

Welcome



Biodesign Proteins for Personal Care

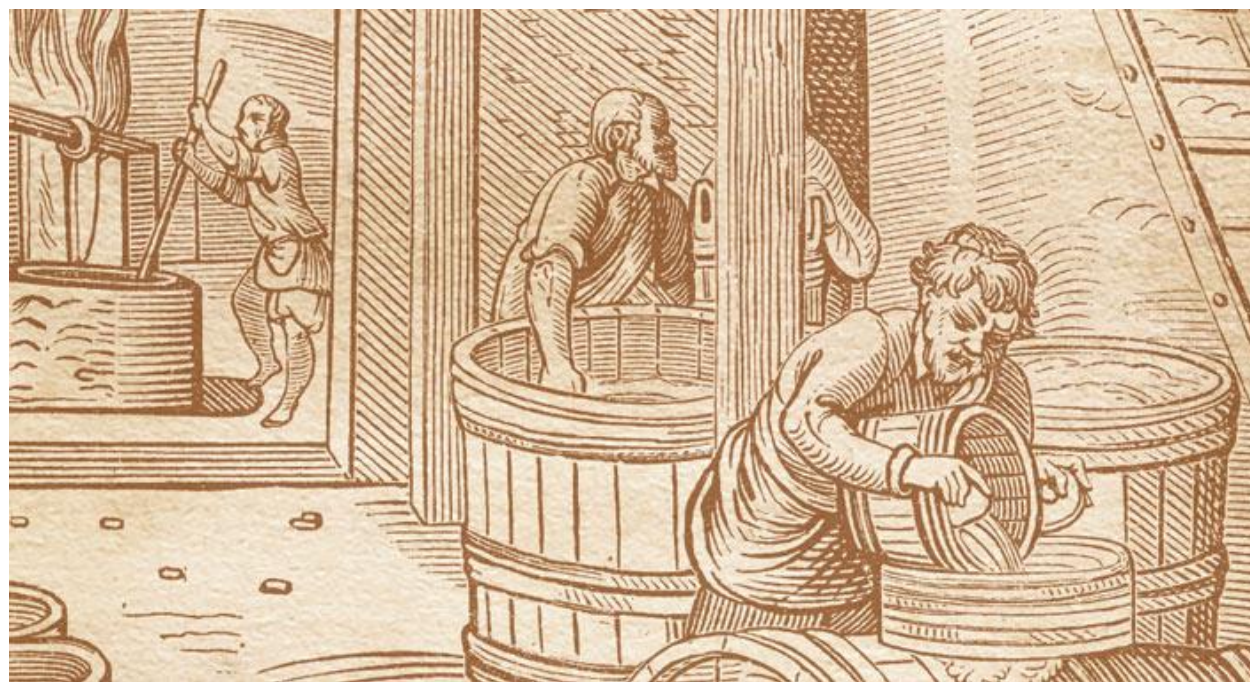


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Biotechnology



Naturally occurring
fermentation
“Natural Biotechnology”



Synthetic Biology



Focuses on creating
technologies for designing and
building biological organisms



Produced by redesigning
microorganisms for useful
purposes by engineering them to
have new abilities

How is bioidentical insulin made?



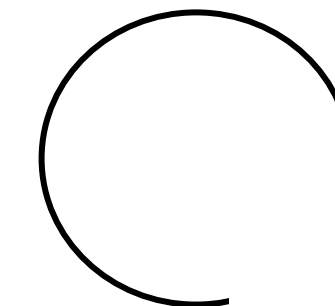
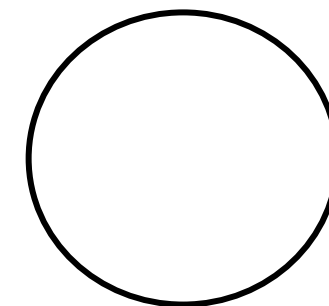
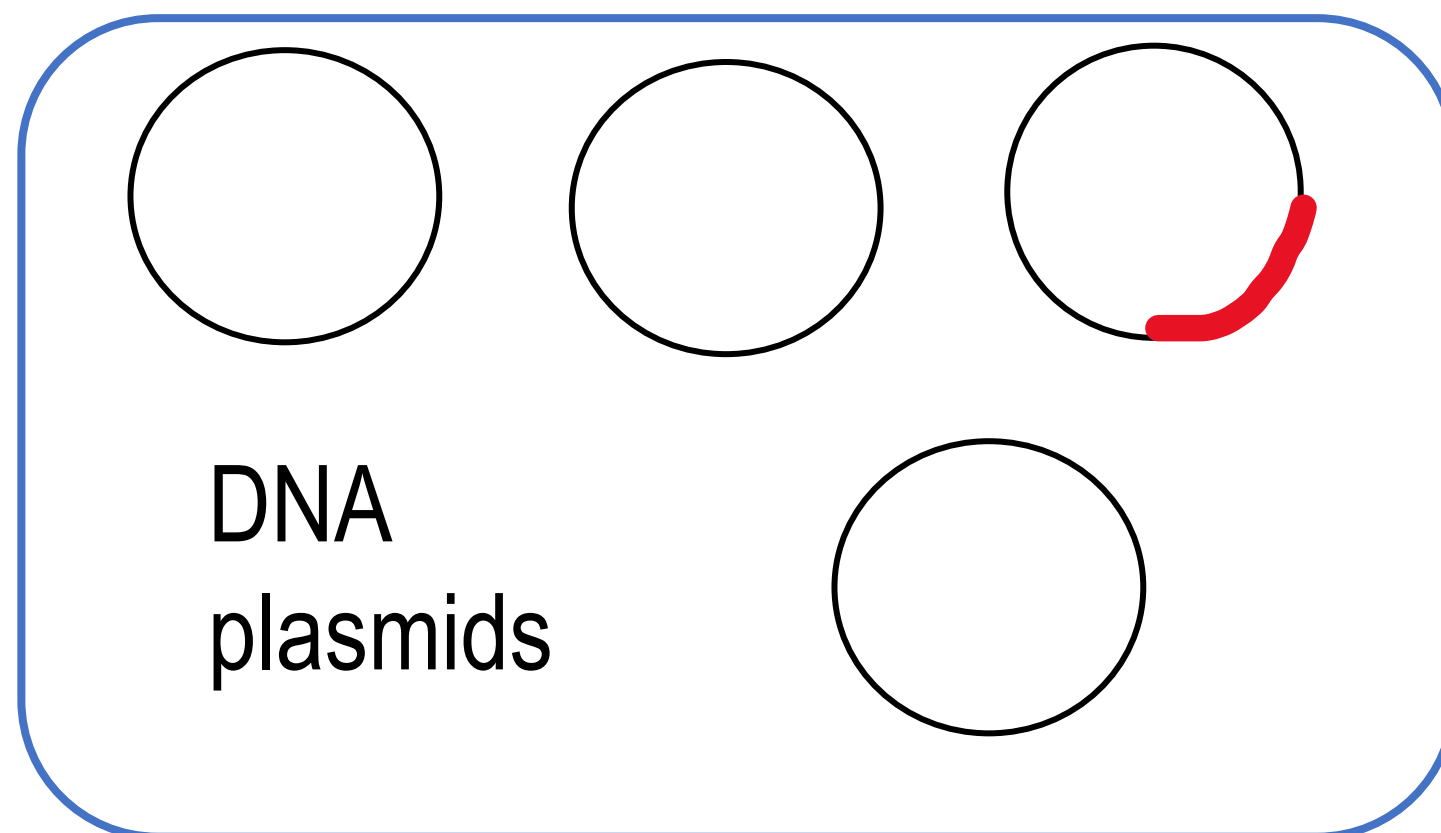
Human DNA (donor)

