

ANTI-AGING /
ANTI-WRINKLE

Elix-IR™

THE ELIXIR OF YOUTH TO
FIGHT INFRA'AGING™

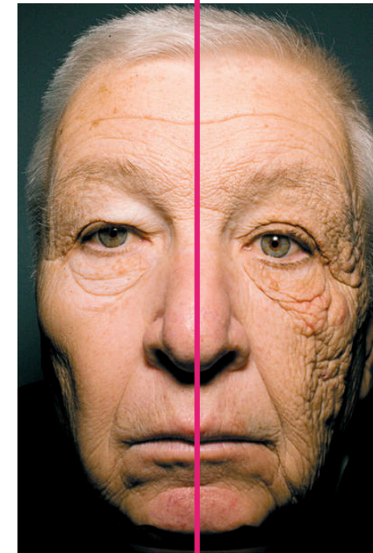
Elix-IR™

- Knotgrass extract
- For a total bioprotection against sun damage and premature aging
- Infra'Aging™ & Thermal aging protection INNOVATION
- Inhibition of Cathepsin G activity NEW PATHWAY
- *In vivo* skin firmness and elasticity enhancement
- Clinical results on wrinkle reduction of sun exposed volunteers

Causes of skin aging

- **Intrinsic aging /chronological aging** is an inevitable and continuous process (biological clock of skin cells).
- **Extrinsic aging** is factored by outside influences: pollution, smoking, sun (photoaging)
→ premature skin aging

69-year-old truck driver with strong case of photoaging. In the 28 years he spent driving trucks, the man's face received far more sunlight on the left side with the sun streaming in through the driver's side window.



Premature aging
Solar elastosis

Excessive sun exposure

Sun exposure is responsible for 90% of premature skin aging.

Sun: friend or enemy?

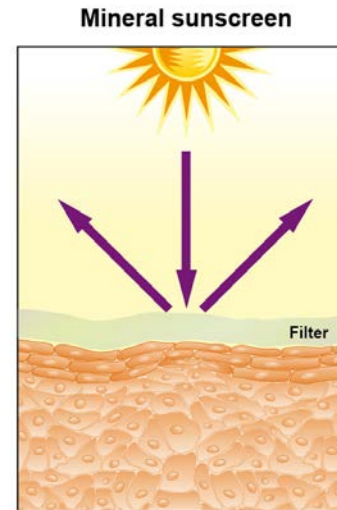
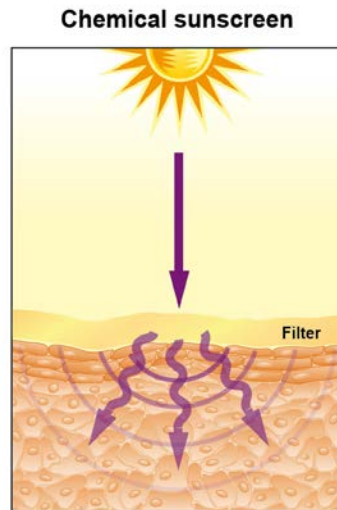
- **Sun is needed ☺**
 - Source of energy for life
 - Provides essential vitamin D (indispensable for bone growth and calcium absorption)
 - Stimulates endorphin production (happiness and euphoria feelings)
- **Dangers of over sun exposure ☹**
 - Sun burns
 - Premature aging/solar elastosis? (photoaging)
 - Pigmentation irregularities/hyperpigmentation
 - Melanomas/skin cancer

How to benefit from the sun without its negative effects?

Sun protection in cosmetic products

- Use of sun care products with
 - Physical protection: chemical filters or mineral filters to stop rays at the surface of the skin (efficacy dependent on SPF). Efficacy is not 100%.

Rays are absorbed by the filter. Energy is released through less harmful rays.

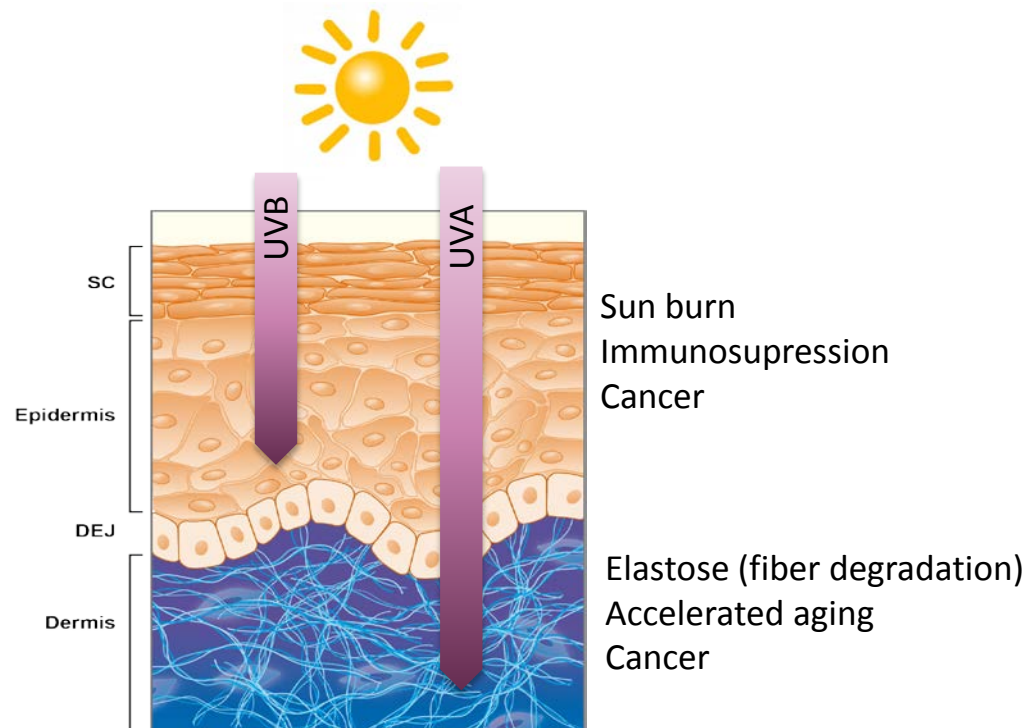


Rays are reflected by the sunscreen.

- Biological cell protection/repairation for DNA, mitochondria, fibers,.... to counteract rays which have reached the skin.

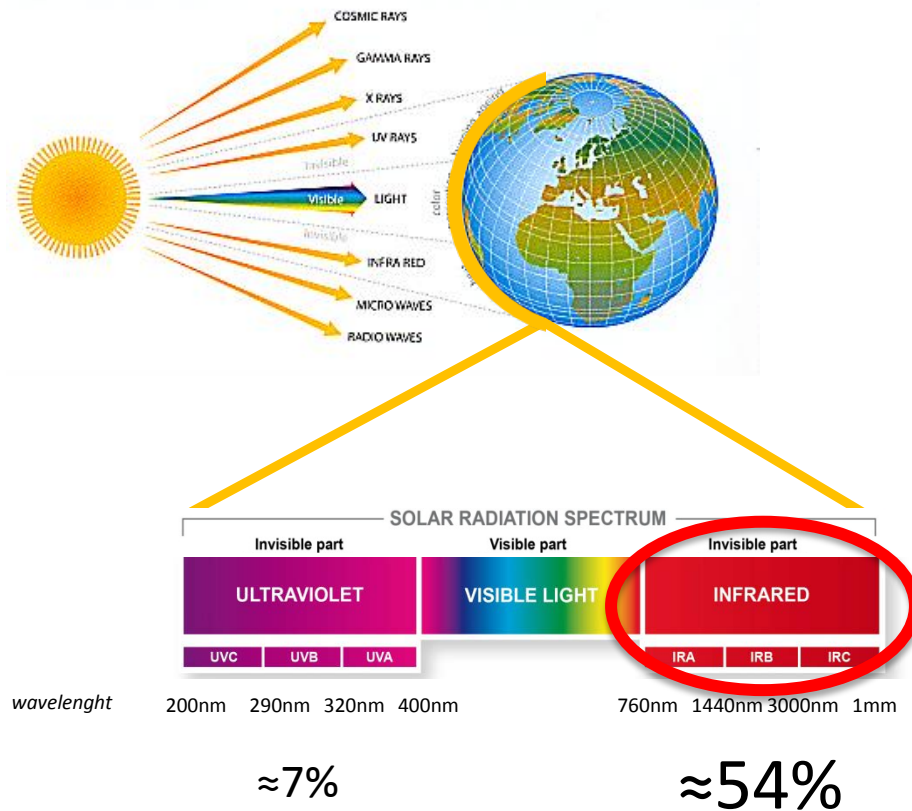
What is well known about photoaging?

