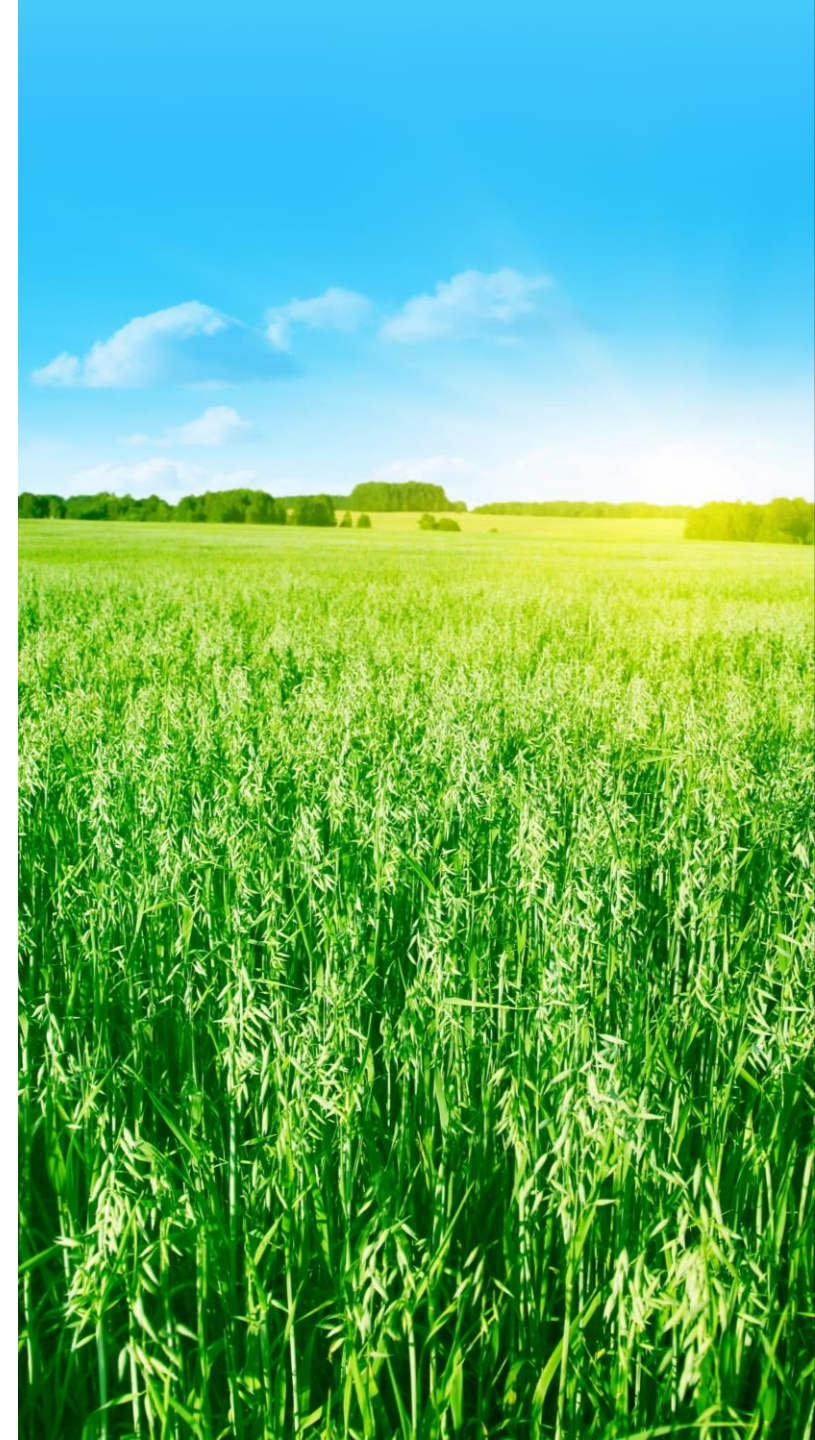


TECHNICAL COMPARISON · FOR FORMULATORS & CONTRACT MANUFACTURERS

CP Oat Beta-Glucan vs. Hyaluronic Acid

The formulator's case for switching to Ceapro's CP Oat Beta-Glucan Liquid — matched-molecular-weight hydration that lasts, plus barrier and soothing benefits HA can't deliver alone.

