



Stop to facial flushing  
and chronic redness:  
recover your well-being

**REDYLESS®**

[ Anti-redness ]



*Skin redness under  
control!*



## CONTEXT



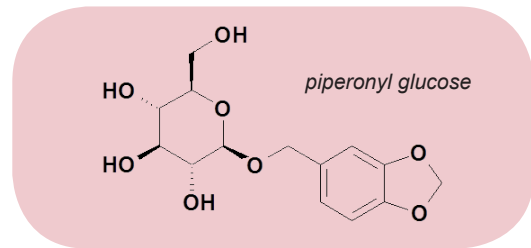
From the age of 25, everybody and especially women and people with fair skin, can be affected by facial redness. Depending on their intensity, this **transitory redness (facial flushing)** or **persistent redness (erythrosis/rosacea)** could be a real embarrassment and indeed a social disadvantage for those who are affected.

The causes or circumstances that increase redness can be numerous; (**heredity, sudden and significant temperature variations, spicy food or alcohol, emotional stress, sun, pollution...**) and are biologically expressed, depending on the degree of redness, through a **hyper reactivity to external stimuli** and/or a **blood vessel network disruption (uncontrolled angiogenesis, loss of vessels structure and persistent vasodilation)**.

To reduce redness, it is recommended to keep a close eye on diet, to protect from thermal stress and to consider laser therapy. Nevertheless, **new possibilities to control daily redness are offered** thanks to a better understanding of biological mechanisms, including **the discovery of the receptors sensitive to variations hot/cold temperature and to some food-related stress as well as of markers of the vascular structure**.

## DEFINITION

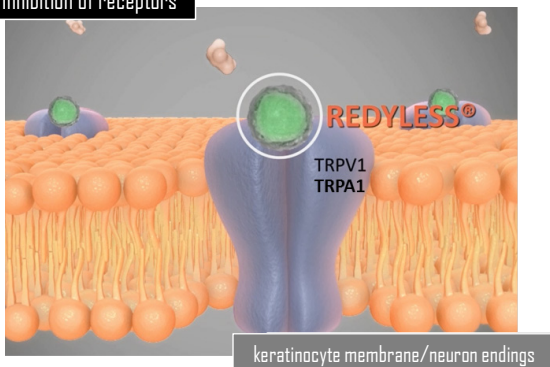
REDYLESS® is based on a new molecule, the **piperonyl glucose**, which is obtained by the transfer of glucose, coming from saccharose, on piperonylic alcohol, thanks to a specific enzyme called glucosyl-transferase.



## MECHANISM OF ACTION

REDYLESS® offers a unique mode of action allowing to **control redness on a daily basis, whether it be transitory or persistent** to help individuals suffering from redness to recover their well-being and comfort (patented).

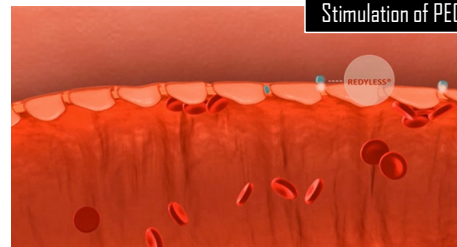
### Inhibition of receptors



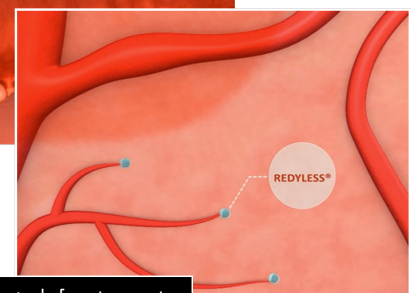
- REDYLESS® **inhibits the activity of specific receptors sensitive to temperatures and food-related stress: TRPA1 and TRPV1**, to avoid the occurrence of facial flushing.

- REDYLESS® **reorganizes the structure of the blood vessel network** by **controlling the angiogenesis, stimulating vessels resistance to deformation (PECAM-1 marker) and reducing their diameter**, to visibly reduce (in intensity and size) the redness such as erythrosis/rosacea.