- For many years, photoaging was attributed only to UV. UVC are stopped by ozone layer. UVB penetrates epidermis and UVA reaches dermis.



Solar radiation

- Starting 150 million kilometers (93 million miles) away, solar electromagnetic radiation reaches Earth after atmosphere filtration.

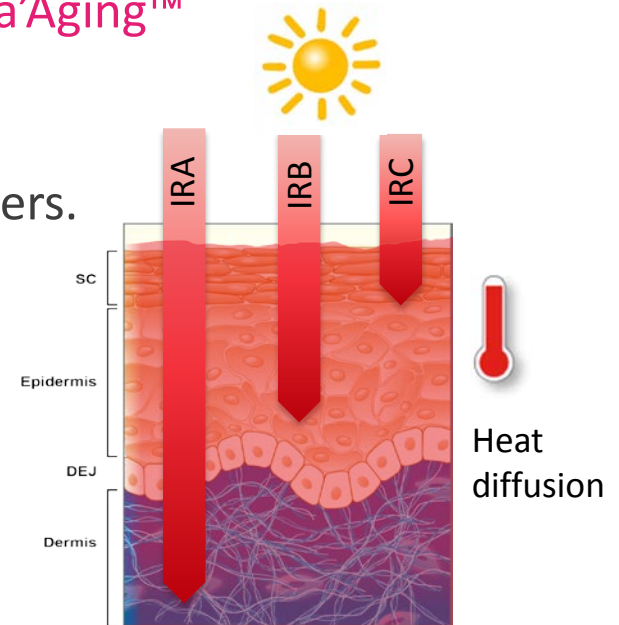


Breakthrough approach of photoaging

Recent studies describe that infrared (IR) rays are also involved in photoaging.

IR-induced skin aging = **Infra'Aging™**

- IRA penetrate epidermal and dermal layers.
IRB and IRC are absorbed only by epidermal layers.
- Direct action of IR rays
- Indirect action of IR rays due to the conversion of absorbed IR into heat
= **Thermal aging**



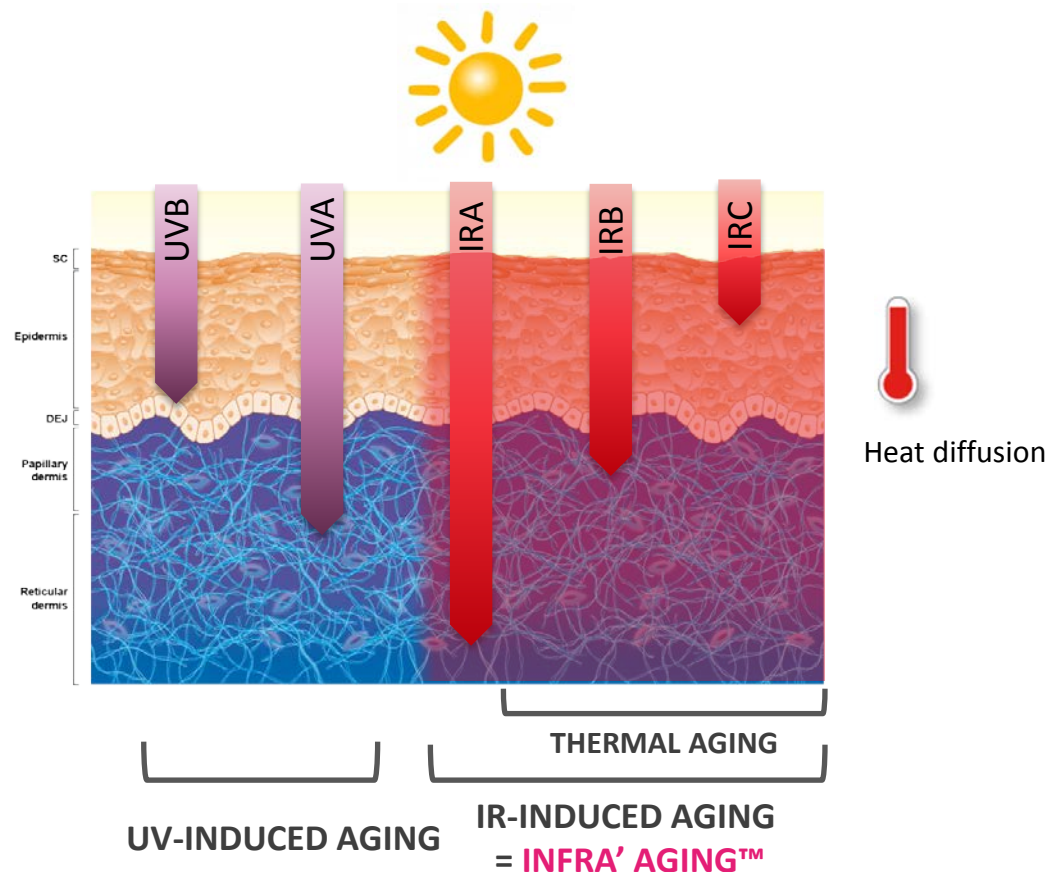
Infra'Aging™ is a new approach to fight photoaging!

IR-induced skin damage

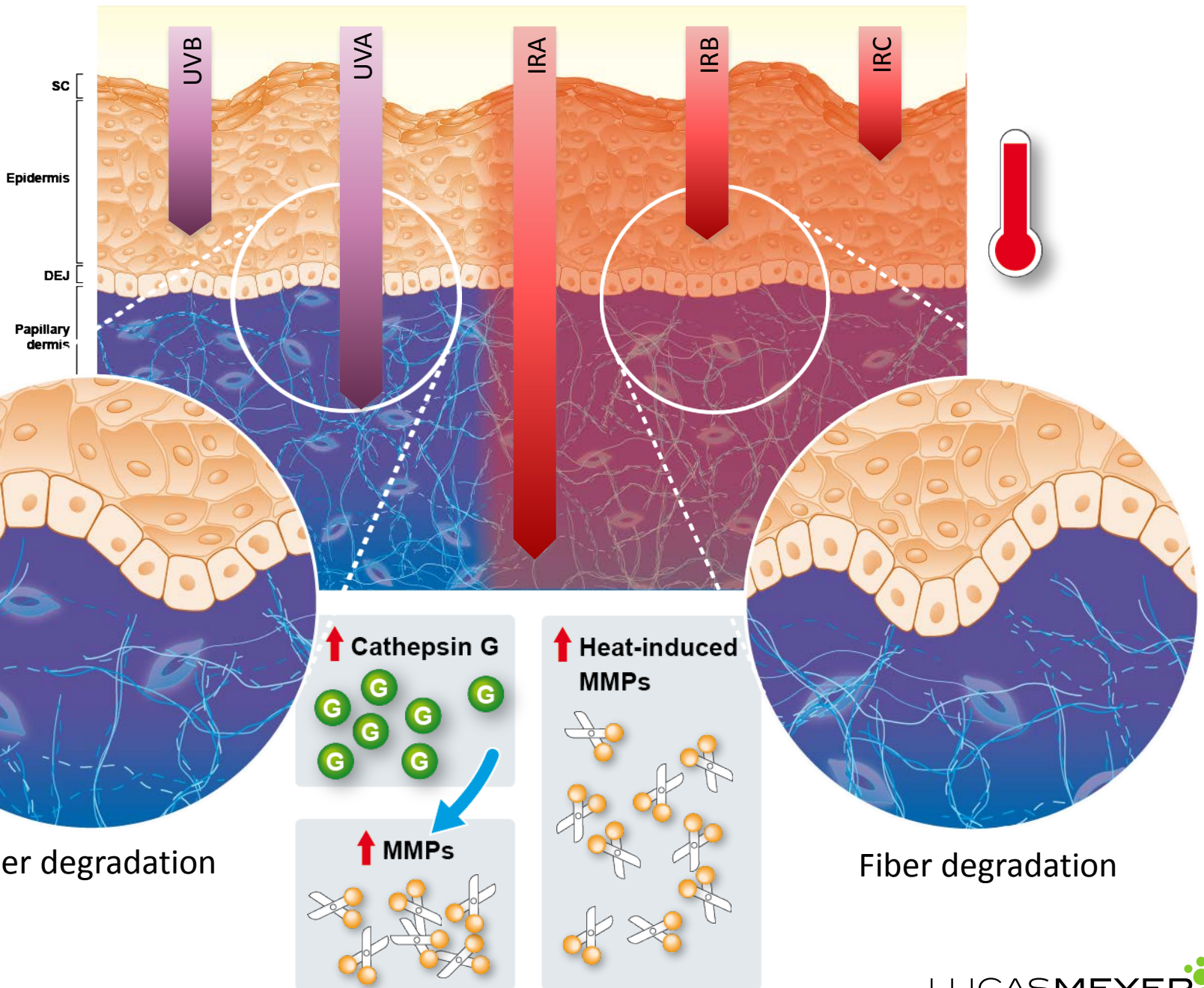
- Many scientific articles have been published since 2008 describing:
 - Up-regulation of matrix MMP-1, MMP-3
 - Formation of ROS
 - Modulation of tropoelastin expression
 - Degradation of collagen & elastic fibers
 - Solar elastosis
 -

