XPLORER™ PROGRAM

Skin Biology Xplorer™

Support your product claims with molecular evidence.

From the model to the interpretation, Skin Biology Xplorer™ shows how your cells, explants or 3D models respond to an active, which biological pathways are involved, and which claims the evidence can support. It is the scientific core of our Cosmetics 360 offer, in which it is included.

3
model levels: 2D cells, 3D skin, explants

3 + 2
omics layers: three core, two exploratory

1
claims–evidence matrix, claim by claim

WHAT THE PROGRAM ANSWERS

The questions it answers

A procollagen assay or an antioxidant test rarely answers what R&D teams ask. Skin Biology Xplorer characterizes what the active does, how it does it, and where the evidence stops.

01 Effect
Does the active measurably change skin biology, and by how much?

02 Mechanism
Which pathways does it act on, and do the transcriptomic, proteomic and metabolomic signals converge?

03 Robustness
Is the effect reproducible across donors and models, or driven by one or two of them?

04 Claims
Which claims can the data support, with which wording, and which should not be made?

WHERE IT IS USED

Anti-aging and skin longevity · Barrier and hydration · Photoaging and UV exposure · Sensitive and inflamed skin · Pigmentation · Skin microbiome · Repair and healing · Formulation iterations

OMICS LAYERS

Layers combined according to the question

Transcriptomics

Differential expression at gene and pathway level, with predefined modules for aging, barrier or inflammation.

- **Bulk RNA-seq** cells, 3D skin, explants
- **Pathway modules** GSEA
- **Donor effect** separated from treatment

Proteomics

Protein-level confirmation by label-free LC-MS/MS, performed on site on a timsTOF Pro 2 (Bruker), matched against the transcriptomic result.

- **timsTOF Pro 2** on site
- **Secreted proteins** culture supernatants

Metabolomics and lipidomics

Antioxidant capacity, energy metabolism and lipids, measured on site in cells and tissues.

- **Metabolomics** redox, energy
- **Lipidomics** barrier lipids
- **Redox ratios** e.g. GSH/GSSG

Exploratory layers

Epigenetic readouts, skin microbiome and extracellular vesicles and exosomes, added when the claim calls for them.

- **Epigenomics** methylation
- **Skin microbiome** 16S · shotgun
- **Extracellular vesicles and exosomes** cargo profiling

Cells, 3D models and skin explants are provided by partner laboratories.

WORKFLOW How a program runs

01
Question and claim
The target claim and the comparators (vehicle, reference active) come first, with the number of donors needed to tell an effect from donor variability.

02
Model ladder
Each model level answers a different question, with the same comparators.

03
Omics measurement
Transcriptomics, proteomics and metabolomics on the same samples, with epigenomic, microbiome or vesicle modules where relevant.

04
Integration
An evidence map: a pathway counts as supported only when at least two independent layers or models agree.

05
Claims–evidence matrix
Each candidate claim linked to its data, model and level of support, including those the data do not support.

DELIVERABLES What you receive

Claims	A claims–evidence matrix linking each candidate claim to its data, model and level of support.
Mechanism	A mechanism-of-action summary and publication-ready figures for the technical dossier and customer presentations.
Data	Integrated, quality-controlled datasets (FASTQ, raw MS files, processed matrices) and a complete statistical report.
Report	Interpretation written against your question, delivered as a signed, time-stamped PDF.

PRACTICAL TERMS

Signature	Signed and time-stamped PDF
Data	Data is hosted in the EU, with backups in France, a separate space per team
Confidentiality	Mutual NDA available before any detail is shared, at no charge
AI	Models on our servers, no data sent to an external AI

TURNAROUND Turnaround, in working days from GO

STANDARD PROJECT
4–6 weeks
The usual pace for a project, confirmed in the quote.

PRIORITY
2–4 weeks
When your schedule requires it, agreed at scoping and confirmed in the quote.

Counted in working days from GO, given once samples have passed visual QC on receipt. Larger programs are planned in milestones, each with its own date.

ILLUSTRATED CASE STUDY See the program at work

CASE STUDY · HEALTHY AGING

From molecules to claims: characterizing the mechanism of an active positioned for skin longevity

Key result 4 claims supported, 2 with restricted wording, 1 not supported; NRF2 antioxidant response, reduced senescence secretome and dermal-matrix preservation, with a non-retinoid profile.

Illustrative scenario, not a client project

genxmap.com/resources/skin-biology-xplorer-anti-ageing.html

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