



# REDIVINE

## Anti-urban pollution (inside and outside)

volatile pollutants + domestic dusts + artificial radiations  
(blue lights: domestic and multimedia lights)

Anti-oxidative stress  
Anti-aging



**EXSYMOL**  
MONACO

## URBAN POLLUTION AND PREMATURE AGING

### Accumulation of domestic pollutants

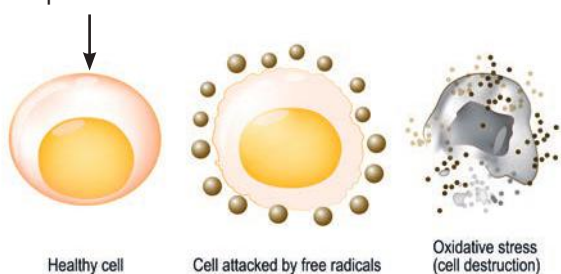
Progress allowed for a better house isolation and for energy control.

House isolation which is supposed to protect us from the outside pollution is in fact a trap for it leading to an increased concentration on the inside.

Because of low air renewal, it is pretty frequent to find more concentrated pollutant on the inside than outside.



Environnemental and domestic pollution



### Urban pollution, a threat for cells

Microparticles from urban pollution (20 times smaller than skin pores), domestic carbon monoxide (heating, cigarette smoke), domestic pollutants (furniture glue, paint solvents...) together with the blue light emitted by multimedia and artificial light, penetrate the skin and reach up to skin cells.

### Metabolization of urban pollutants

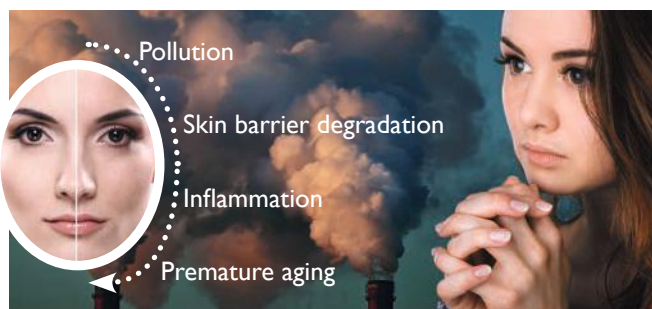
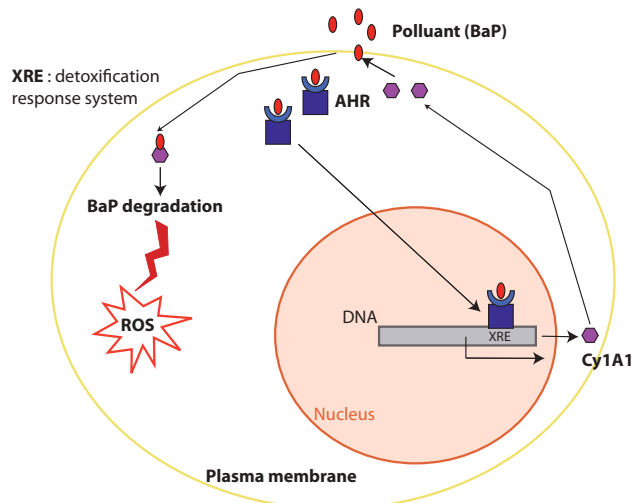
Pollutants (such as BaP) activate the cell xenobiotic response elements (XRE) which allows for the degradation of pollutants.

This detoxification process however generates ROS.

ROS accumulation is still an important risk for skin and cell's integrity.

Cell's sentinel Nrf2 controls ROS content and trigger anti-oxidant systems.

Environnemental pollution is therefore closely linked with cells pollution!