### Stimulation of PECAM-1



### Control of angiogenesis



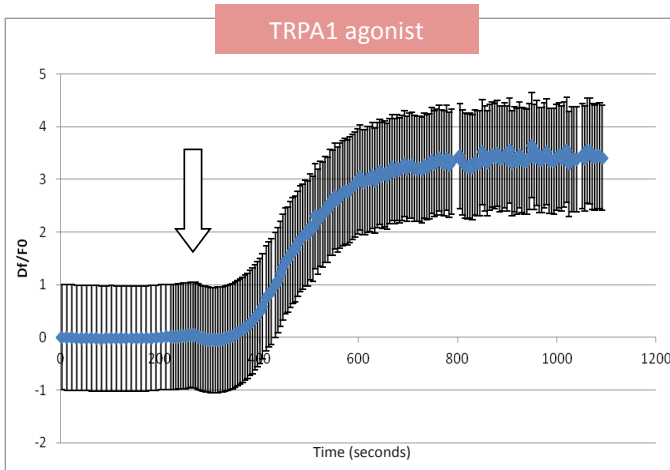
CONTROL OF SKIN SENSITIVITY TO CLIMATE CHANGES AND FOOD-RELATED STRESS

1. ANTAGONISM TOWARDS THE RECEPTOR RESPONDING TO COLD: TRPA1

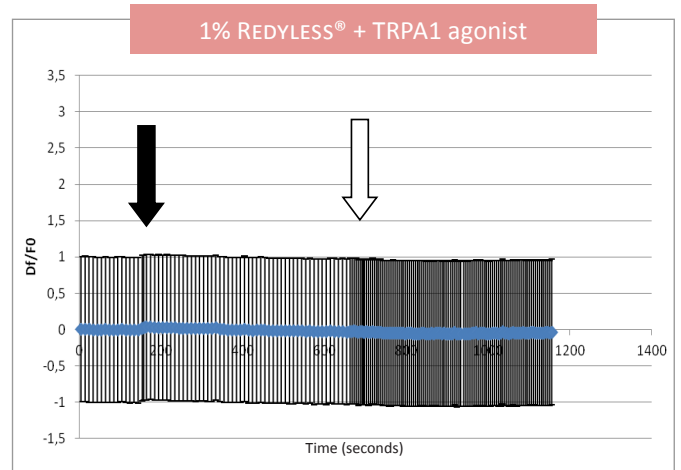
*In vitro studies* on keratinocytes incubated with a Fura-2 probe during 1h and put on calcium image system.

1<sup>st</sup> study: record of the calcium flash after introduction in the medium of a polygodial solution (3μM), reference agonist of TRPA1;

2<sup>nd</sup> study: record of the calcium flash after introduction in the medium of a 1% REDYLESS® solution followed 10min after by the introduction of the agonist (polygodial).



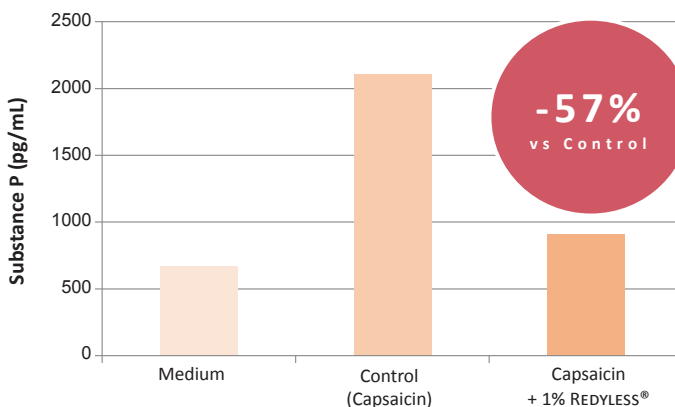
Activation of TRPA1 : calcium release



No calcium release: total inhibition of TRPA1 activity

2. ANTAGONISM TOWARDS THE RECEPTOR RESPONDING TO HOT AND SPICY SUBSTANCES: TRPV1

*In vitro study* on neurons. Addition of 100μL of capsaicin (reference molecule of spicy food activating TRPV1) and 1% REDYLESS® in the medium or not (Control). Incubation during 10min and sample of supernatants. Dosage of Substance P release by Elisa kit.