IR induce all the signs for premature aging.

Photoaging = UV-induced aging + Infra'Aging™ & Thermal aging

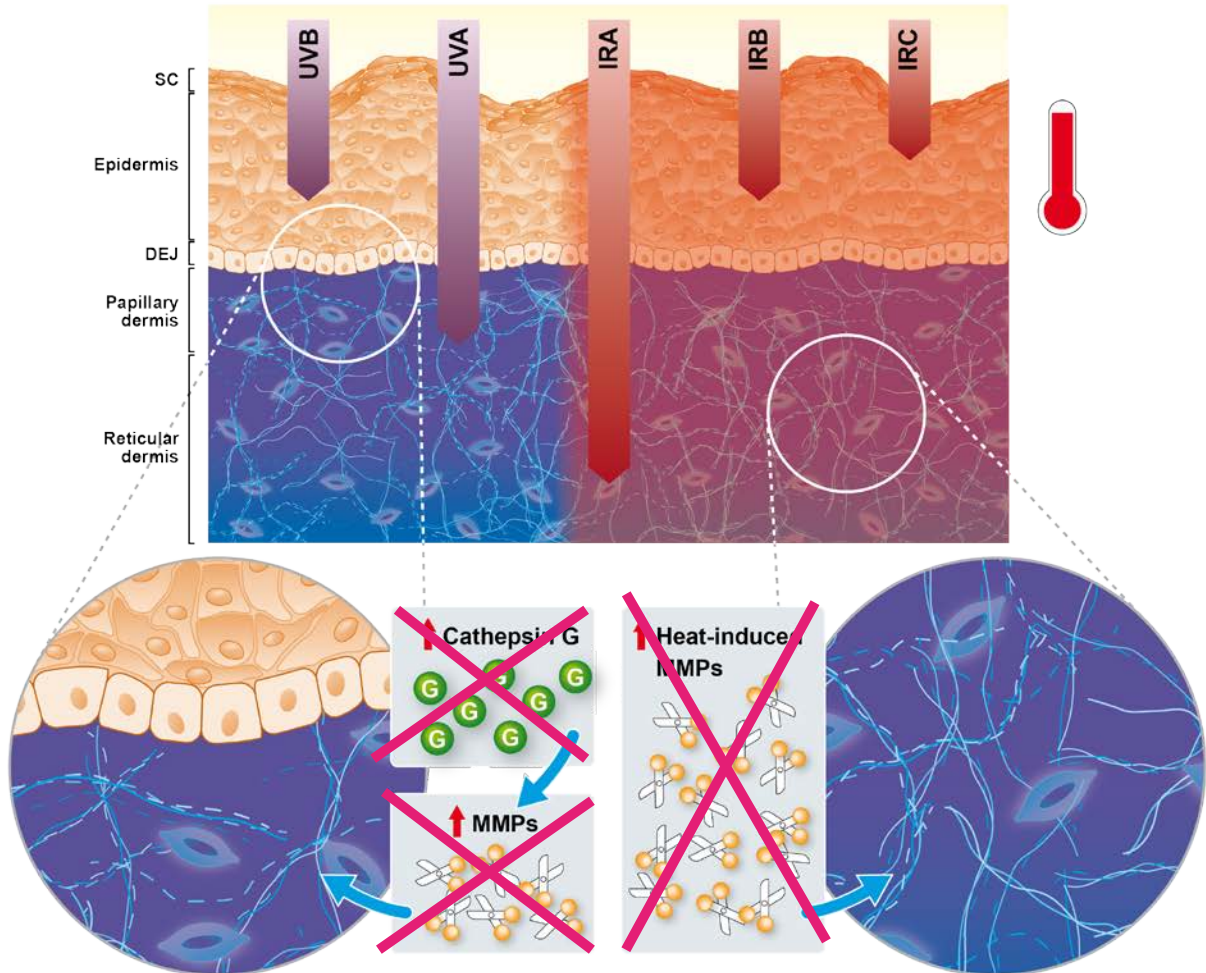


Rethinking the photoaging approach by fighting Infra'Aging™.



Elix-IR™, new and global approach to fight photoaging

- 1 Cathepsin G inhibition
- 2 ↓ UV-, IR- & heat-induced MMP production
- 3 Protection of elastic fibers
- 4 Elasticity & firmness enhancement
- 5 Decrease in wrinkles



Patented
ingredient

Elix-IR™, new and global approach to fight photoaging

- Knotgrass (*Polygonum aviculare*) extract rich in flavonoids
- Plant used in phytotherapy and chinese medicine for lowering blood pressure, anti-rheumatic, and hypoglycaemic agent, treatment of intestinal discomfort,



First active acting on Infra'Agging™

Outstanding clinical results on sun exposed volunteers

- INCI:Water (and) Glycerin (and) Polygonum Aviculare Extract

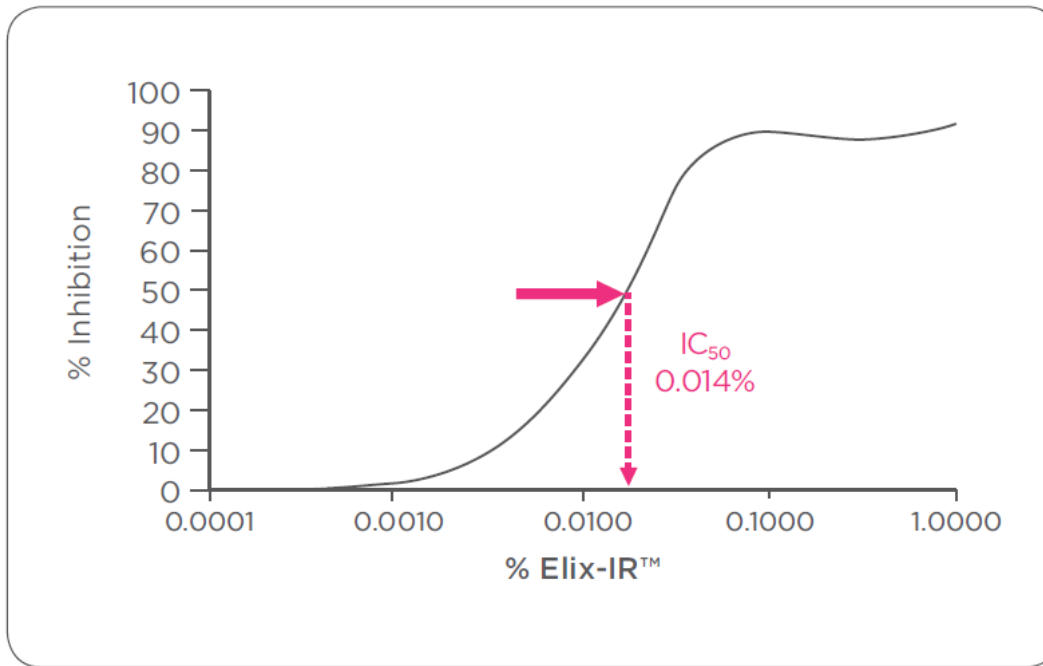




In vitro-Ex vivo studies

- 1** Inhibition of cathepsin G activity
- 2** Decrease in UV-, IR- and heat-induced MMP-1 production
- 3** Protection of papillary dermis & reticular dermis

