

# REGU<sup>®</sup>-AGE PF

Visibly reduces dark circles  
and eye puffiness

April 2013

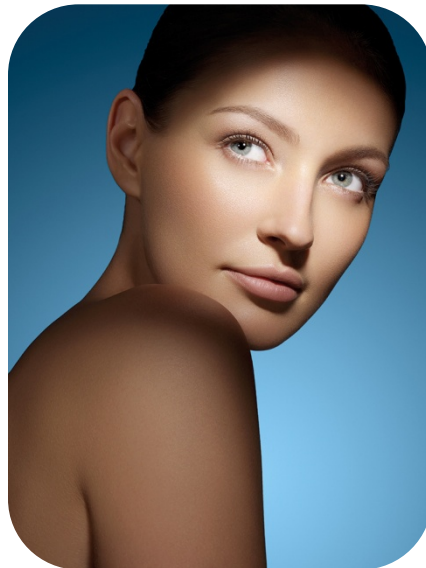
# Agenda

1

Introduction

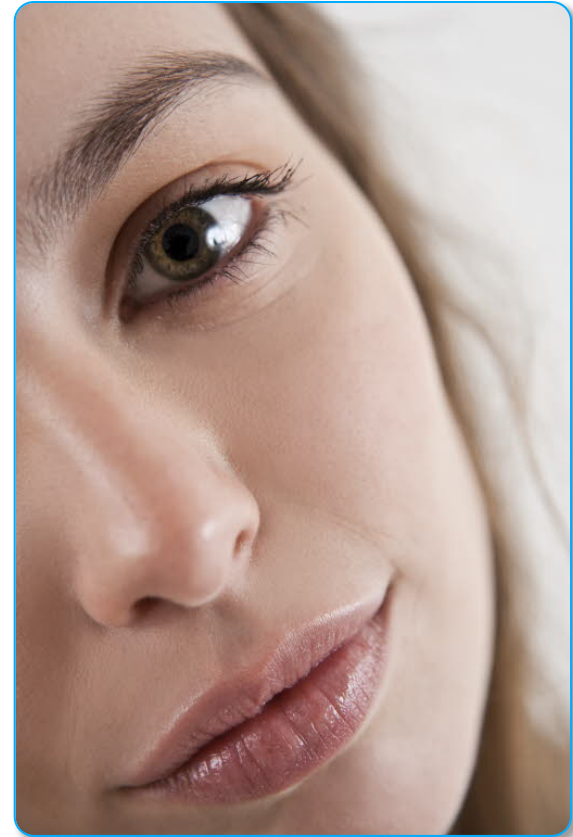
2

DSM REGU-AGE® PF

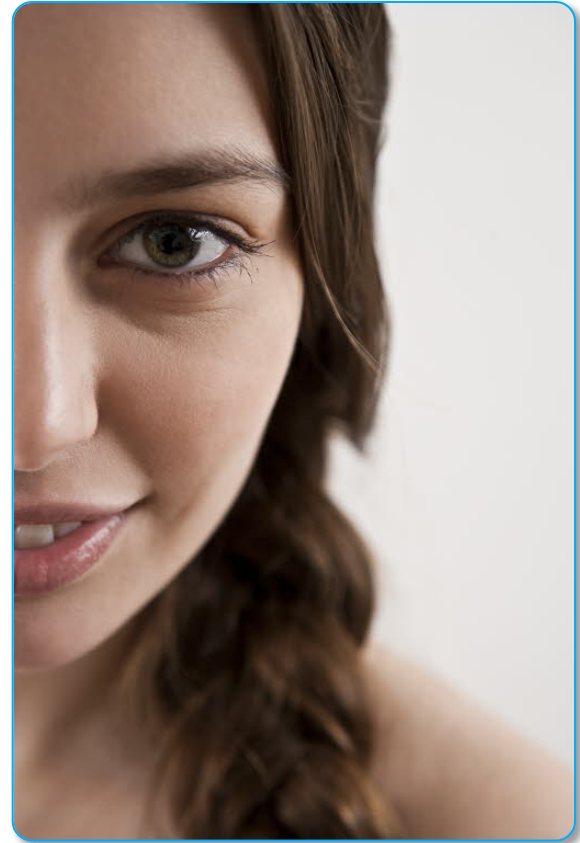


# The Eye as a sign for beauty

- Symbol for the physical and psychological condition
- A sign of human character
- Symbolizes youthful look and vitality



**Discoloration and puffiness of the under-eye skin are a common beauty concern for lots of women**



# 7% of skin care product launches claim benefits for the eye area (GNPD, 2011)

- 40% of eye care product launches are designed to treat dark circles and eye puffiness
- 60% of eye care product launches are designed to improve the delicate area around the eyes; Claims are e.g.:
  - Illuminate eye contour area
  - Revitalize tired eyes
  - Leaving eye area lastingly smooth and hydrated