Ceapro Inc. · a subsidiary of Cosciens Biopharma · Edmonton, Alberta, Canada





THE MARKET SHIFT

Hydration was the easy part.

Customers want more from a single active.

Hyaluronic acid earned its reputation by making hydration easy to understand and easy to feel. But today's consumers — and the formulators serving them — want comfort, resilience, and calmer-looking skin from ingredients they recognize and trust. That raises the bar for what a hydrating active must do.



More than moisture

Barrier support, soothing, and recovery — not hydration alone.



Clean & plant-based

Recognizable, naturally derived actives with a clean-label story.



Formulator-friendly

Multifunctional actives that simplify the formula and the label.

The thesis

Ceapro Oat Beta-Glucan matches HA on hydration — and lasts longer — while adding barrier repair and soothing, at cost comparable to HA.



THE CASE AT A GLANCE

Five reasons formulators switch to Oat Beta-Glucan



Hydration that lasts

+16%

skin hydration at 24 h vs. +3%
for HA — in a matched-MW
head-to-head.



More than hydration

3-in-1

hydration + barrier repair +
soothing from one natural
active.



Drop-in easy

pH 2–10

1–10% use, all water-based
forms, 25–55 °C. No special
handling.



Clean & plant-based

COSMOS

Ecocert/COSMOS, non-GMO,
gluten-, allergen- & fragrance-
free.



Secure supply

#1

Made in Canada — the world's
largest oat exporter means
economical cost.

Hydration figures: Dermscan Poland biometrological study #11E1285 (2011), corneometer, single application, n = 8–11 vs. untreated zone.



What HA does well — and where formulators hit its limits

HA's real strengths



Fast, visible effect

Immediate plumping and surface hydration formulators and consumers can feel.



High water-binding capacity

At the right molecular weight, holds up to ~1,000× its weight in water.



Recognition & demand

A familiar, consumer-trusted hydration story that markets itself.

The limits you design around



Performance is molecular-weight-dependent

Low-MW HA has been associated with pro-inflammatory signaling and trans-epidermal water loss.



Limited oxidative stability

HA can degrade relatively quickly once exposed to air/oxygen, shortening its working benefit.



Essentially a single-benefit active

Delivers hydration — but little barrier repair, soothing, or recovery on its own.

Sources: Waggett et al., *EMJ Dermatology* (2024); Zanchetta et al., *Biomolecules/MDPI* (2025); Liu et al., *Microbial Cell Factories* (2011).



MEET THE ACTIVE

Oat Beta-Glucan

A plant-derived polysaccharide extracted from oat cell walls — a linear chain of glucose units joined by β -(1 $\rightarrow$ 3) and β -(1 $\rightarrow$ 4) linkages. That structure sets it apart from fungal β -glucans and drives its skin activity.



Humectant + film-former

Draws in moisture and forms a light, breathable film that seals hydration around skin cells.



Barrier + soothing built in

Supports and reinforces the skin barrier while calming the look of redness and irritation.



High purity, high MW

1.0–1.5 $\times 10^6$ Da, not chemically modified — consistent, controlled, and formulation-ready.