Insulin Gene

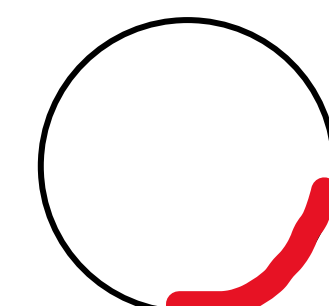
Restriction
enzymes



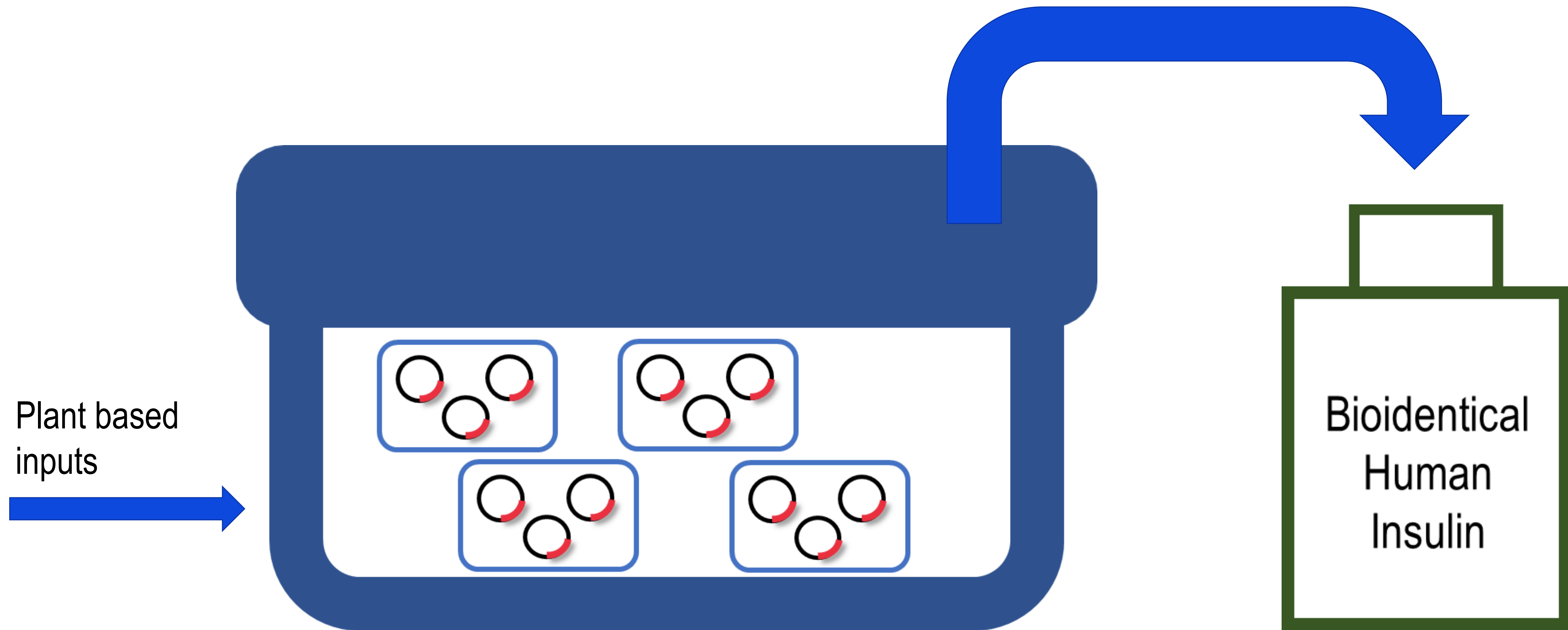
Microorganism (recipient)



Ligase enzyme



Fermentation



Bio-Design



DNA Coding (donor)



BIO-DESIGN

Ability tailor products with precision

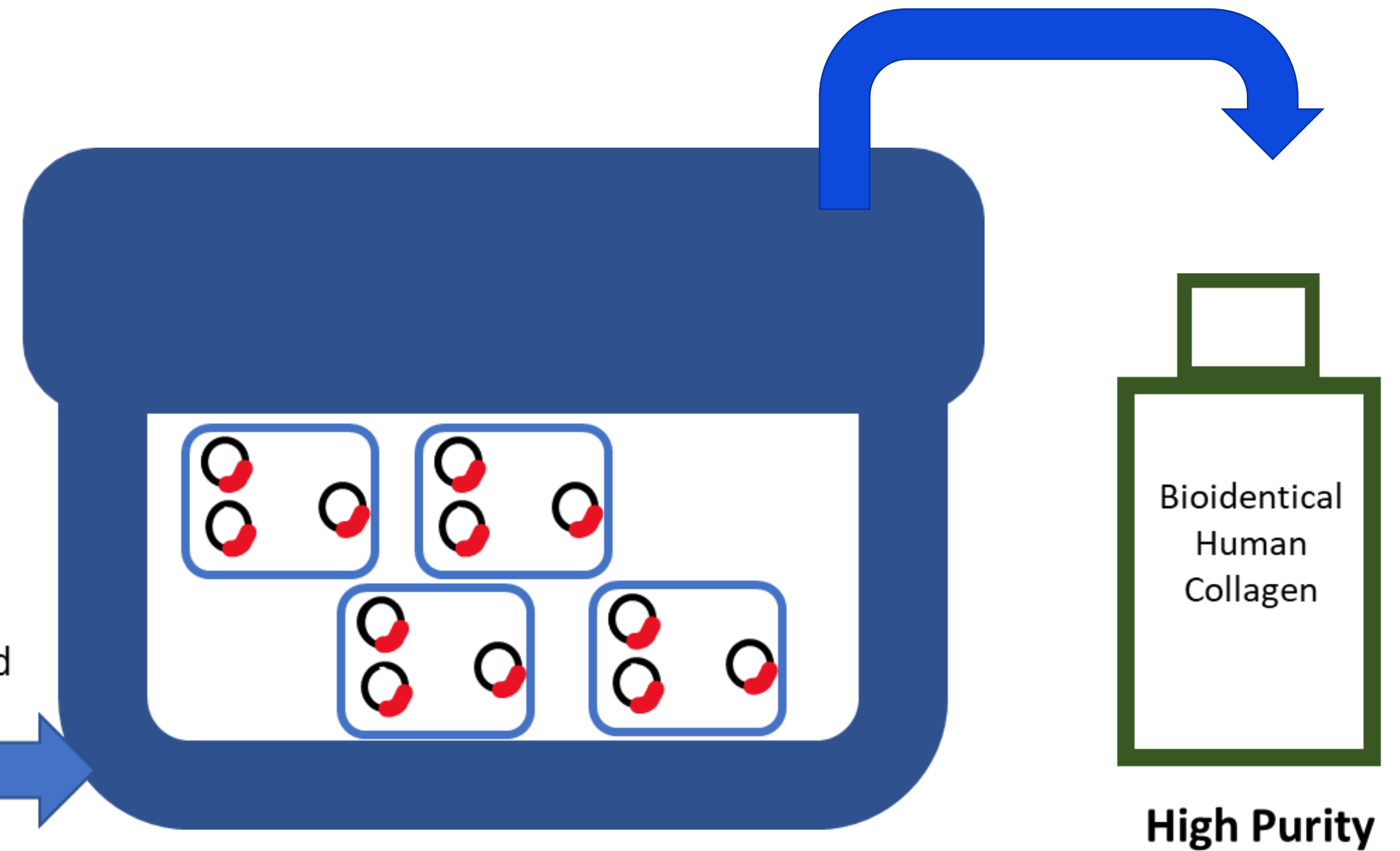
Production of Collagen ex vivo



DNA code for amino
acid sequence



Renewable
Plant based
inputs





Benefits of using Biotechnology

- Large scale production
- Reduced cost
- Simpler supply chain
- Minimization of allergic reaction: product is bioidentical to human insulin
- More sustainable process – Ethical sourcing
- No animal cruelty