# Dark circles and eye puffiness possible causes:

- **genetic disposition**
  - can weaken the capillaries in the skin around the eyes
- **aging**
  - skin around the eyes is very thin and becomes even thinner with ongoing aging process
  - skin allowing pigment and vessels to be more noticeable
- **life style, sun exposure, allergic reactions, lack of sleep**
  - weaken the connective tissue

# Dark circles and eye puffiness are caused by various specific mechanism:

- **reduced blood circulation**
  - skin capillaries become clogged
  - dark circles
- **reduced drainage**
  - accumulation of excess fluid
  - puffiness
- **insufficient supply of oxygen and ongoing inflammation processes by high levels of reactive oxygen species**
  - contribute to the degradation of the collagen and elastin matrix
- **increased release of collagenases and elastases**
  - breakdown of connective tissue
  - slackness



## REGU<sup>®</sup>-AGE PF

Visibly reduces dark circles  
and eye puffiness



# REGU<sup>®</sup>-AGE PF

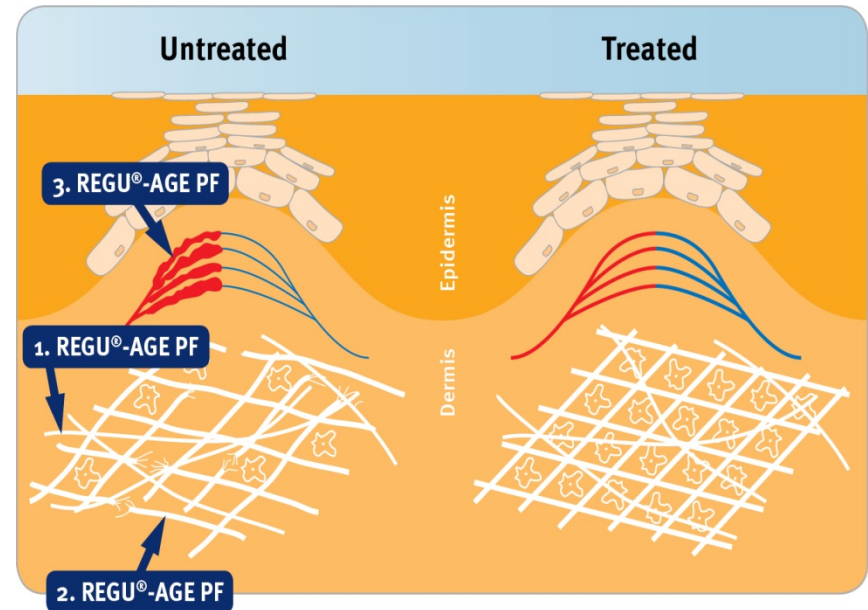
## Unique composition

- Paraben-free complex of specially purified natural soy and rice peptides and biotechnologically-produced superoxide dismutase isolated from natural yeast strain
- INCI name (active): Glycine Soja (Soybean) Protein  
Hydrolyzed Rice Protein  
Superoxide Dismutase
- Preservatives: Phenoxyethanol,  
Sodium Benzoate,  
Potassium Sorbate

# REGU<sup>®</sup>-AGE PF

## Multi target mechanism

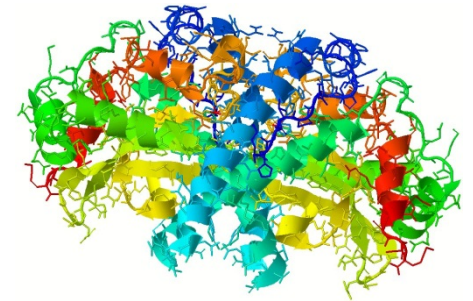
1. Protection against oxidative stress
2. Strengthens and protects the collagen and elastin matrix
3. Improves the capillary circulation



# REGU<sup>®</sup>-AGE PF

protects the skin around the eyes from oxidative stress with superoxide dismutase

The main antioxidants created by the body, superoxide dismutase(SOD), is the first line of defense against the free radical substance.