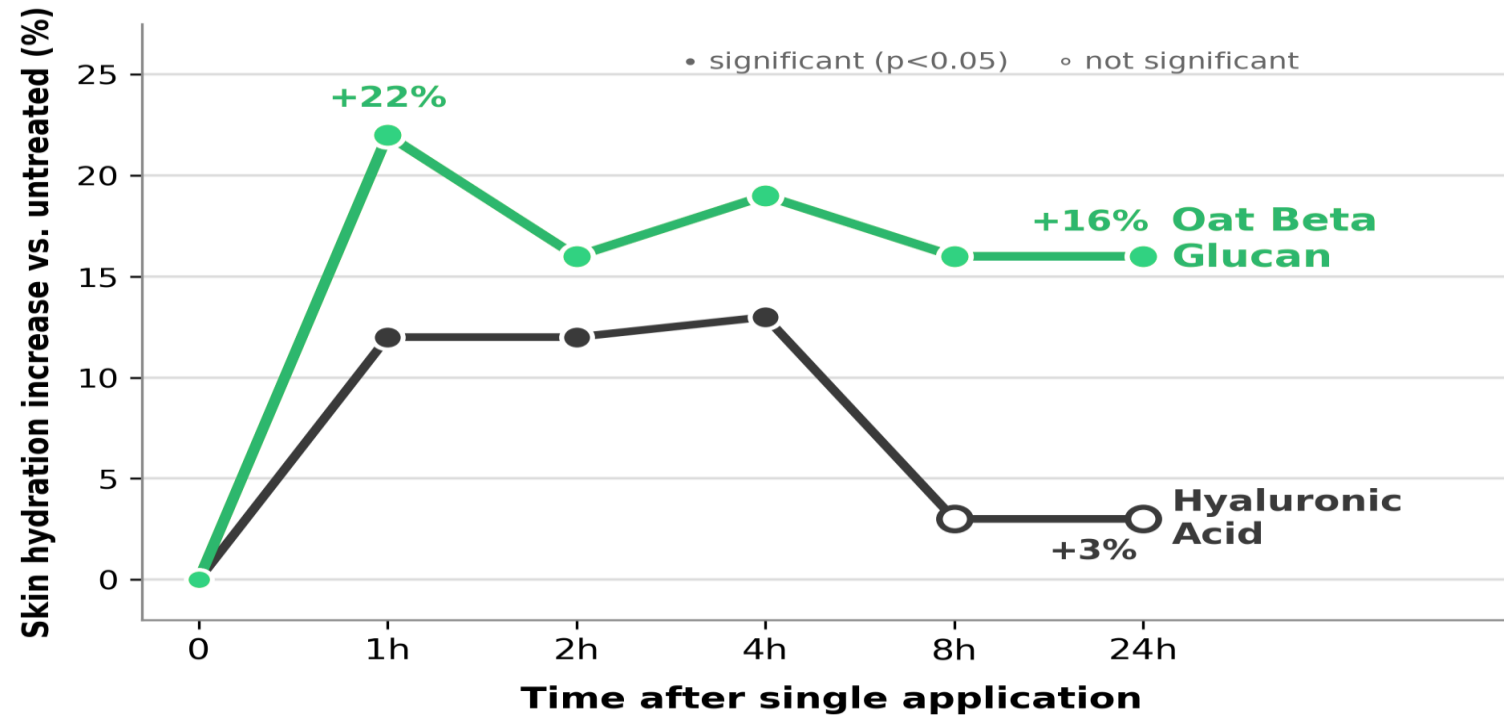


Distinct from fungal β -glucans · A component of colloidal oatmeal — an FDA-recognized OTC skin protectant (Final Monograph, 2003).



24-hour hydration — and it holds.

Oat Beta-Glucan peaks fast and stays significant to 24 hours. Matched-MW sodium hyaluronate fades to a non-significant level by 8 hours.



+22%

Peak hydration at 1 h

+16%

Still elevated at 24 h (significant)

+3%

HA at 8–24 h (not significant)

Source: DermScan Poland biometrological study #11E1285 (2011) — corneometer, single application, $n = 8-11$, vs. untreated zone. Filled markers = significant ($p < 0.05$); open markers = not significant.