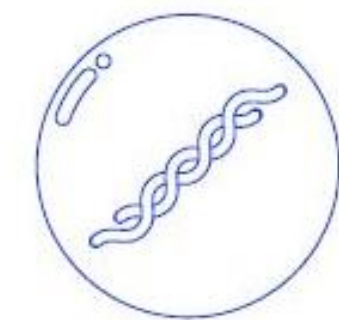
Why Collagen?



- Most abundant protein in your body
- Primary structural component of connective tissues
- Provides skin with structure and strengthens bones
- Essential for maintaining youthful-looking and supple skin
- From the age of ~30 onwards the amount of collagen in the body naturally decreases



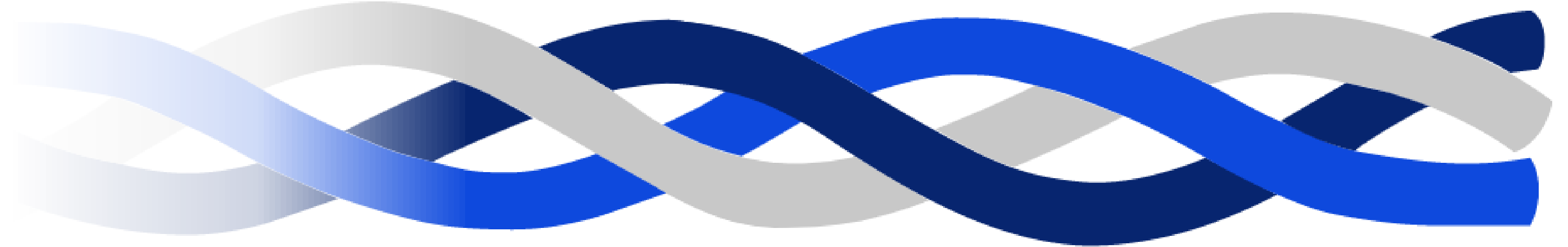
➡ Important to supplement the skin and body with collagen