Inhibition of cathepsin G activity



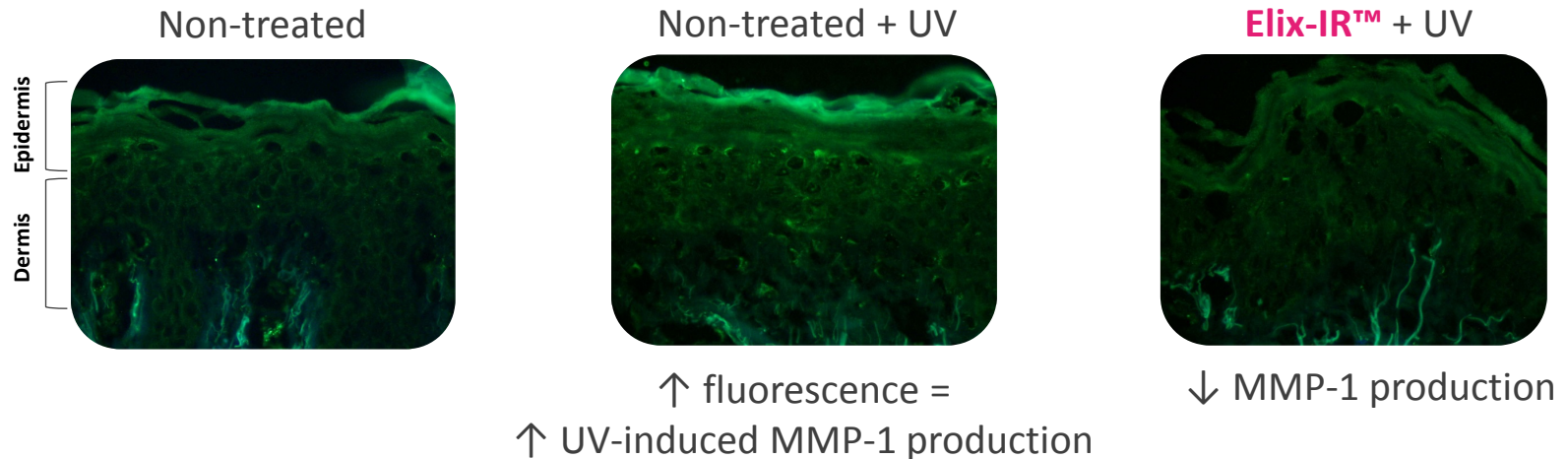
IC₅₀ = concentration needed to inhibit 50% of the enzyme activity

Elix-IR™ strongly inhibits cathepsin G activity.

Decrease in UV-induced MMP-1 on skin explants

Protocol

- A solution with 2% Elix-IR™ was applied daily on skin explants vs. untreated
- At D5, irradiation by UV (29J/cm² UVA+2J/cm² UVB)
- At D6 (1 day after irradiation), immunostaining of MMP-1, image analysis by an expert

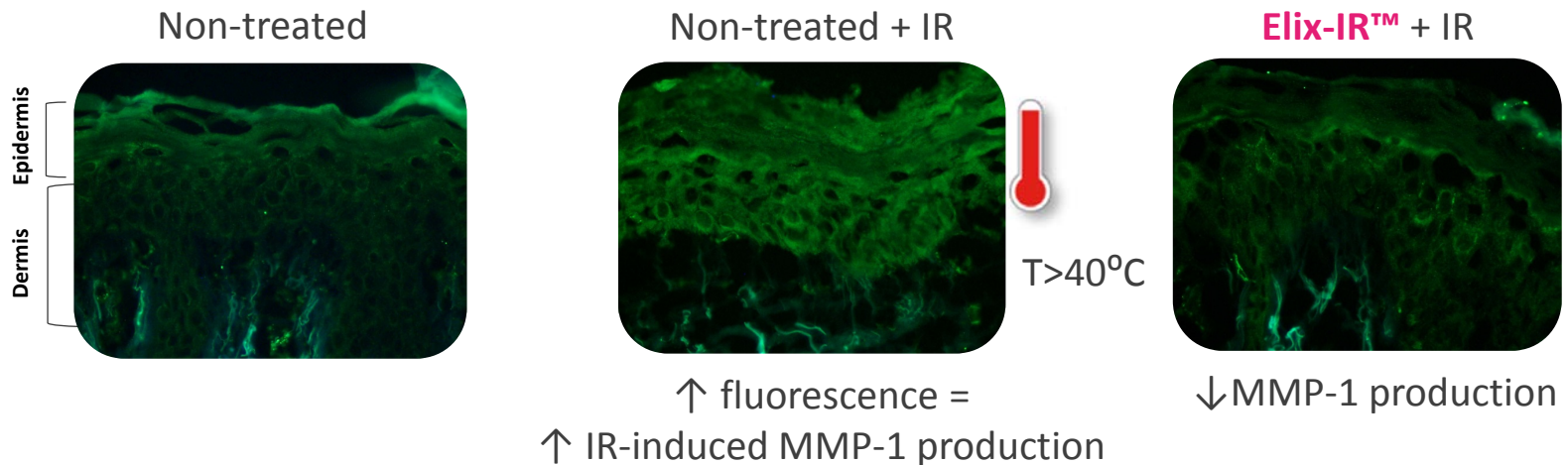


Elix-IR™ reduces UV-induced MMP-1 production.

Decrease in IR-induced MMP-1 on skin explants

Protocol

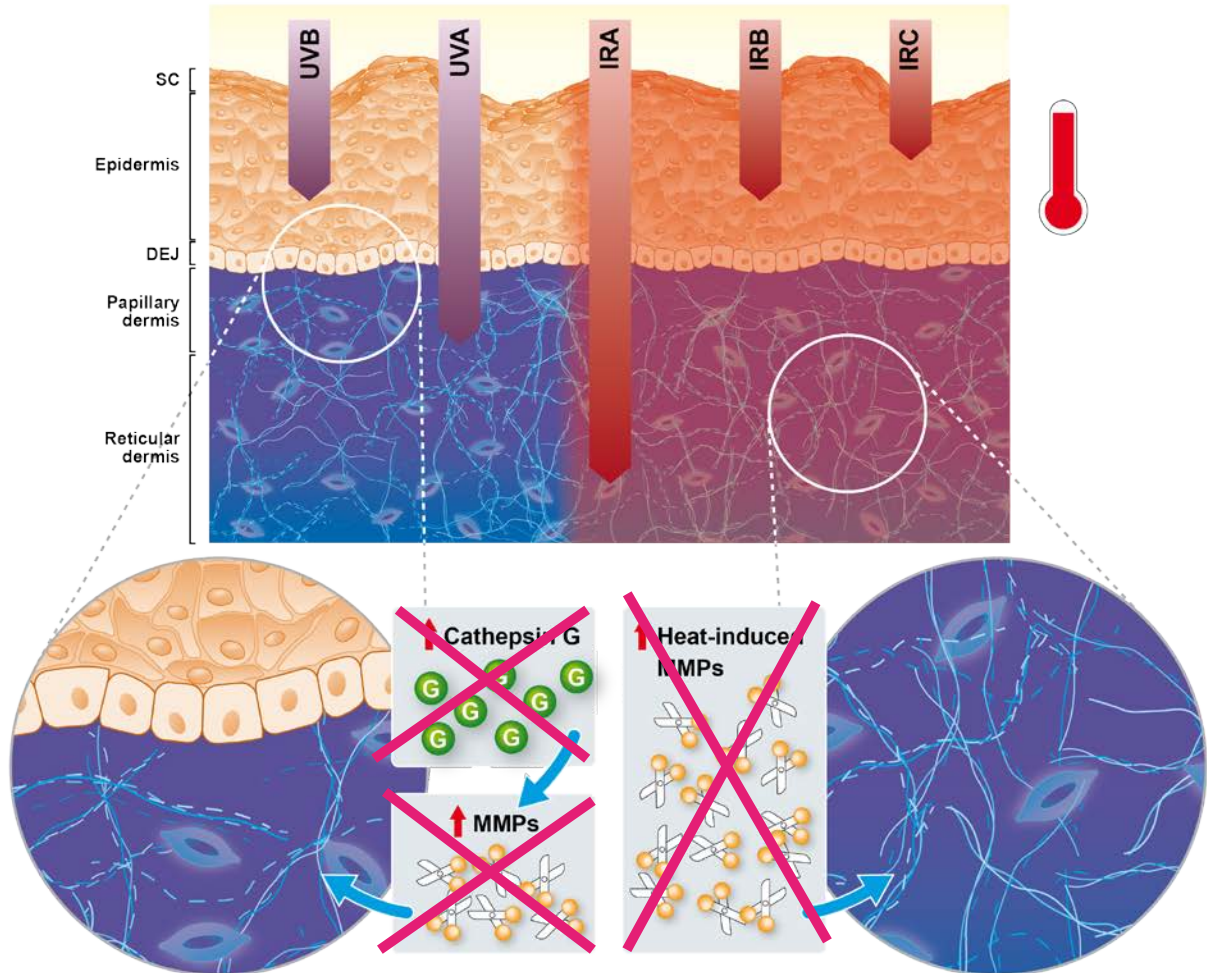
- A solution with 2% Elix-IR™ was applied daily on skin explant vs. untreated
- At D5, irradiation by IRA (720J/cm²). Measurement of skin temperature
- At D6 (1 day after irradiation), immunostaining of MMP-1, image analysis by an expert