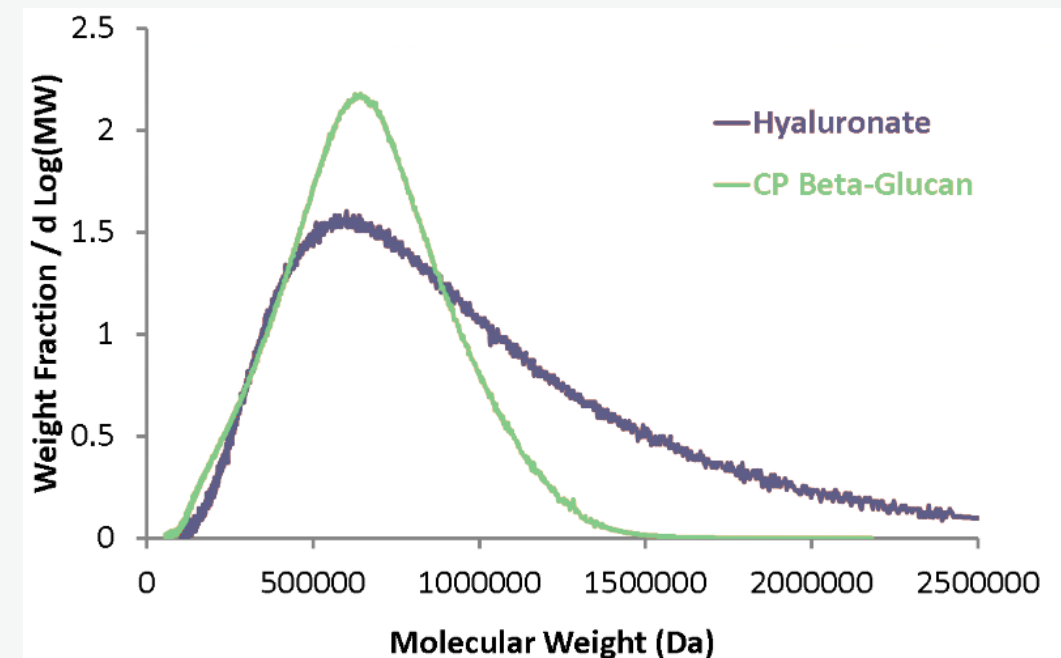


Matched molecular weight — a like-for-like test.

The hydration result isn't a high-MW-vs-low-MW mismatch. Ceapro Oat Beta-Glucan (1.0–1.5 M Da) was compared against sodium hyaluronate of a comparable molecular-weight distribution — so what you see is a difference in performance, not in grade.

- ✓ Both actives share overlapping MW distributions centered near ~0.6 M Da.
- ✓ Removes the usual apples-to-oranges objection in HA comparisons.
- ✓ Strengthens the 24-hour hydration claim with a controlled reference.

Molecular-weight distribution

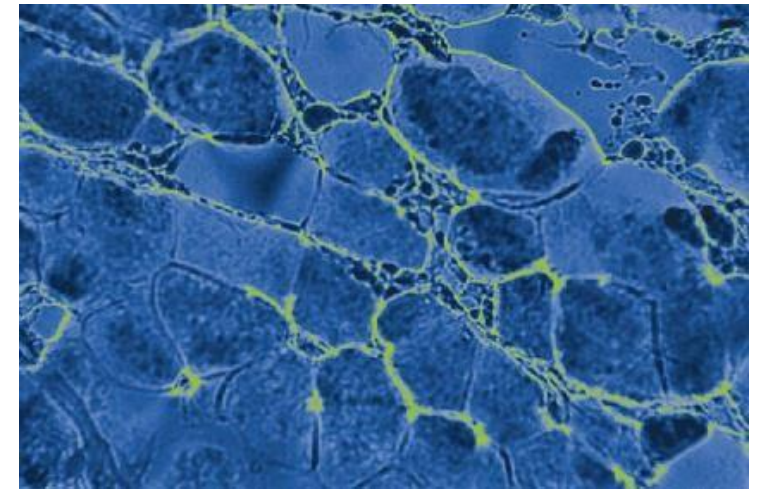
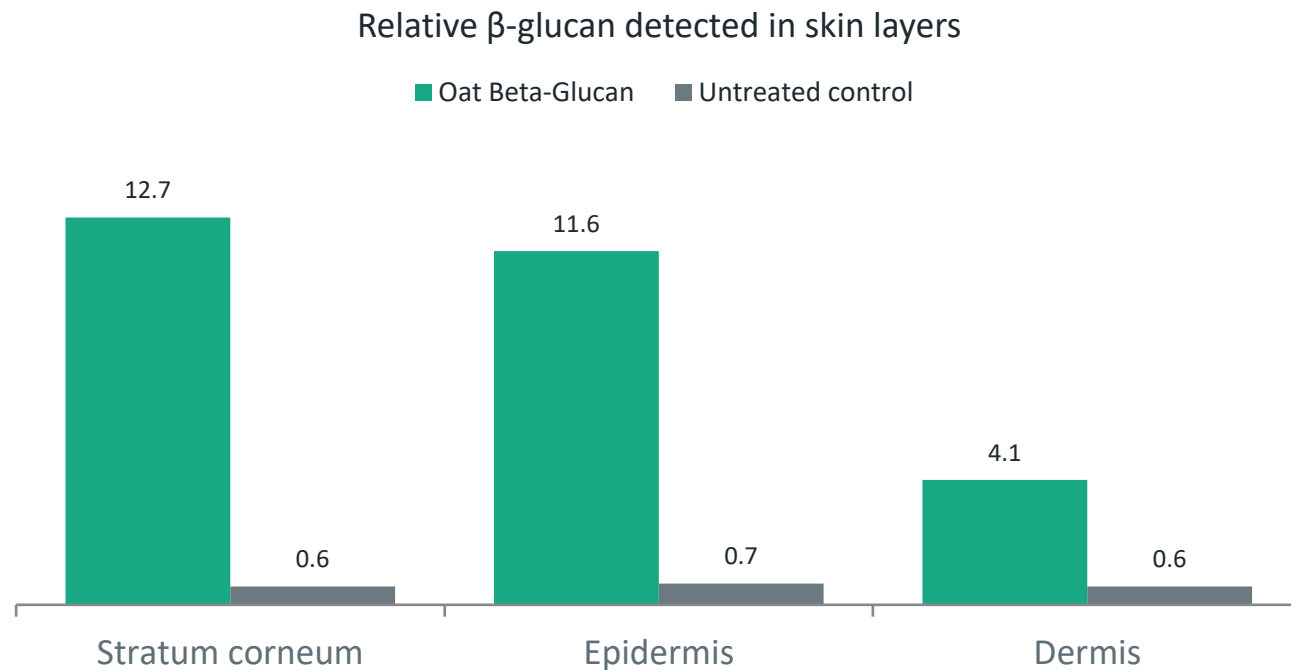