The SOD inhibitory activity of REGU<sup>®</sup>-AGE PF is: > 1000 ORU\* /ml\*\*

# REGU<sup>®</sup>-AGE PF

strengthens and protects the collagen and elastin matrix by inhibiting collagenases and elastases

Collagenase inhibitory activity of REGU<sup>®</sup>-AGE PF : > 10 ColU<sup>1</sup>/ml  
(according photometric assay)\*

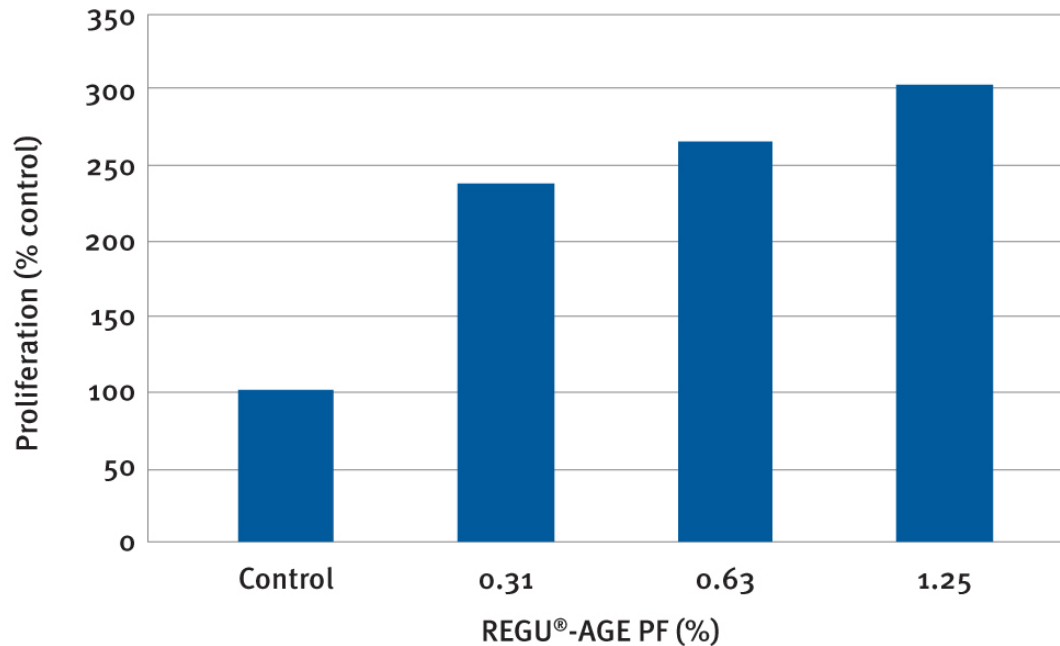
Elastase inhibitor activity of REGU<sup>®</sup>-AGE PF : > 5 EIU<sup>2</sup>/ml  
(according photometric assay)\*

<sup>1</sup>...Collagenase Inhibitor Unit (ColU)

<sup>2</sup>...Elastase Inhibitor Unit (EIU)

# REGU<sup>®</sup>-AGE PF

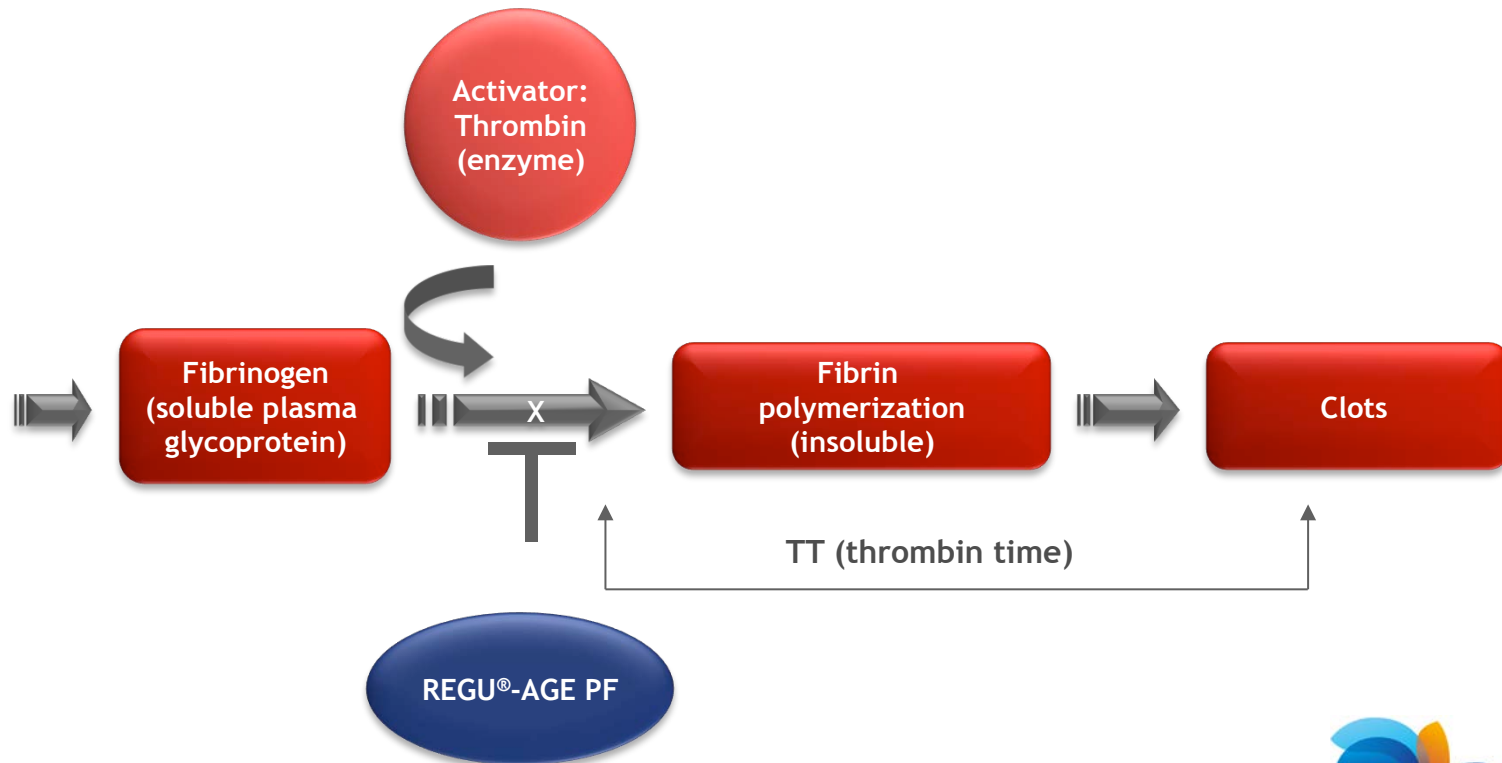
strengthens the dermis by stimulating the fibroblast proliferation *in vitro*