The inhibition of neuromediator release represents an inhibition of TRPV1 activity

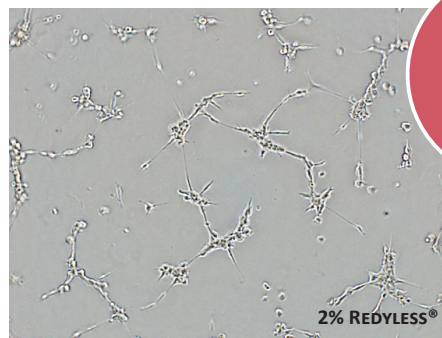
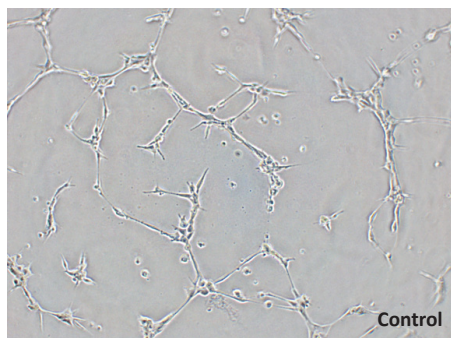
➔ By inhibiting the activity of specific receptors sensitive to climate changes and food-related stress, REDYLESS® allows to control facial flushing due to these circumstances



# CONTROL AND REORGANIZATION OF BLOOD VESSEL NETWORK

## 1. INHIBITION OF THE FORMATION OF NEW VESSELS

*In vitro study* on microvascular endothelial cells incubated during 6 hours with 20 $\mu$ L suramin (molecule of reference inhibiting angiogenesis) or 2% REDYLESS<sup>®</sup> in the medium vs. untreated control. Evaluation of the surface area occupied by new vessels through microscope photography and image analysis.



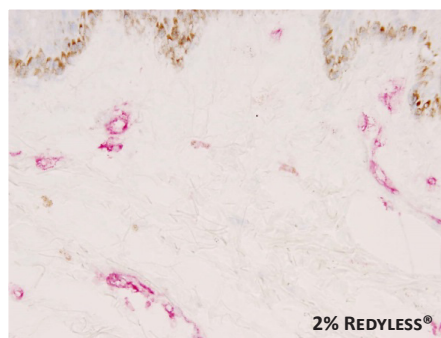
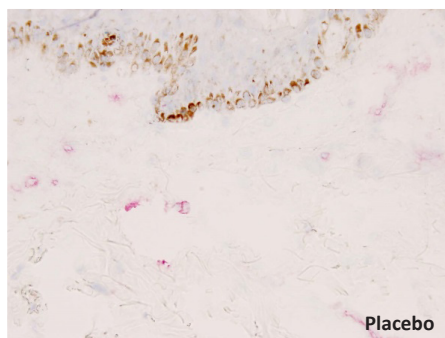
-26%\*  
vs Control

\* p<0.05

⇒ REDYLESS<sup>®</sup> allows to control angiogenesis responsible for spreading and visibility of chronic redness

## 2. INCREASE OF THE VESSELS RESISTANCE TO DEFORMATION

*Ex vivo study* on explants treated by **topical application** at D0, D2 and D4 with 2% REDYLESS<sup>®</sup> vs. Placebo or vs. untreated control. At D6, quantification of the surface area occupied by immunolabelled PECAM-1 (the protein of vessels cohesion), by microscopy and image analysis.



+62.5%#  
vs Placebo

+225%\*\*\*  
vs Control

# p<0.1  
\*\*\* p<0.001

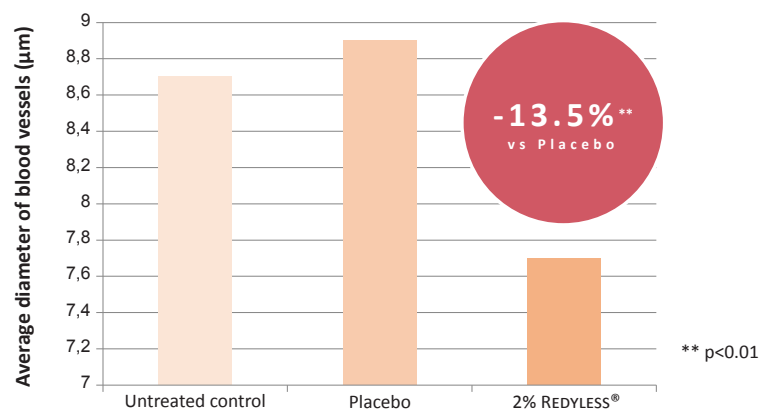
PECAM-1 in pink

⇒ By stimulating PECAM-1, REDYLESS<sup>®</sup> gives cohesion to blood vessels allowing them to better resist to persistent vasodilation and deformation linked to chronic redness

## 3. REDUCTION OF THE DIAMETER OF THE VESSELS

*Ex vivo study* on explants treated by **topical application** at D0, D2 and D4 with 2% REDYLESS<sup>®</sup> vs. Placebo or vs. untreated control. At D6, measurement of the average diameter of vessels (revealed by coloration of PECAM-1 marker) by image analysis.