Collagens



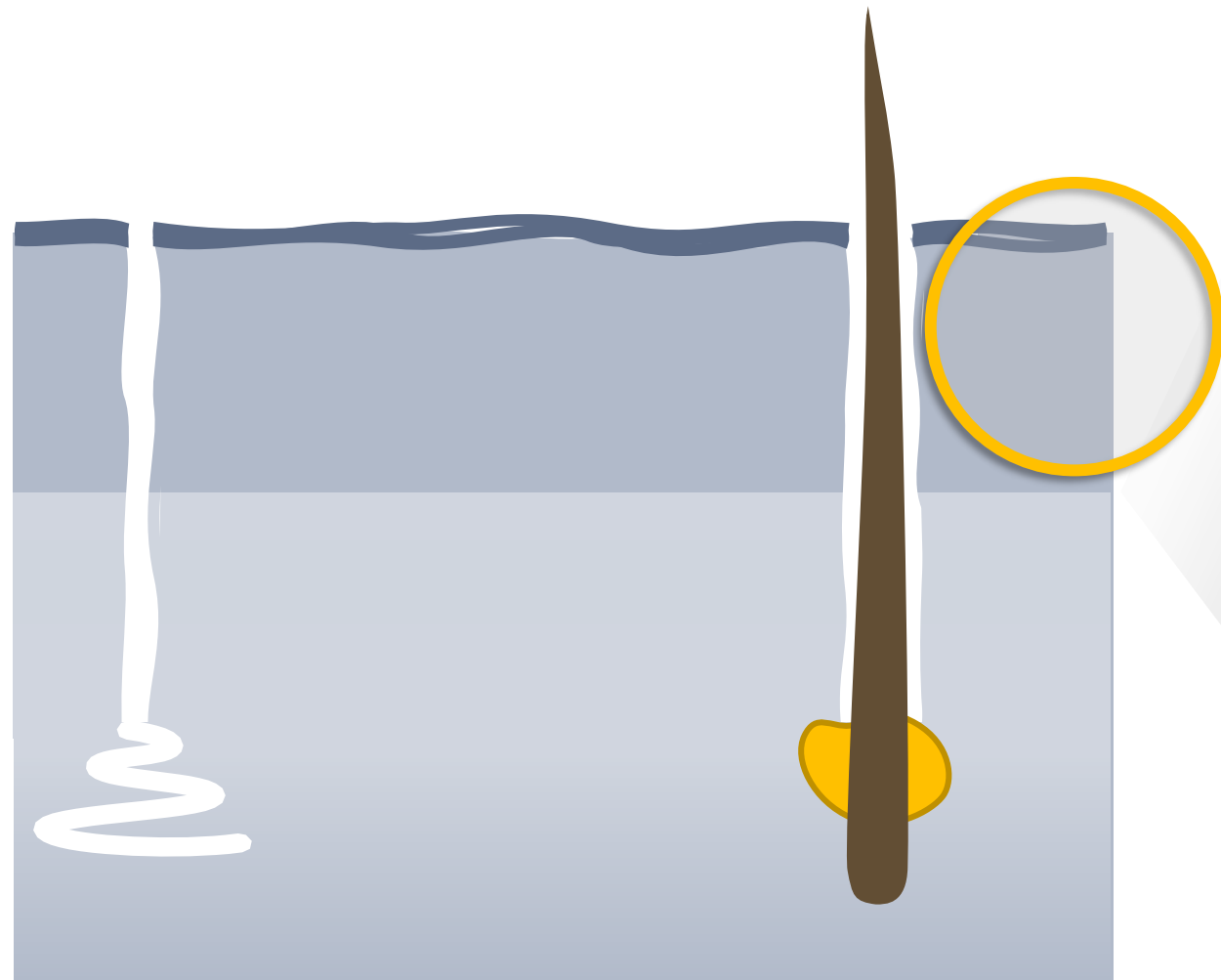
[Gly-X-Y]_n



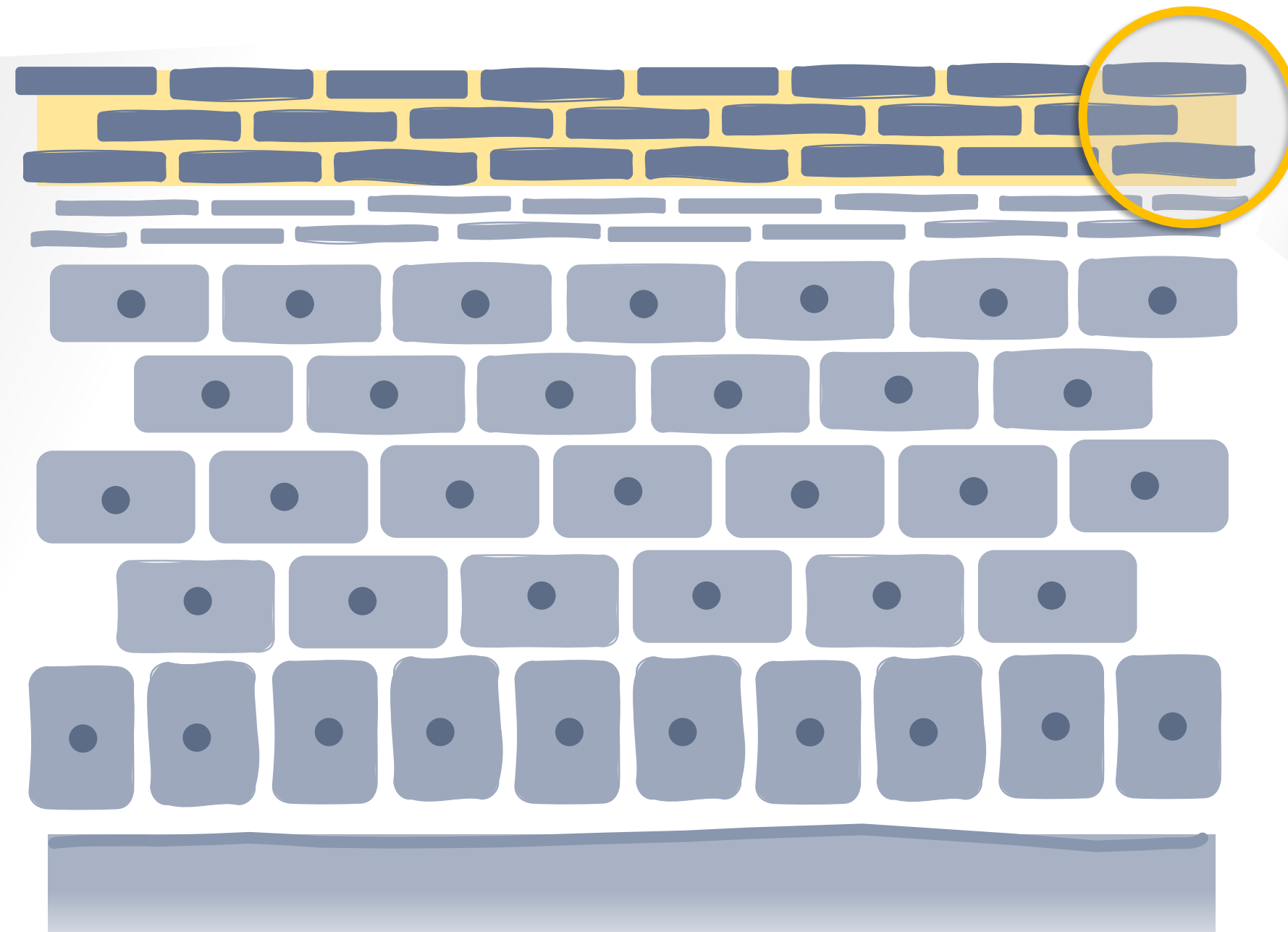
Skin physiology



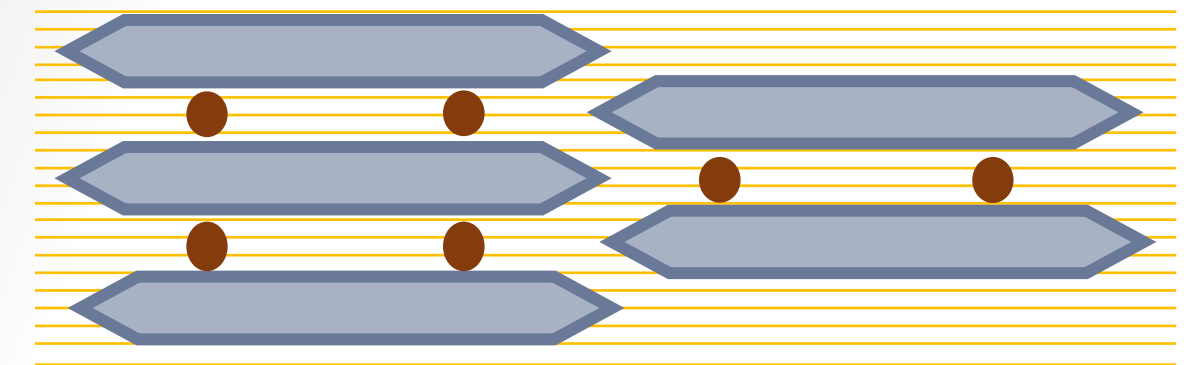
Skin
representation



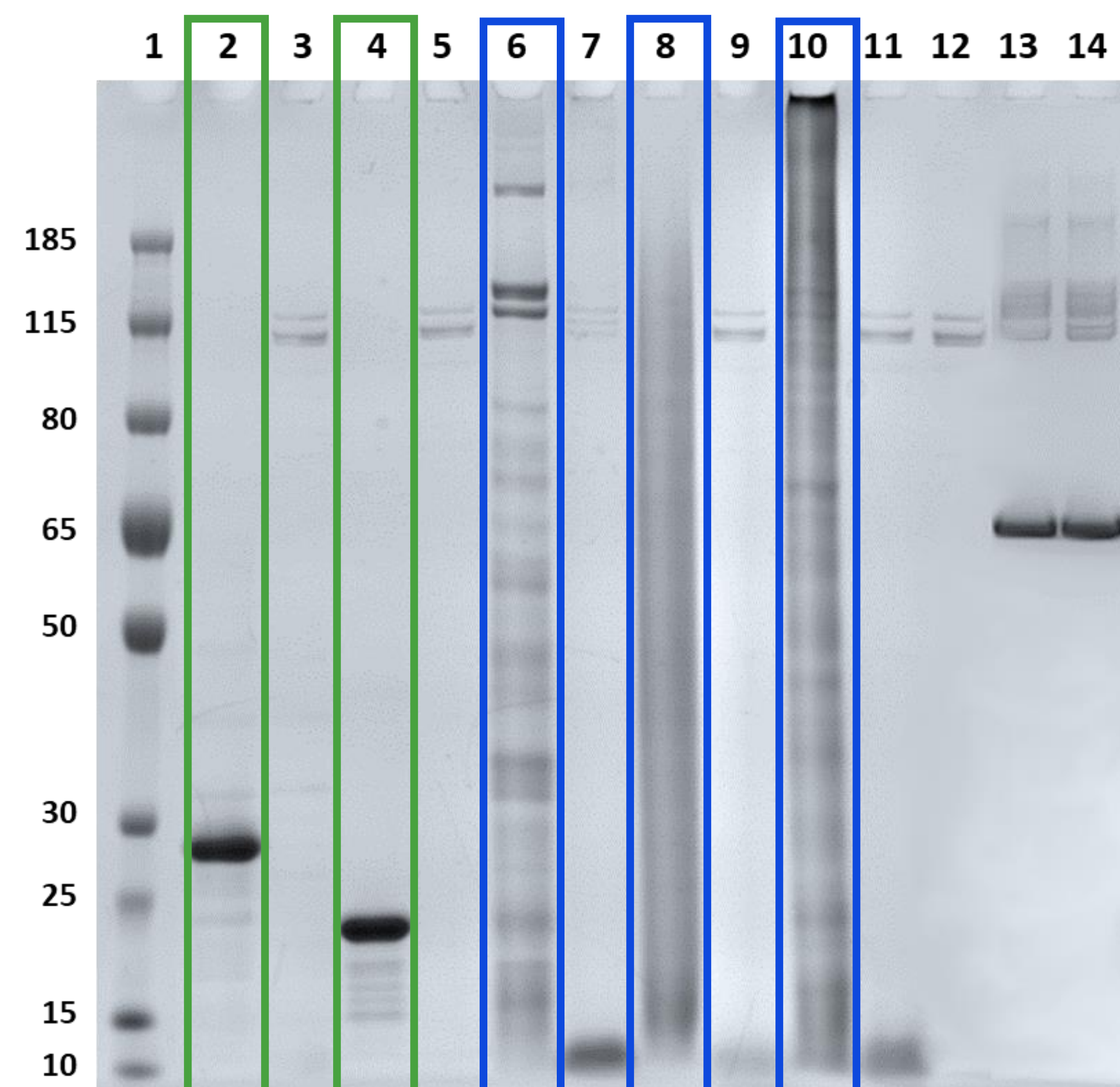
Epidermis
representation



Stratum corneum
representation

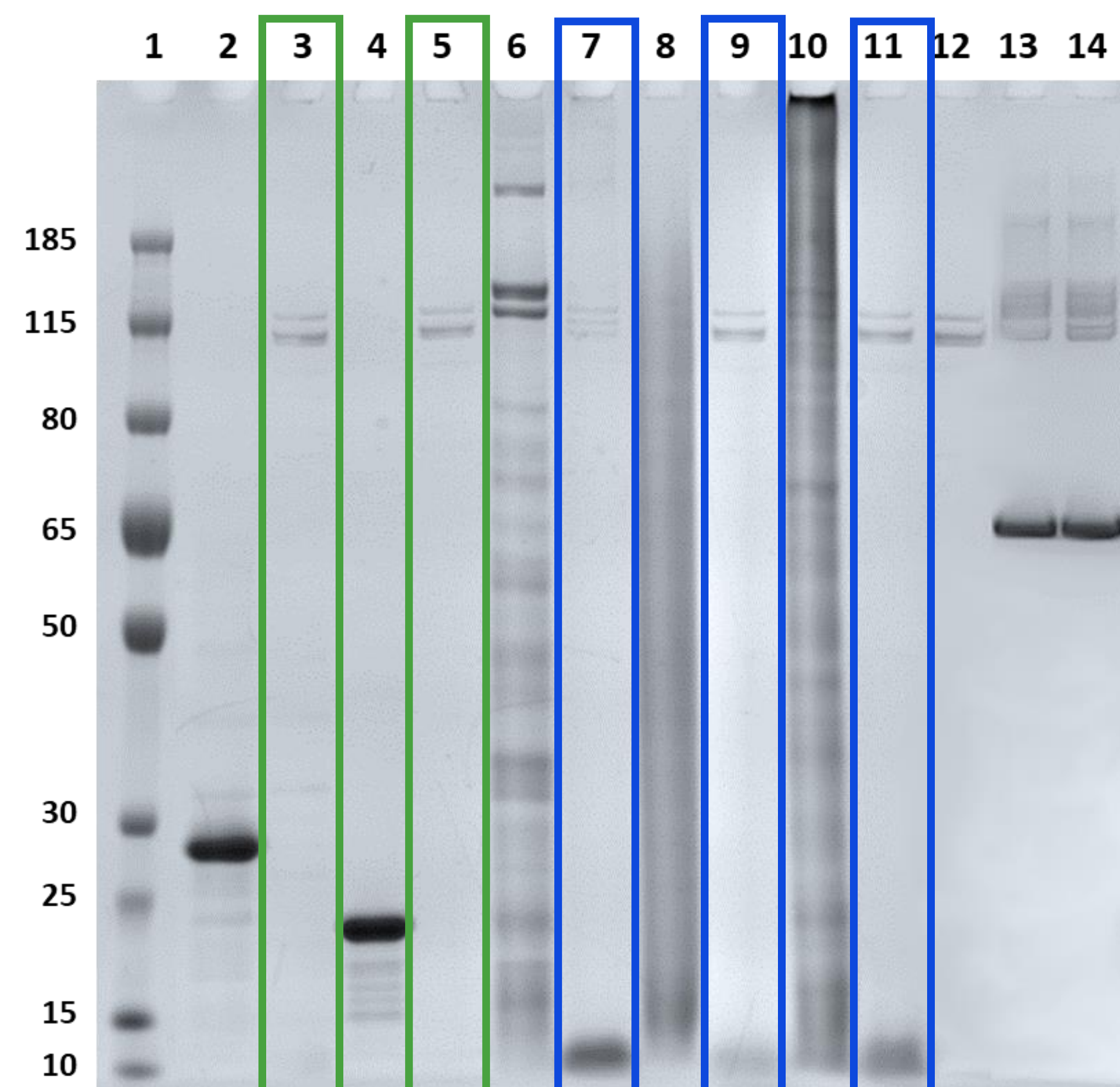


Bioidentical collagens have superior uniformity



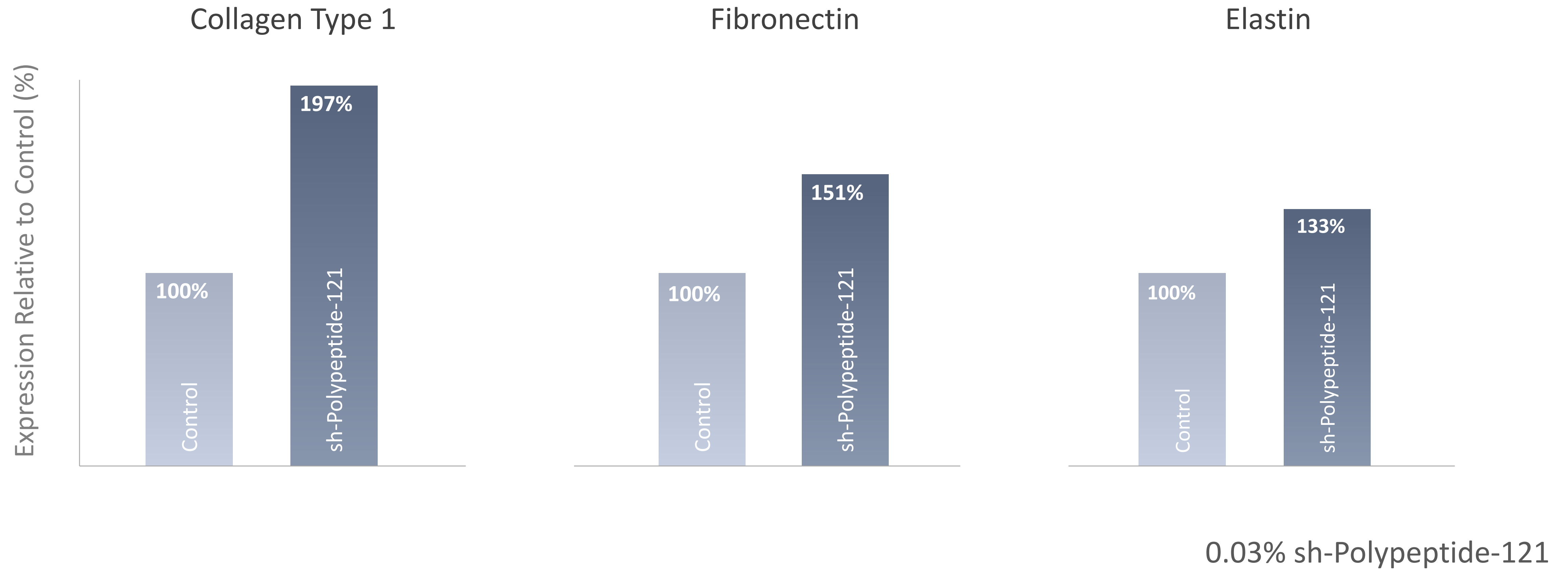
Lane	Sample	Amount loaded (ug)