An *in vitro* assay demonstrated that at a concentration of 1.25%, REGU<sup>®</sup>-AGE PF stimulates a fibroblast proliferation about 200% greater than the control

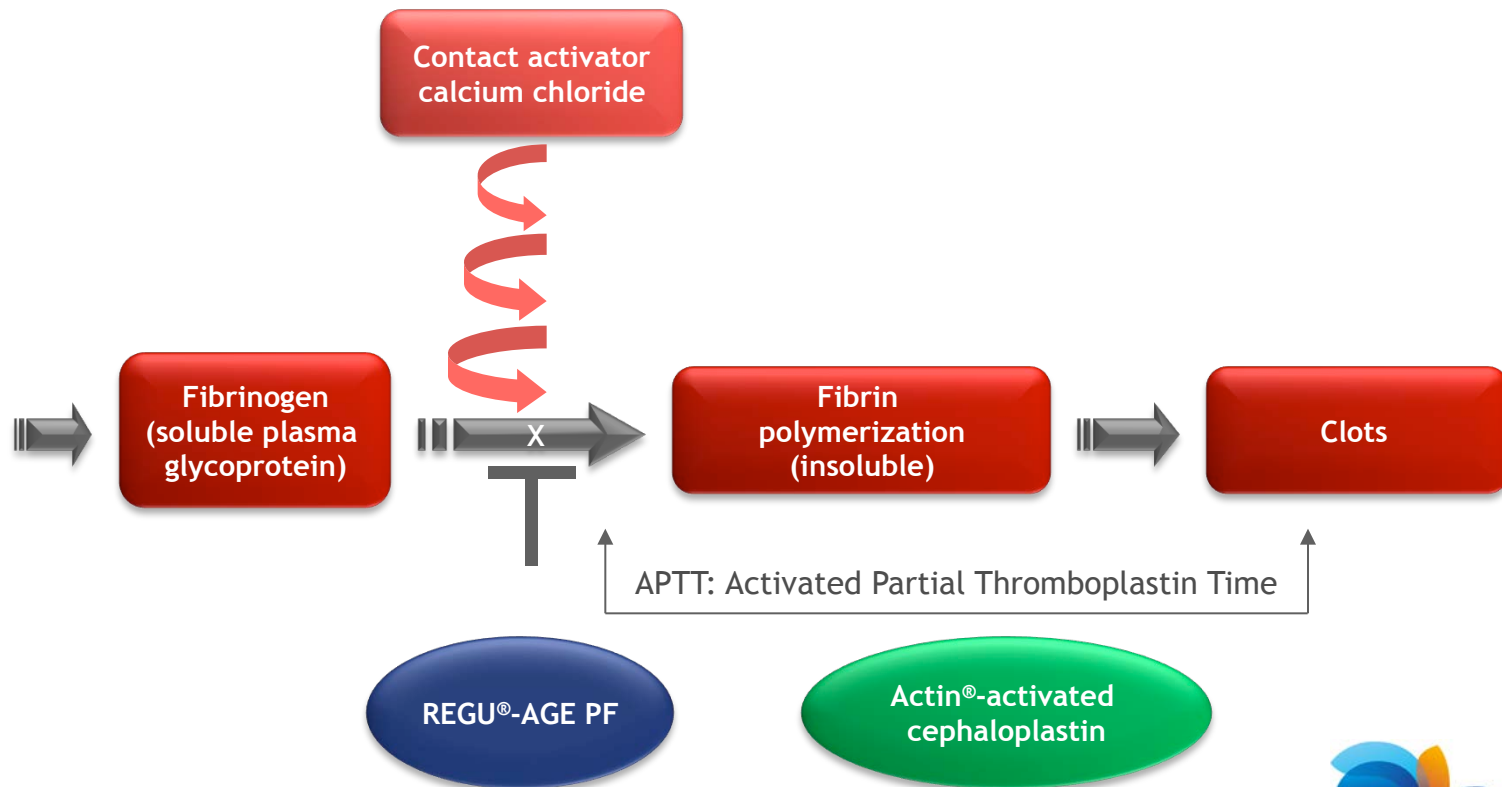
# Capillary coagulation test *in vitro*: Measurement of TT (thrombin time)