Elix-IR™ reduces IR-induced MMP-1 production.

Elix-IR™, new and global approach to fight photoaging

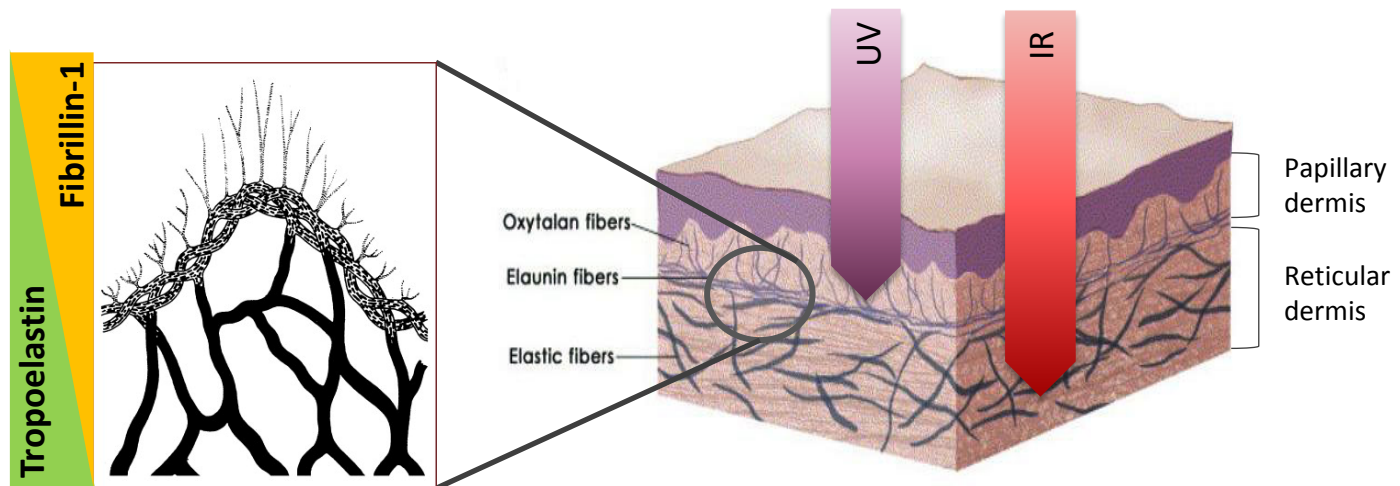
- 5 Decrease in wrinkles
- 4 Elasticity & firmness enhancement
- 3 Protection of elastic fibers
- 2 ↓ UV-, IR- & heat-induced MMP production
- 1 Cathepsin G inhibition



Why skin loses its elasticity after repeated sun exposure?

Skin elasticity is due to 3 types of elastic fibers constituted of **tropoelastin** (protein) and **fibrillin-1** (glycoprotein) in different proportions:

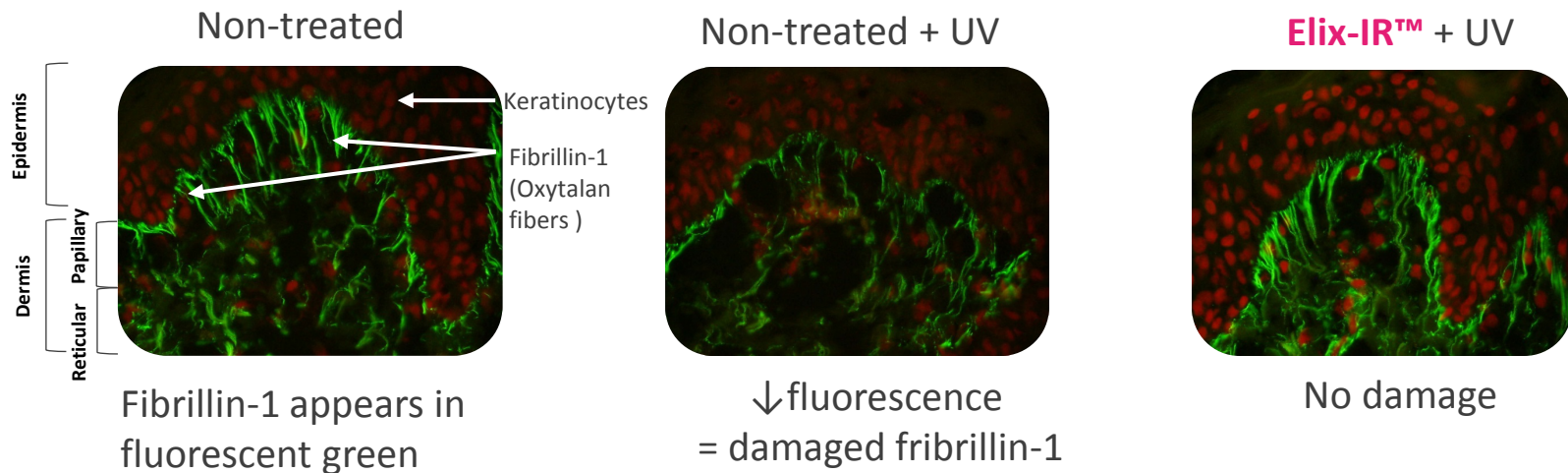
- **Oxytalan** fibers vertically located in the **papillary dermis** (up dermis)
- **Elaunin** fibers form a parallel network to DJE and assure the junction between papillar dermis and **reticular dermis** (low dermis)
- **Mature elastic fibers** located in **reticular dermis**



Papillary dermis protection on skin explants

Protocol

- A solution with 2% Elix-IR™ was applied daily on skin explant vs. untreated
- At D5, irradiation by UV (29J/cm² UVA+2J/cm² UVB)
- At D6 (1 day after irradiation), immunostaining of fibrillin-1, image analysis by an expert