1	MW Ladder	-
2	sr-Hydrozoan Polypeptide-1, T= 0	2
3	sr-Hydrozoan Polypeptide-1, T= 4 hrs	2
4	sh-Polypeptide-121, T= 0	2
5	sh-Polypeptide-121, T= 4 hrs	2
6	Commercial Collagen 2, T= 0	2
7	Commercial Collagen 2, T= 4 hrs	2
8	Commercial Collagen 5, T= 0	2
9	Commercial Collagen 5, T= 4 hrs	2
10	Commercial Collagen 8, T= 0	2
11	Commercial Collagen 8, T= 4 hrs	2
12	Collagenase	-
13	BSA, T= 0	2
14	BSA, T= 4 hrs	2

Bioidentical collagens are readily digested by collagenase



Lane	Sample	Amount loaded (ug)
1	MW Ladder	-
2	sr-Hydrozoan Polypeptide-1, T= 0	2
3	sr-Hydrozoan Polypeptide-1, T= 4 hrs	2
4	sh-Polypeptide-121, T= 0	2
5	sh-Polypeptide-121, T= 4 hrs	2
6	Commercial Collagen 2, T= 0	2
7	Commercial Collagen 2, T= 4 hrs	2
8	Commercial Collagen 5, T= 0	2
9	Commercial Collagen 5, T= 4 hrs	2
10	Commercial Collagen 8, T= 0	2
11	Commercial Collagen 8, T= 4 hrs	2
12	Collagenase	-
13	BSA, T= 0	2
14	BSA, T= 4 hrs	2