Overlaid MW distributions: CP Beta-Glucan vs. hyaluronate. Ceapro analytical data.



It reaches where it works.

In human-skin testing, Oat Beta-Glucan showed marked penetration into the stratum corneum and epidermis — visualized by Calcofluor White fluorescent staining.



Calcofluor White staining • $\times 250$ magnification

Human skin treated with a single application of 0.5% (w/w) OBG solution (5 mg/cm²). Ceapro study data.



THE MULTIFUNCTIONAL EDGE

Beyond hydration: one active, many benefits

Where HA is largely a hydration story, Oat Beta-Glucan brings a broader, science-backed profile — the reason it's one of the most multifunctional natural actives available.



Barrier repair

Repairs and reinforces the epidermal barrier via Dectin-1 signaling.



Soothing & calming

Naturally anti-inflammatory; helps reduce the look of redness and irritation.



Antioxidant activity

Helps counter oxidative stress that ages and stresses skin.



Microbiome support

Acts as a prebiotic, supporting a balanced, healthier skin barrier.



Recovery support

Literature links β -glucan to epithelial repair and post-procedure skin recovery.



Gentle for all skin

Excellent tolerability — suited to sensitive skin and frequent use.

Sources: Jing et al., Br. J. Pharmacology (2023); Sur et al., Arch. Dermatological Research (2008); Cerio et al., J. Drugs in Dermatology (2010); Majtan & Jesenak, Molecules (2018).



THE MARKETING PAYOFF

Claims your brand can put on pack

One active substantiates a full claims stack — the reason Oat Beta-Glucan earns its place on the label, not just in the formula.



24-hour hydration

Clinically shown to hold hydration through 24 h in a matched-MW study.



Barrier support

Reinforces the skin's moisture barrier via the Dectin-1 pathway.



Soothing & calming

Naturally soothing — helps reduce the look of redness.



Plant-based & vegan

Oat-derived and naturally sourced; non-GMO and gluten-free.



Microbiome-friendly

Acts as a prebiotic, supporting balanced skin flora.



Clean & retailer-ready

COSMOS-approved and allergen-free; clears Sephora, Credo & Ulta standards.

Final claims must be confirmed against each target market's regulations and the finished-formula dossier.



SIDE BY SIDE

Oat Beta-Glucan vs. Hyaluronic Acid

Dimension	Oat Beta-Glucan	Hyaluronic Acid
Chemistry & MW	Linear glucose polysaccharide (β -1,3 / β -1,4) from oat cell walls; high MW 1.0–1.5 M Da, not modified	Glucuronic acid + N-acetylglucosamine chain (β -1,4 / β -1,3); performance varies by MW grade
Hydration	Significant increase held through 24 h in a matched-MW study	Strong immediate surface hydration; can hold ~1,000× its weight in water
Skin barrier	Repairs and reinforces the barrier (Dectin-1 signaling)	Supports surface hydration; barrier benefit is MW-dependent
Soothing / inflammation	Naturally soothing; associated with less visible redness & irritation	Low-MW HA associated with pro-inflammatory signaling & TEWL
Stability	Stable liquid; not prone to rapid oxidative degradation	Short half-life; degrades on exposure to air/oxygen
Microbiome	Prebiotic support for barrier & microbiome balance	Limited direct microbiome role
Benefit breadth	Hydration + barrier + soothing + antioxidant + recovery	Hydration, plumping, wrinkle appearance, elasticity

Comparative statements reflect published literature and Ceapro study data; low-MW effects are molecular-weight-dependent. See References.