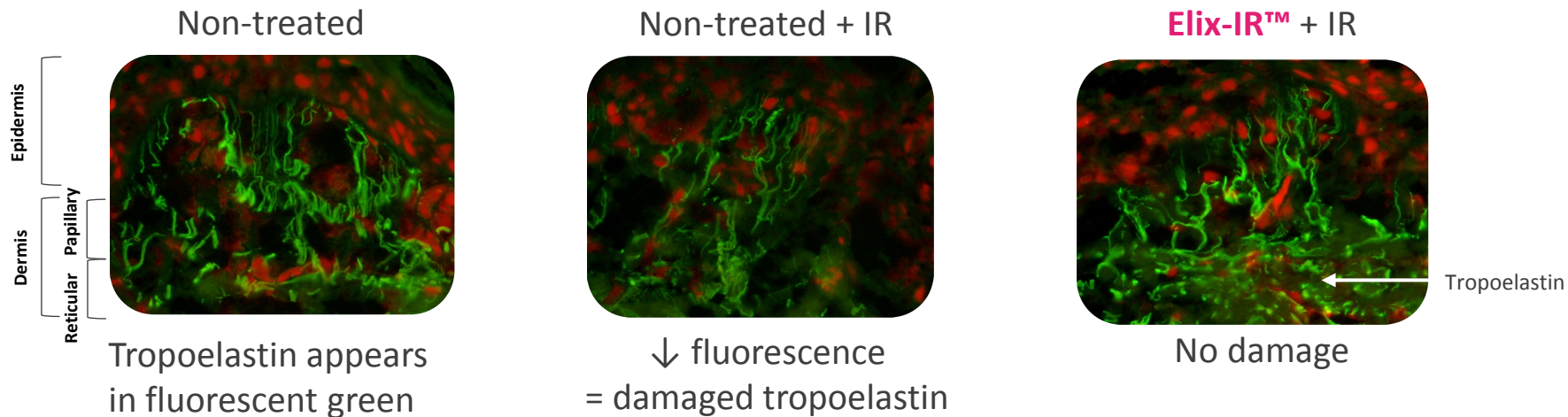


Elix-IR™ protects papillary dermis integrity from UV damage with a fast action to preserve a better skin elasticity.

Reticular dermis protection on skin explants

Protocol

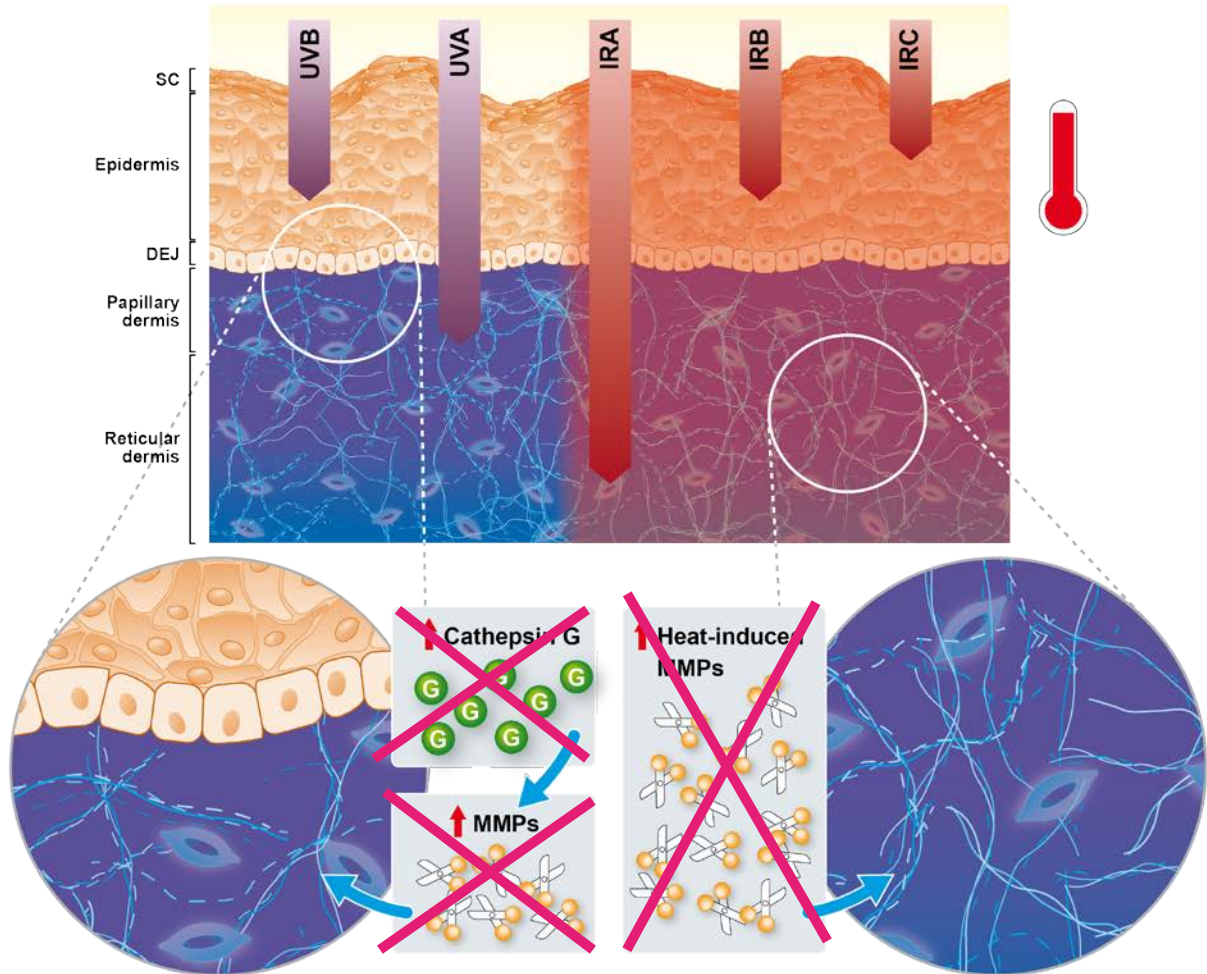
- A solution with 2% Elix-IR™ was applied daily on skin explant vs. untreated
- At D5, irradiation by IRA (720J/cm²)
- At D9 (4 days after irradiation), immunostaining of tropoelastin, image analysis by an expert



Elix-IR™ protects reticular dermis integrity from IR damage to preserve a better skin elasticity.

Elix-IR™, new and global approach to fight photoaging

- 5 Decrease in wrinkles
- 4 Elasticity & firmness enhancement
- 3 Protection of elastic fibers
- 2 ↓ UV-, IR- & heat-induced MMP production
- 1 Cathepsin G inhibition





Clinical study

- 4 Skin firmness & elasticity enhancement
- 5 Anti-wrinkle effect

Tested formula

Water 73.83%, Hydrogenated Vegetable Glycerides 5%, Caprylic/ Capric Triglyceride 5%, Butylene Glycol 3%, Myristyl Myristate 3%, **Elix-IR™ 2%**, Glycerin 2%, Polysorbate 60 2%, Cetyl Alcohol 1%, Butyrospermum Parkii (Shea Butter) 1%, Phenoxyethanol & Parabens 0.8%, Sodium Hydroxide (10% solution) 0.66%, Sorbitan Monooleate 0.5%, Carbomer 0.15%, Dimethicone 0.04%, Fragrance 0.02%.

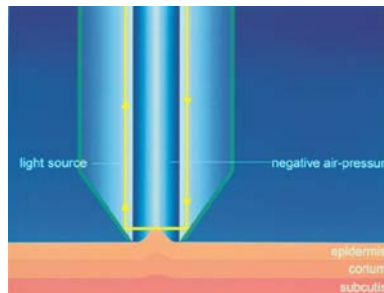
Clinical evaluation of firmness and elasticity

Protocol

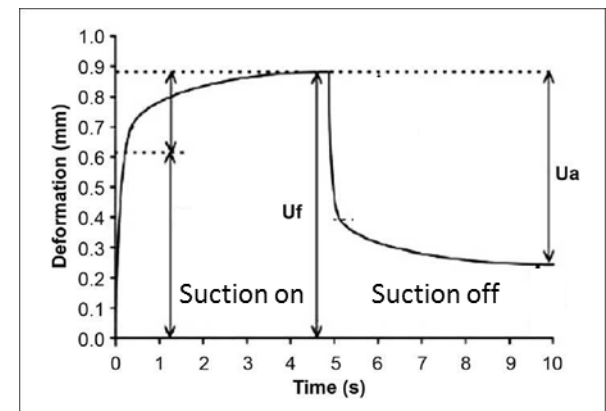
- 20 women (age between 35 to 65 years) regularly exposed to sun.
- Twice daily application on forearm of a cream with 2% Elix-IR™ vs. a placebo during 28 days (no sunscreen used).
- Test done during high summer season = high sun exposure.
- Skin firmness and elasticity were measured by Cutometer®