Stimulation of fibroblast ECM genes



Increase of native production of collagen



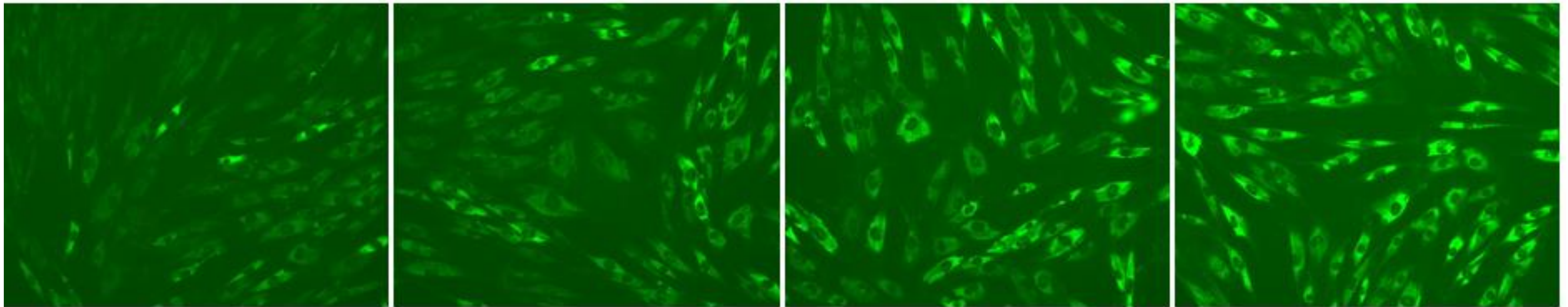
Collagen Type I in Human Fibroblasts

Media Control

0.03% sh-Polypeptide-121

0.05% sh-Polypeptide-121

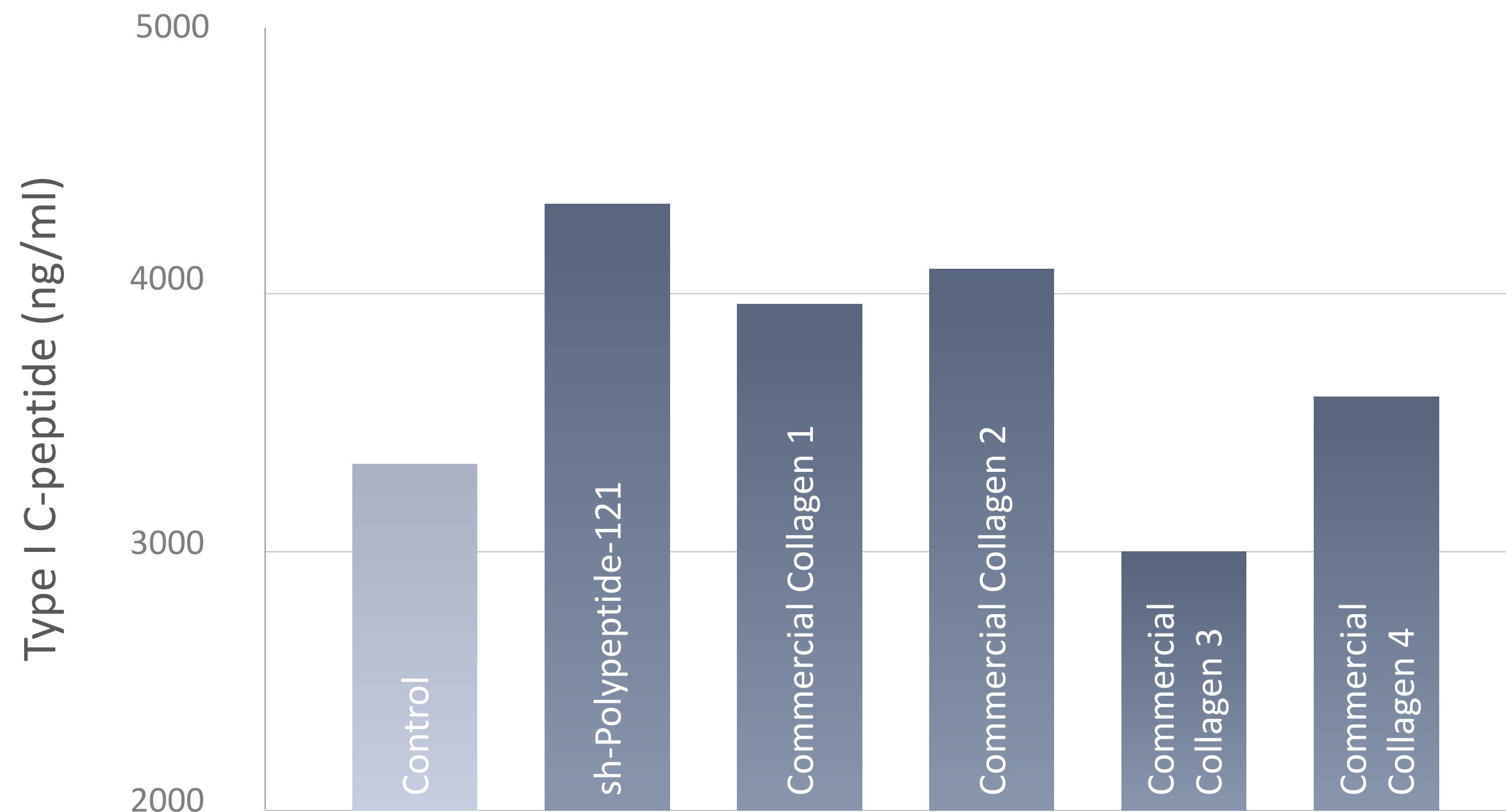
0.1% sh-Polypeptide-121



Secretion of collagen type I



Human fibroblast secretion of collagen type I



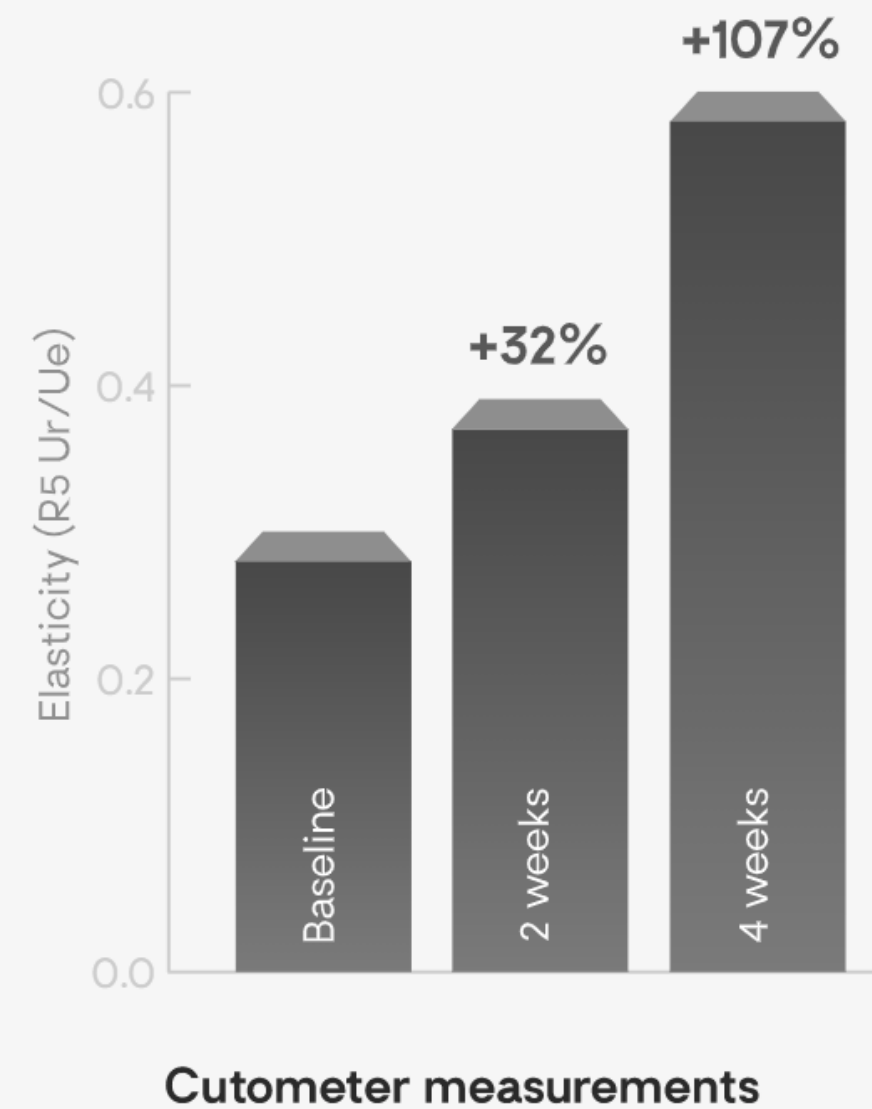
0.03% sh-Polypeptide-121

In vivo results



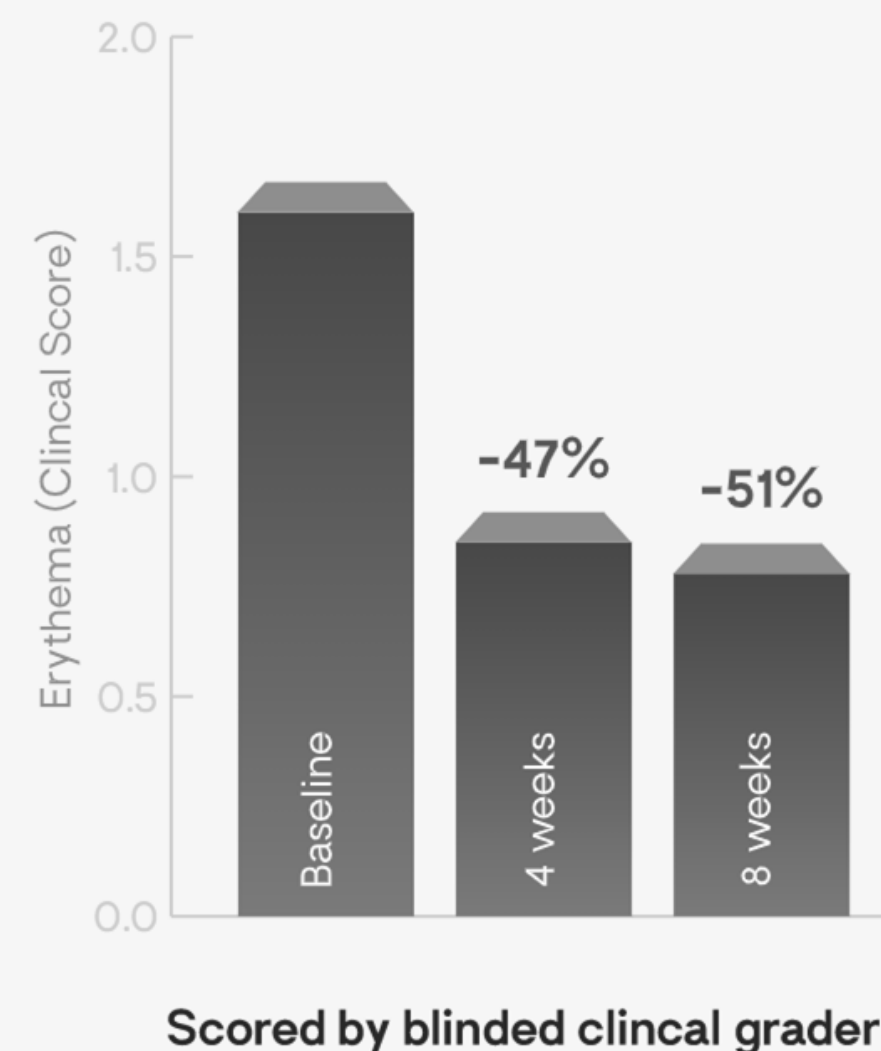
SKIN ELASTICITY INCREASE

100% of subjects showed improvement.