THE DROP-IN GUIDE

Formulator's spec sheet

CP Oat Beta-Glucan Liquid · Product # 901-3045

INCI NAME

Avena Sativa (Oat) Bran Extract, Sodium Benzoate, Potassium Sorbate

ACTIVE CONTENT

1% w/w oat beta-glucan (spec 0.9–1.1%)

MOLECULAR WEIGHT

1.0–1.5 × 10⁶ Da · not chemically modified

APPEARANCE

Clear, colourless to slightly yellow, odourless liquid

RECOMMENDED USE LEVEL

1.0 – 10.0%

FORMULATING PH RANGE

2 – 10 (very wide compatibility)

PROCESSING TEMPERATURE

25 – 55 °C · add to the water phase, mix well

SOLUBILITY

Water-soluble — suitable for all water-based product forms

PRESERVATION / BASE

0.5% sodium benzoate + 0.3% potassium sorbate, in purified water

VISCOSITY / TURBIDITY

≥100 cP · ≤40 NTU · microbial <100 cfu/mL

PACK SIZES

5 kg · 20 kg · 200 kg

SHELF LIFE

2 years, unopened · store at room temperature

Switching from HA: drop it into the water phase like an HA solution — the pH 2–10 window covers most systems, and it pairs with HA for immediate + lasting hydration.



THE ECONOMICS

The real cost comparison is at the formula level

Per kilo, CP Oat Beta-Glucan Liquid is comparable to hyaluronic acid, but the real advantage shows up when you count what one active replaces — and what you stop paying for around it.

	HA + SUPPORTING ACTIVES	CP OAT BETA-GLUCAN
Actives to cover the claim set	3–4 single-benefit actives	1 multifunctional active
Suppliers to qualify & document	Up to 4	1 traceable source
On-label ingredient lines	Several	One active INCI
pH & buffering work	Often required	None — stable at pH 2–10
Oxidative stability	Air-sensitive, shorter life	Stable liquid — less waste

Illustrative of formulation economics, not a price quote — actual cost-in-use depends on use level and target claims.



CLEAN-LABEL & REGULATORY

Retailer-ready, globally compliant

A clean-label profile that clears the standards your brand customers are formulating to — and the markets they sell into.



**Ecocert / COSMOS
Approved**



Non-GMO



Gluten-Free



Allergen-Free



Fragrance-Free



Not Tested on Animals



Naturally Derived



China Compliant

Meets leading retailer clean standards

- Clean at Sephora
- Credo Clean Standard
- Ulta Beauty Conscious Beauty

One active, many applications

Skin care · Colour & make-up · Hair & scalp · Sun care ·
Nutraceuticals · Pet health & care



SUPPLY & SOURCING

Reliable supply — from the world's oat leader



Made in Canada, at scale

30,000 sq ft GMP bio-processing facility in Edmonton, Alberta — integrated R&D, pilot, and commercial production under one roof.



Sourced from the leader

Canada is the world's largest oat exporter — about 63% of global oat exports — from regeneratively grown North American crops.



Proprietary processing

Patented concentration technology (incl. PGX) and scalable chromatography yield a consistent, high-purity, high-MW liquid.



Priced to switch

Cost comparable to hyaluronic acid, with secure, traceable supply and a one-stop portfolio of oat actives.



30 years of oat expertise behind the ingredient



Credibility & track record

Established 1994. Oat experts trusted by global megabrands for 20+ years, with proven efficacy and clinical data.



Deep technical bench

A multidisciplinary team spanning natural-product chemistry, microbiology, biochemistry, immunology, and process engineering.



End-to-end formulation support

One-stop portfolio of oat actives, expert R&D + QA, full documentation (TDS, SDS, CoA, claims support), and custom formula development.



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Request a sample and let's formulate!

Tell us your target claims and base — our team will recommend the right Ceapro oat active and a drop-in starting point for your system.

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