Firmness = resistance of the skin to the suction = U_f

Elasticity = ability to return into its original position = U_a/U_f

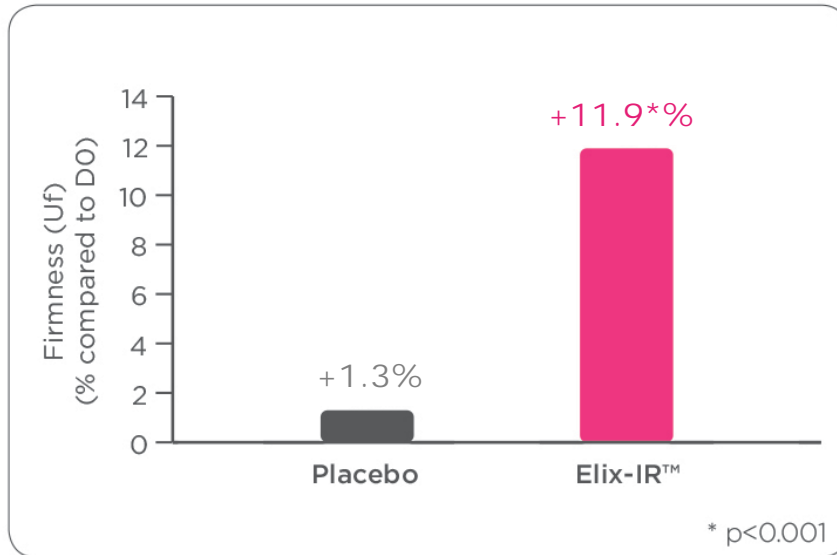


Suction

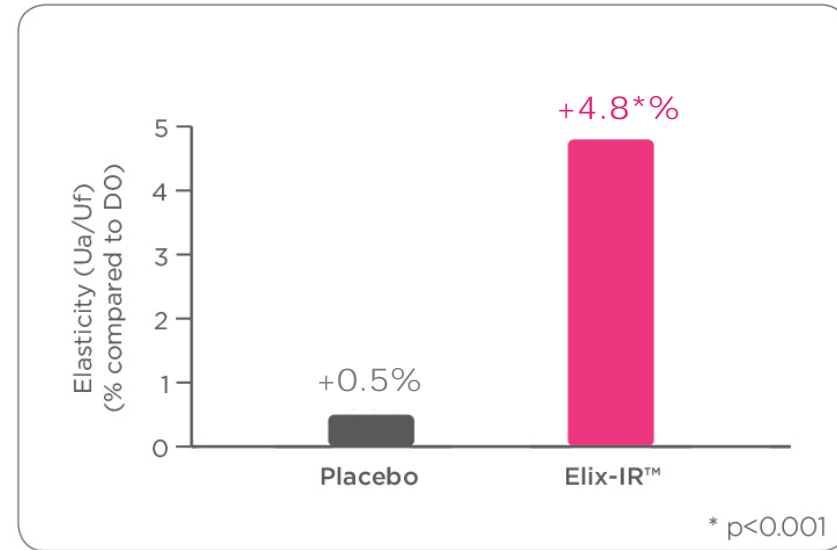


Clinical evaluation of firmness and elasticity

SKIN FIRMNESS D28



SKIN ELASTICITY D28



Elix-IR™ increases skin firmness and elasticity limiting sun damages.



Clinical evaluation of wrinkles

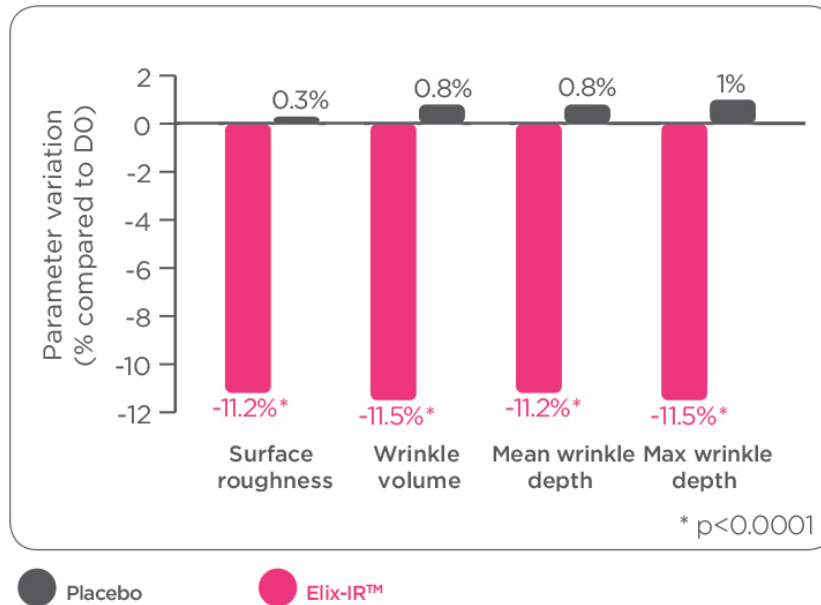


Protocol

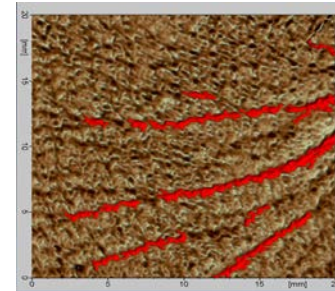
- 20 women (age between 35 to 65 years) regularly exposed to sun.
- Twice daily application of a cream with 2% Elix-IR™ on split-face versus a placebo during 28 days (no sunscreen used).
- Test done during high summer season = high sun exposure.
- Crow's feet wrinkle measurements with DermaTOP-blue (*in vivo* 3D scanner) at D0 and D28.

Clinical evaluation of wrinkles

CLINICAL EVALUATION OF WRINKLES



D0



D28



Roughness	Up to 27.5%
Wrinkle volume	Up to 25.5%
Mean wrinkle depth	Up to 22.7%
Max wrinkle depth	Up to 24.4%

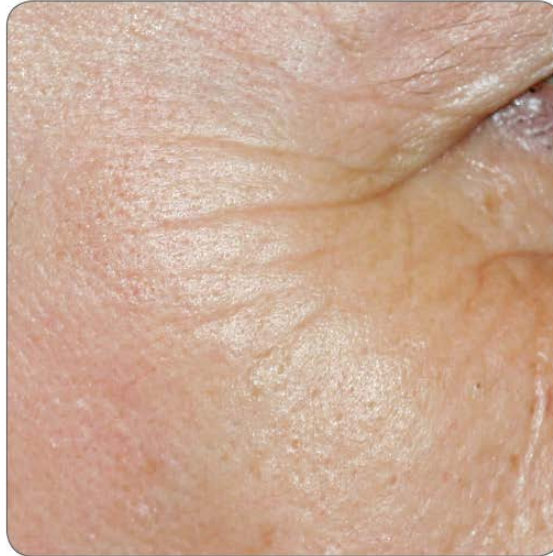
100% positive responses

Elix-IR™ improves skin surface and wrinkles parameters to provide a youthful appearance.

Clinical evaluation of wrinkles



DO



D28

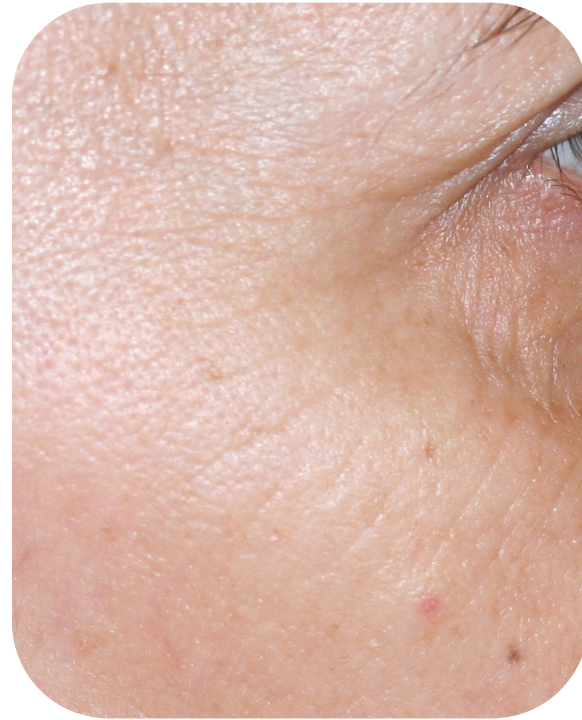
Volunteer # 150

Clear wrinkle reduction.