The TT is a clotting test that provides immediate information on the quality and quantity of clottable protein present



# Capillary coagulation test *in vitro*: Measurement of APTT (Activated Partial Thromboplastin Time)

The APTT is a global screening procedure primarily used to evaluate coagulation abnormalities



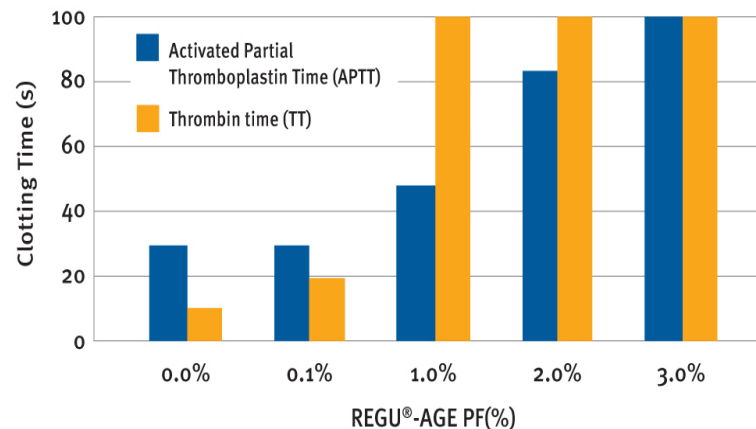
# REGU<sup>®</sup>-AGE PF

## Beneficial effect on capillary circulation *in vitro*

**Thrombin time (TT):** A fibrinogen solution was pre-incubated with REGU<sup>®</sup>-AGE PF for 1 min before adding a thrombin solution to trigger coagulation. Typical reference time is 10-15s.

**Activated Partial Thromboplastin Time (APTT):** An APTT reagent was pre-incubated with REGU<sup>®</sup>-AGE PF and human standard plasma for 3 min, whereupon calcium chloride solution was added to initiate coagulation. Typical reference time is 20-39s

The clotting times were measured using a coagulometer



REGU<sup>®</sup>-AGE PF increases the clotting time already at low levels and hence improves capillary circulation



