



FREE GUIDE

GHK-CU & THE SKIN PEPTIDES

COPPER PEPTIDE · MATRIXYL · ARGIRELINE · COLLAGEN

Peptides have been in skincare for more than 20 years. What the studies found for firmness, fine lines and hydration – and how to read the names on the label.

@PEPTILEX

From the book Peptilex – The Peptide Encyclopedia

THE BIG PICTURE

FOUR KINDS OF SKIN PEPTIDES

On an ingredient list, skincare peptides hide behind names like 'palmitoyl tripeptide' or 'copper tripeptide-1'. Cosmetic chemists sort them into four families by the job they are meant to do:

1 SIGNAL MORE COLLAGEN

Collagen fragments that tell skin cells to make more – e.g. palmitoyl pentapeptide-4 (Matrixyl).

2 CARRIER DELIVERS COPPER

Carries trace elements to the skin – the copper peptide GHK-Cu.

3 NEURO SOFTENS LINES

Gently turns down the nerve-to-muscle signal – acetyl hexapeptide-8 (Argireline).

4 ENZYME GUARDS COLLAGEN

Slows enzymes that break down collagen – e.g. soy or rice peptides.

These families describe the idea; whether a peptide reaches the cells it should influence is the real test. Peptides are relatively large and water-loving, while the skin's outer layer is built to keep such molecules out – so manufacturers attach a fatty-acid chain (the 'palmitoyl' in many names) or use special formulations to help them in.

20+ YEARS OF SKIN PEPTIDES

1973

GHK DISCOVERED

Copper peptide found in human blood

2002

ARGIRELINE

First lab and human studies published

2005

MATRIXYL TRIAL

93 women, 12 weeks: fewer fine lines than placebo cream

THE RESULTS

WHAT THE SKIN STUDIES FOUND

RANDOMIZED TRIALS · PEPTIDE VS CONTROL

GHK-Cu gel · Wound Repair Regen 1994

Diabetic foot ulcers · median wound closure



Argireline cream · Am J Clin Dermatol 2013

60 adults · 4 weeks · anti-wrinkle efficacy



—50%+

natural GHK levels in the blood fall by more than half between age 20 and 60

12 WEEKS

GHK-Cu creams improved firmness, skin density and fine lines in studies with 71, 41 and 67 women

26 TRIALS

1,721 people: oral collagen peptides improved skin hydration and elasticity (meta-analysis, Nutrients 2023)

—20%

eye-wrinkle volume after 8 weeks of collagen peptides (randomized, 114 women, 2014)

Sources: Mulder GD et al., Wound Repair Regen 1994; Wang Y et al., Am J Clin Dermatol 2013; Pickart L et al., BioMed Res Int 2015; Pu SY et al., Nutrients 2023; Proksch E et al., Skin Pharmacol Physiol 2014.

THE NAMES BEHIND THE BRANDS

INCI

COPPER TRIPEPTIDE-1

= GHK-Cu, the copper peptide. Grade C for topical skin use.

INCI

PALMITOYL PENTAPEPTIDE-4

= Matrixyl. 93-women split-face trial: fewer fine lines than placebo cream.

INCI

ACETYL HEXAPEPTIDE-8

= Argireline (formerly acetyl hexapeptide-3): the gentle, needle-free option.

FOOD

HYDROLYZED COLLAGEN

= collagen peptides. Grade B for skin: dozens of randomized trials.

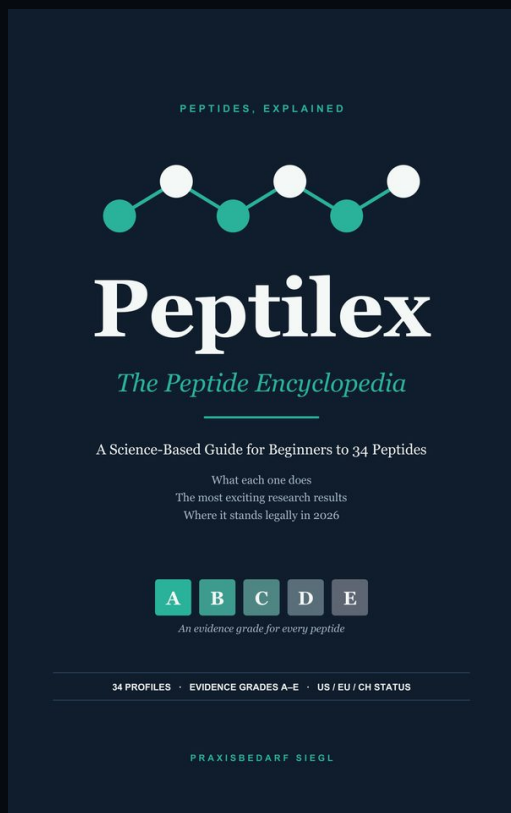
On the skin, these peptides are generally well tolerated; irritation is possible as with any cosmetic ingredient. Status: permitted cosmetic ingredients (collagen: food) in the US, EU and Switzerland.

THE OPEN QUESTIONS — ANSWERED IN THE BOOK

- ? Cream versus injection: why the evidence for GHK-Cu is completely different for the two.
- ? How does GHK-Cu compare with retinoids – and what is still missing?
- ? Do collagen benefits hold up in independently funded trials? The 2025 funding analysis.
- ? How much of a peptide cream's effect comes from the peptide – and how much from the cream?

PEPTILEX — THE PEPTIDE ENCYCLOPEDIA · CHAPTER 12

34 PEPTIDES. ONE BOOK.



PEPTILEX THE PEPTIDE ENCYCLOPEDIA

The skin chapter covers GHK-Cu, Matrixyl, Argireline, collagen peptides and melanotan II – next to 29 more peptide profiles.

- What each peptide is and how it is thought to work
- The most exciting results – cells, animals and people
- 2–4 key studies per profile, with sources
- A–E evidence grade and status in the US, EU and Switzerland
- Known risks and the open questions research is chasing

KINDLE

PAPERBACK

HARDCOVER

amazon.com

FOLLOW THE TRIALS EVERY WEEK

The free Peptilex study tracker lists the registered trials and newest papers, updated weekly:
peptilex.com/tracker/ghk-cu.html

Important: This guide is for general education only. It is not medical advice and does not recommend any substance, dose or treatment. Results from cells or animals do not show that a substance works or is safe in people. Talk to your doctor before making health decisions. Sources: Peptilex – The Peptide Encyclopedia (2026) and the studies named. Created with AI assistance and editorial review. © 2026 Praxisbedarf Siegl.