⇒ By structuring the vessels, REDYLESS<sup>®</sup> allows to reduce their diameter

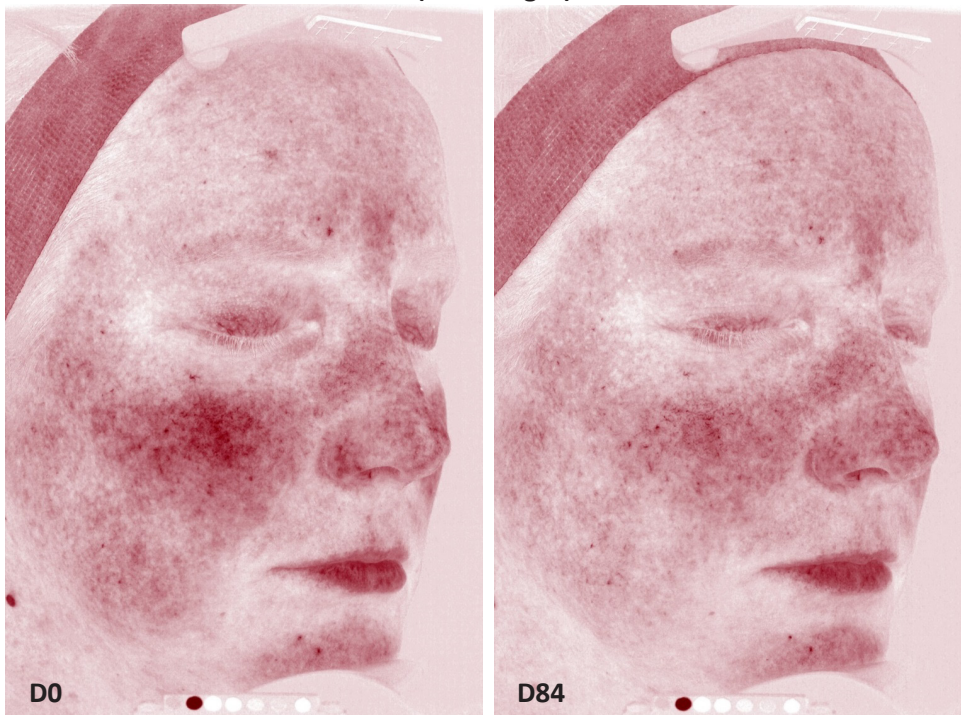


## BENEFITS: REDUCTION OF THE INTENSITY AND SURFACE AREA OCCUPIED BY REDNESS

*In vivo study during winter, on volunteers having light to moderate chronic redness (erythrosis/rosacea). Twice-daily application on half-face of a cream containing 2% REDYLESS® vs. Placebo.*

*Evaluation at D0, D56 and D84 of the clinical scoring of redness by a clinician and of the surface area occupied by redness (in pixels) through videocapillaroscopy. VISIA images (Red and with cross-polarized light) are taken for illustration.*