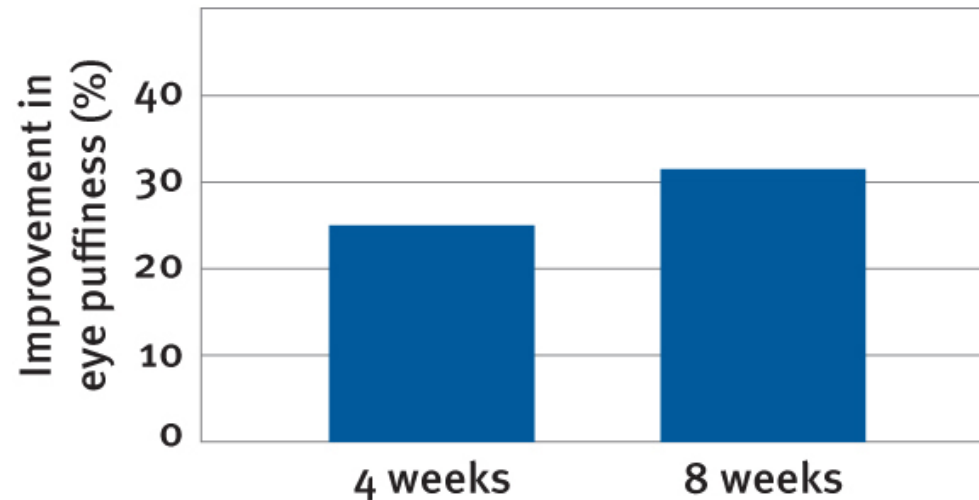
# REGU<sup>®</sup>-AGE PF

## Visibly reduces dark circles and eye puffiness

### *In vivo*: study design

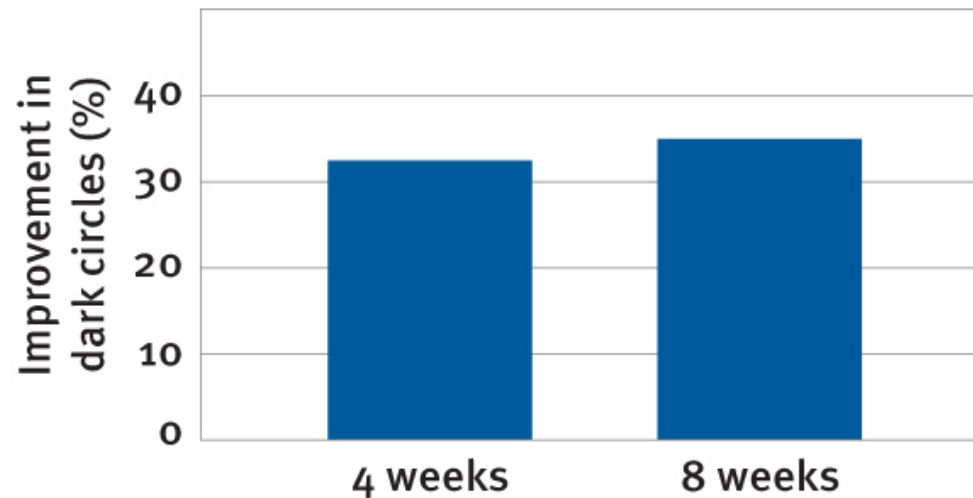
- A double blind study was performed with 20 female subjects (age 30+)
- Per test area a cream with 5% REGU<sup>®</sup>-AGE PF was applied to test areas of subjects faces twice a day after facial cleansing
- 8 weeks treatment
- At d0 and at week 4 and 8, evaluations of eye puffiness and dark circle were performed by trained technicians
- Photos before and after 8 weeks treatment

# REGU<sup>®</sup>-AGE PF reduces eye puffiness



After only 4 weeks of treatment with 5% REGU<sup>®</sup>-AGE PF, a reduction of eye puffiness of around 25 % could be observed

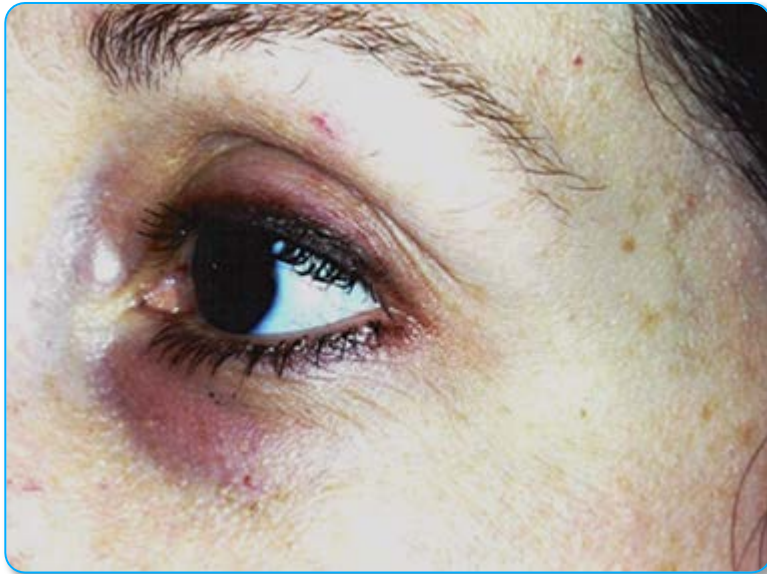
# REGU<sup>®</sup>-AGE PF reduces dark circles