Clinical evaluation of wrinkles



D0

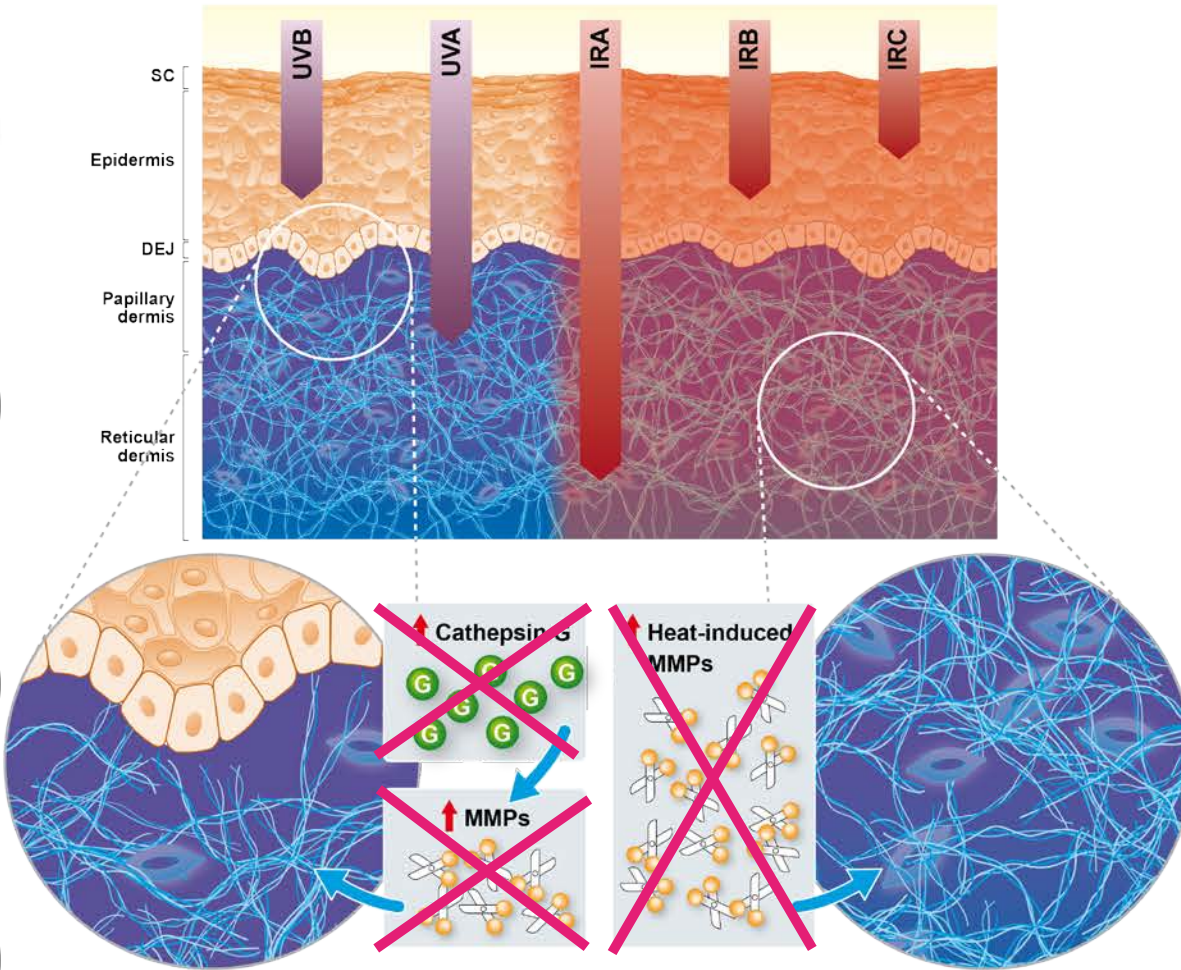


D28

Volunteer # 144

Visible smoothing effect.

Summary



↓ Wrinkles

↑ Elasticity & Firmness

↑ Tropoelastin & Fibrillin-1

↓ MMPs

↓ Cathepsin G

Tolerance studies

- Skin Irritation (single patch test) (concentration tested: 20%)
- Eye Irritation (NRR) (concentration tested: 20%)
- Sensitization (HRIPT) (concentration tested: 20%)
- Genotoxicity (AMES) (concentration tested: 20%)
- Phototoxicity (3T3 NRU) (concentration tested: 20%)

Ecotoxicity

- Biodegradability
- Aquatotoxicity (daphnies)

Excellent safety profile.

FEATURES AND BENEFITS

FEATURES	BENEFITS
Natural botanical extract	Nature inspired answer for sun care and photoaging
Unique anti-aging mechanism of action via Cathepsin G inhibition	Modulates the origin of sun-induced MMP production
Fights Infra'Aging™ (IR-induced aging & thermal aging)	<ul style="list-style-type: none">- New strategy for a global action against visible signs of sun damage and premature aging- Complementary to classical UV protection
Outstanding results on repeated sun exposed volunteers	<ul style="list-style-type: none">- Improvement of firmness and elasticity- Reduction of the appearance of wrinkles

Product information

Recommended dosage

0.5 - 1% : preventive anti-aging care

1 - 2% : intensive treatment & protective sun care

Applications

- Anti-aging skin care
- Anti-wrinkle skin care
- Eye contour care
- Daily skin care
- Men's care
- Sun care
- After-sun care

China-Compliant



Ecocert registered





Product information



INCI Names

Water (and) Glycerin (and) Polygonum Aviculare Extract

Preservatives

Sodium benzoate, potassium sorbate



Appearance

Yellowish to brownish liquid



Formulation

Add below 40°C



Optimum pH

4-8

ANTI-PHOTOAGING ELIXIR

INGREDIENTS	INCI NAMES	%
A Deionised Water	Water	70.20
Dermofeel® PA-12	Sodium Phytate	0.20
Glycerin	Glycerin	2.00
Granlux® AOX GL	Glycerin (and) Picea Abies Extract (and) Alcohol	1.00
Phenoxyethanol	Phenoxyethanol	0.60
Chlorphenesin	Chlorphenesin	0.30
B Heliofeel™	Glyceryl Stearate Citrate (and) Polyglyceryl-3 Stearate (and) Hydrogenated Lecithin	4.00
Heliogel™	Sodium Acrylates Copolymer (and) Hydrogenated Polyisobutene (and) Phospholipids (and) Polyglyceryl-10 Stearate (and) Helianthus Annuus (Sunflower) Seed Oil	2.00
Shea butter	Butyrospermum Parkii (Shea) Butter	2.00
Cetiol C5	Coco Caprylate	3.00
Cetiol CC	Dicaprylyl Carbonate	3.00
Beeswax	Beeswax	2.00
DC 200/50cs	Dimethicone	2.00
C Elix-IR™	Water (and) Glycerin (and) Polygonum Aviculare Extract	2.00
Canadian Willowherb™	Water (and) Epibolium Angustifolium Flower/ Leaf/Stem Extract	1.00
Capt-System™ E	Lecithin (and) Glycerin (and) Alcohol (and) Tocopherol	0.50
Suprem™ Nature Rose	Water (and) Rosa Canina Fruit Oil (and) Lecithin (and) Polyglyceryl-3 Diisostearate (and) Glycerin (and) Glyceryl Stearate (and) Rosa Gallica Flower Extract	2.00
D Covabead PMMA	Polymethyl Methacrylate	2.00
E Family SG31731	Fragrance	0.20



THANK YOU!