SKIN REDNESS REDUCTION

78% of subjects showed improvement.

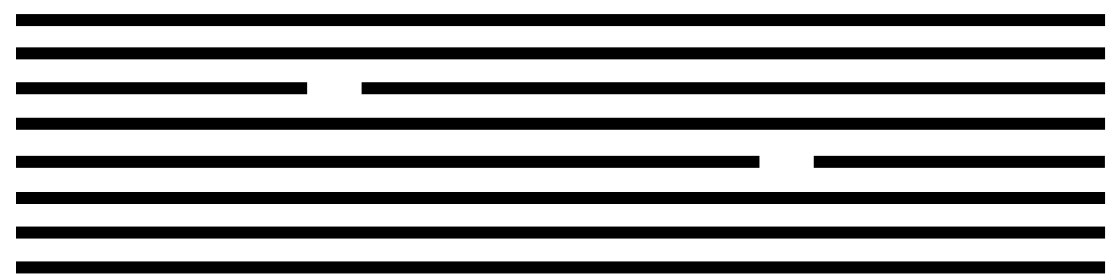


Serum, 0.1% sh-Polypeptide-121

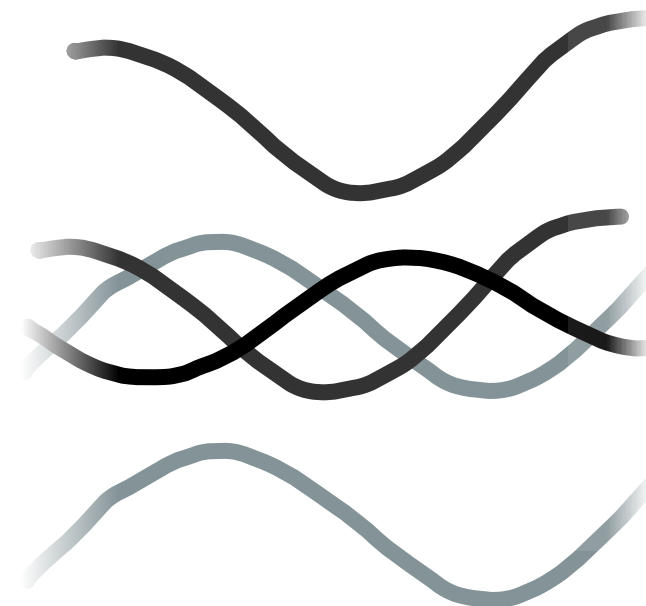
Functional properties



Native Collagen



Bioidentical Collagen



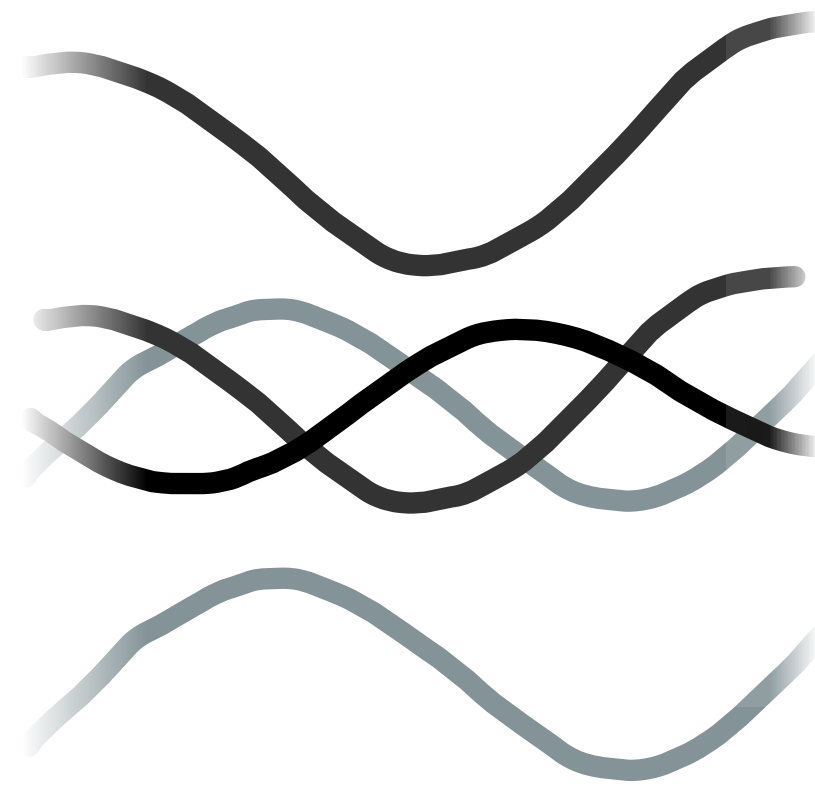
Hydrolyzed Collagen



Functional properties



Bioidentical Collagen



Solubility

Thickening and water binding

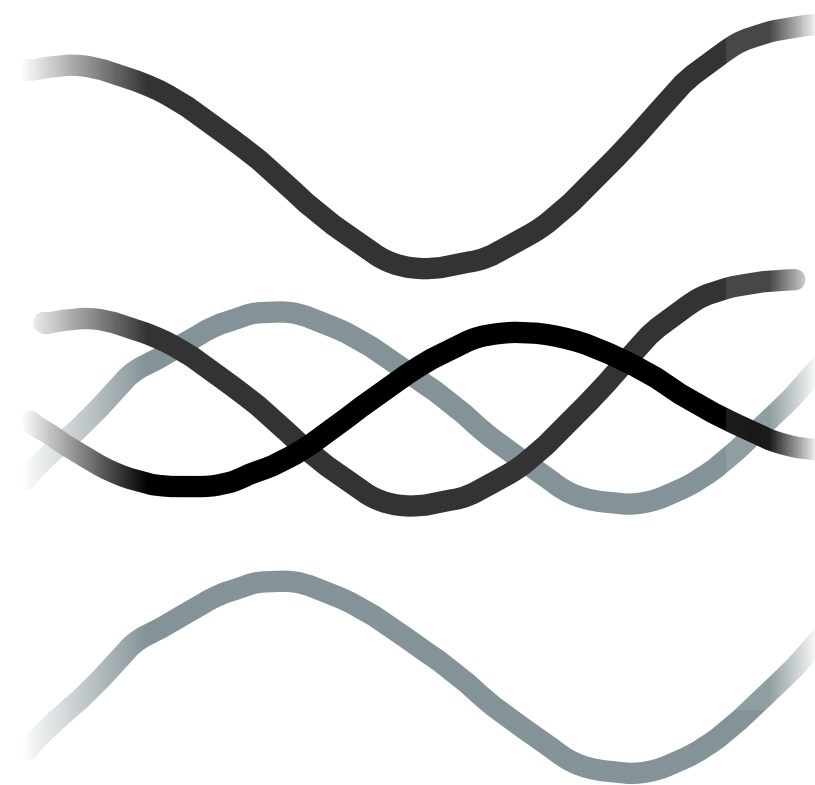
Surface activity

Film forming

Applications



Bioidentical Collagen



Categories

Face, eye and lip care

Hand and body care

Hair and scalp care

Color cosmetics

Contact Information



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