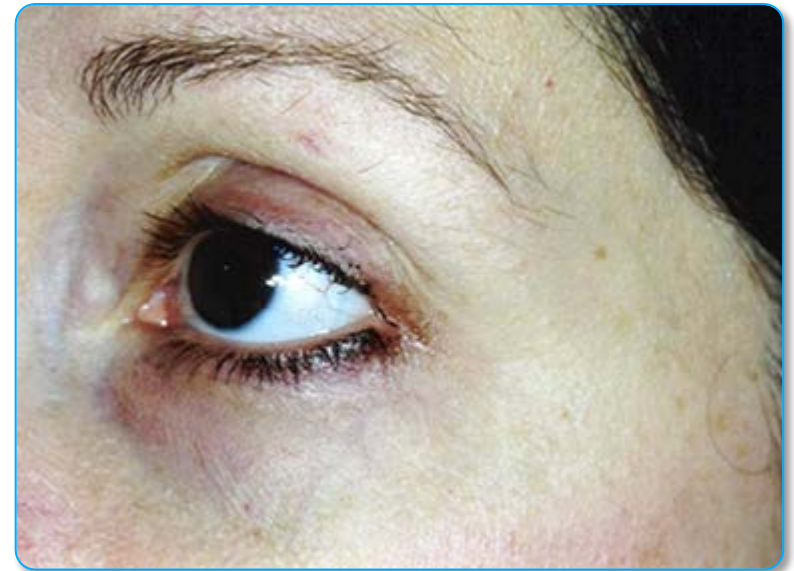
After only 4 weeks of treatment with 5% REGU<sup>®</sup>-AGE PF, a reduction of dark circles of around 32 % could be observed.

# REGU<sup>®</sup>-AGE PF

Visibly reduces dark circles and eye puffiness



Before treatment

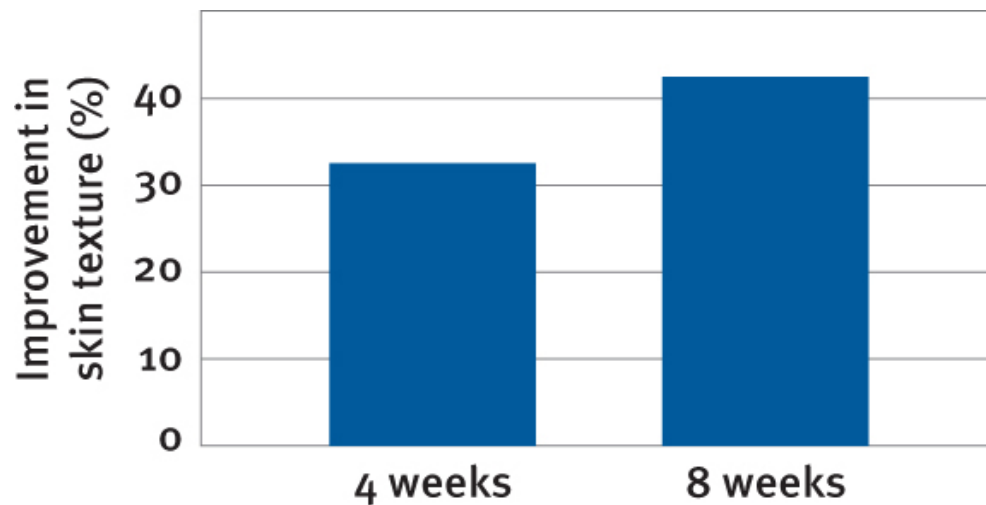


After 8 weeks

# REGU<sup>®</sup>-AGE PF

## Improvement of skin texture

Silicone replicas of the skin texture of eye area were taken and analyzed via digital image analysis for lines and wrinkles, as well as overall skin texture.



After only 4 weeks of treatment with 5% REGU<sup>®</sup>-AGE PF, an improvement of skin texture of more than 30% could be observed

# REGU<sup>®</sup>-AGE PF

## Cosmetic application

- For facial care, especially to combat under-eye dark circles and eye puffiness
- Eye care products

## Formulation

- yellowish to amber coloured, clear to turbid solution
- can easily be incorporated into the aqueous phase of a formulation
- should be processed below 40° C
- is stable in the pH range of 5.5 to 8.0

## Suggested concentration

- 2 to 5% REGU<sup>®</sup>-AGE PF in cosmetic formulations

# Anti Wrinkle Eye Contour Cream with REGU<sup>®</sup>-AGE PF and SYN<sup>®</sup>-COLL

reduces wrinkles and fine lines around the eyes whilst diminishing the appearance of dark circles and puffiness

Phase	Ingredients	INCI Name	% w/w
A	Lanette 16	Cetyl Alcohol	3.00
	Eutanol G	Octyldodecanol	3.00
	Finsolv TN	C12-15 Alkyl Benzoate	2.50
	Cutina CP	Cetyl Palmitate	1.50
	AMPHISOL <sup>®</sup> K	Potassium Cetyl Phosphate	1.00
B	Pemulen TR-1	Acrylates/C10-30 Alkyl Acrylate Crosspolymer	0.10
C	Water dem.	Aqua	81.10
	Glycerin 99.5%; Wasserfrei	Glycerin	3.00
	Preservative	Preservative	q.s.
D	REGU <sup>®</sup> -AGE PF	Aqua & Glycerin, Hydrolized Rice Protein, Glycerine Soja	3.00
	SYN <sup>®</sup> -COLL	Glycerin & Palmitoyl Tripeptide-5	1.00