### Illustration of REDYLESS® effect on redness (Red images)

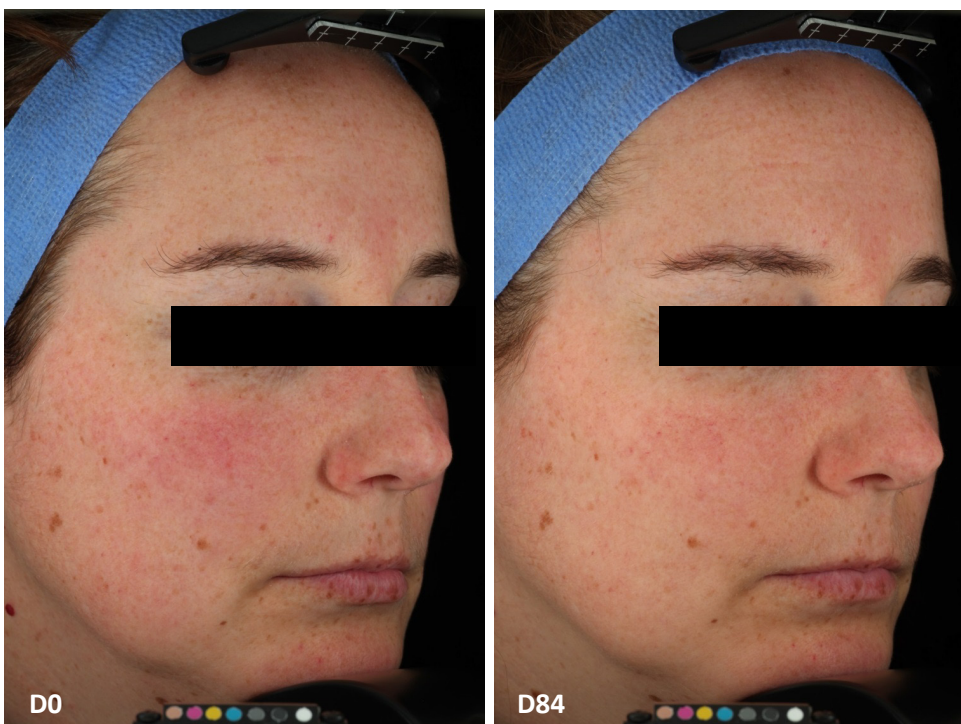


**-24%\*\***  
of occupied  
surface  
on average

**UP TO  
-68%**  
of occupied  
surface

\*\* p<0.01  
\*\*\* p<0.001

### (images with cross-polarized light)



**-15%\*\*\***  
of clinical  
scoring  
on average

**UP TO  
-40%**  
of clinical  
scoring

**➔ By controlling angiogenesis and reorganizing blood vessels network, REDYLESS® visibly reduces redness in intensity and surface area for a more radiant complexion**

## ADDITIONAL INFORMATION

**INCI/CTFA Name:** Propanediol (and) Water (and) Piperonyl glucose

**Preservative system:** none

**Regulatory status:** authorized for use in EU, USA, Japan, and subject to conditions in Canada and Australia

## APPLICATIONS

**Recommended dose:** 2%

**Night and Day anti-redness skin care**

**Skin care specific to rosacea/erythrosis**

**Seasonal skin care (summer/winter)**

**Extreme conditions skin care**

**Reactive/sensitive skin care**

**Skin care for postmenopausal women**

## FORMULATION

**pH Stability:** 4.0 to 8.0

**Thermostability:** recommended temperature 45°C ; may be incorporated at a maximum temperature of 70°C but should not be heated for several hours to limit the hazard of degradation

**Soluble** in water, glycerin, butylene glycol, 20% ethanolic solution

### Formulation example:

No Mo'Red Balm

Ref. 338501/5



	INGREDIENTS	INCI NAME	%
A	OLIVEM 1000 (HALLSTAR)	<i>Cetearyl olivate / Sorbitan olivate</i>	5.00
	OLIVEM 800 (HALLSTAR)	<i>Ceteareth-6 olivate</i>	2.00
	ISOFOL 20 (SASOL)	<i>Octyldodecanol</i>	2.00
	CETIOL CC (BASF)	<i>Dicaprylyl carbonate</i>	4.00
	MICROCARE SILICONE M8100 (THOR)	<i>Caprylyl methicone</i>	3.00
	DC 2503 (DOW CORNING)	<i>Stearyl dimethicone</i>	3.00
	DUB DONPG (STEARINERIE DUBOIS)	<i>Neopentyl glycol diethylhexanoate</i>	3.00
	TEGOSOFT CR (EVONIK)	<i>Cetyl ricinoleate</i>	5.00
	DUB SHOREA T (STEARINERIE DUBOIS)	<i>Shorea robusta seed butter</i>	5.00
B	DEMINEALIZED WATER	<i>Aqua</i>	QSP 100
	PRESERVATIVES	/	QSP
	ULTREZ 21 (NOVEON)	<i>Acrylates/C10-30 alkyl acrylate crosspolymer</i>	0.15
C	SUNSHINE SOFT GREEN (SUNCHEMICAL)	<i>CI 77891 (Titanium dioxide) / Synthetic fluorphlogopite</i>	2.00
	REDYLESS® (SOLABIA GROUP)	<i>Propanediol (and) Water (and) Piperonyl glucose</i>	2.00
D	NaOH, SOL. AT 10%	<i>Sodium hydroxide</i>	QSP PH

## Contact Us

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