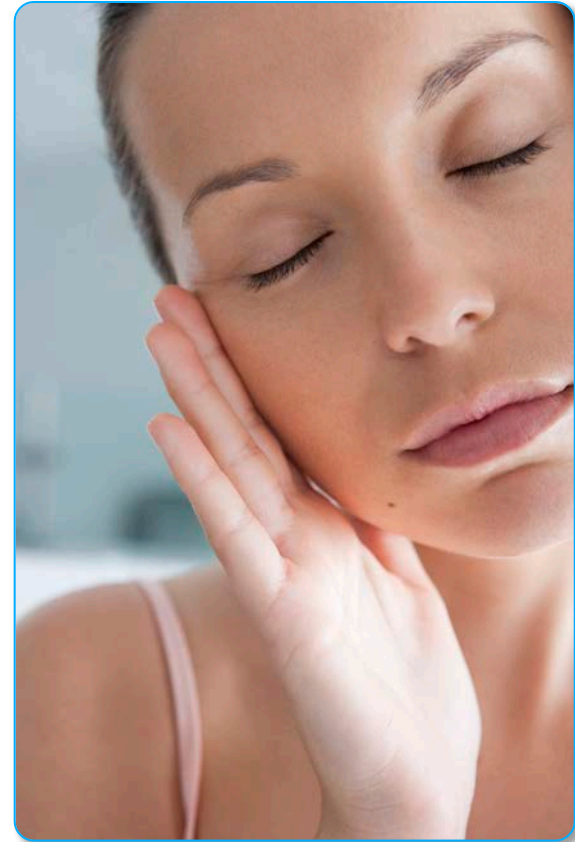
# REGU<sup>®</sup>-AGE PF

## Unique product features

- Complex of carefully-purified natural soy and rice peptides, and biotechnologically-produced superoxide dismutase
- Paraben-free
- Multi-target mechanisms

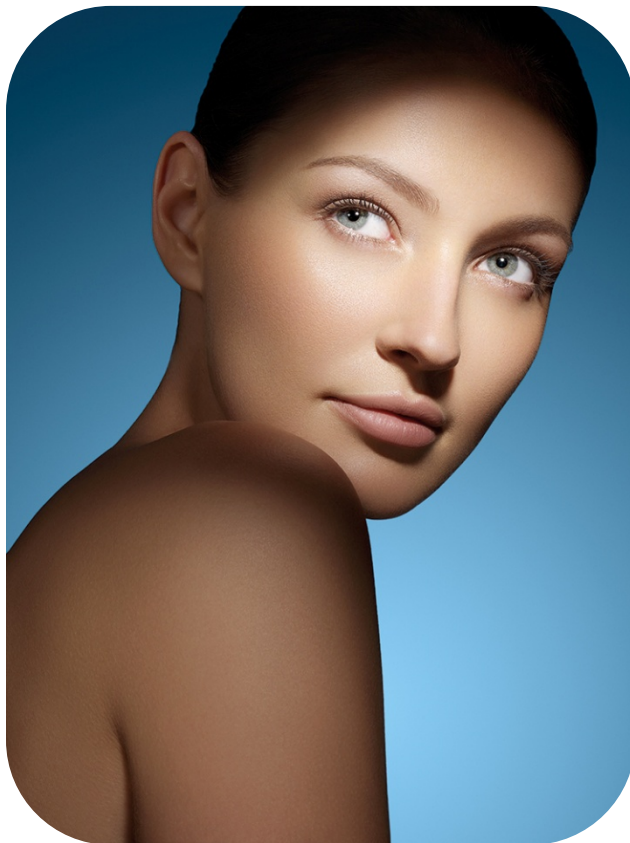
## Benefits

- Visibly reduces under-eye dark circles and eye puffiness
- Improves skin texture by more than 30% in 4 weeks
- Protects and strengthens the delicate skin under the eyes





# Back up REGU<sup>®</sup>-AGE PF



# REGU<sup>®</sup> -AGE PF

## The starting material is soya

“There can be no doubt that the soybean is one of the most promising of all agricultural plants for an almost unlimited variety of industrial uses, and that it is going to play an outstanding role in the future economic life of this country.”

Henry Ford



# REGU<sup>®</sup>-AGE PF

## The starting material is rice

Rice is a symbol of life and fertility  
- hence the tradition of throwing rice at weddings.

Rice bran is an old Japanese secret for smooth, soft skin.

The most known active ingredient which is produced from rice for the cosmetic industry is hydrolysed rice protein.





**BRIGHT SCIENCE. BRIGHTER LIVING.™**