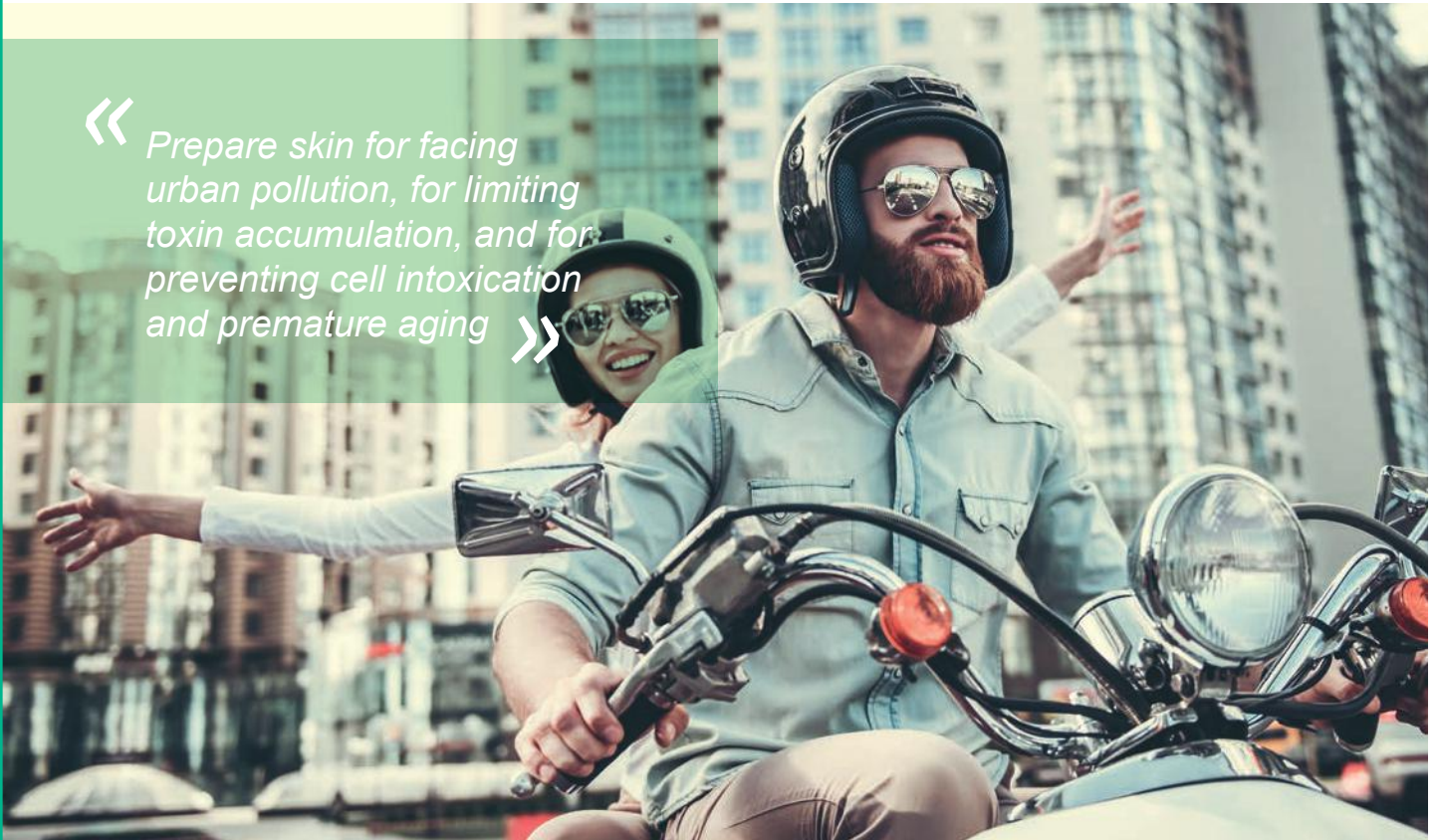
### Consequences of urban pollution

- Skin sensitivity: redness, dryness, irritations
- Skin dryness
- Dull skin tone
- Age spots
- Skin collapse
- Premature aging

# REDIVINE

## Cosmetic characteristics

« Prepare skin for facing urban pollution, for limiting toxin accumulation, and for preventing cell intoxication and premature aging »



### Cosmetic applications

- Anti-pollution
- Skin detoxification
- Anti-oxidative stress
- Sensitive skin (dermo-cosmetics)
- Anti-aging

### Beauty promises

- Hydration
- Anti-tiredness
- Radiant skin tone
- Anti-age spots
- Anti-wrinkles

### Cosmetic Concepts

- Protection against atmospheric pollution: volatile particles
- Protection against domestic pollution:
  - Artificial lighting, multimedia, volatile compounds and dust
  - Prevention of cell intoxication
- Fighting against invisible oxidative stress (pollution)
- Preventive stimulation of the cell sentinel: Nrf2
- Activation of the of ARE: « anti-oxidant response elements »
- Boost natural anti-ox defenses: Glutathione and NQO1

### Metabolic targets

- ARE stimulation (anti-oxidant response element)
- Maintains high levels of glutathione and NQO1
- Protection against cell intoxication by particles and domestic dust
- Protection against domestic radiations – blue lights: lighting and multimedia
- Protection of skin elastic fibres: anti-collagenase and elastase

# REDIVINE

## Anti-aging benefits of a protection against urban pollution

### Protection against air pollutants

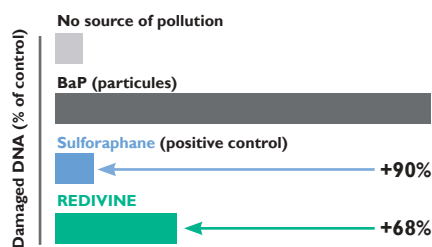


Air pollution is an atmosphere filled with polluting particles. The XRE system prevents cell intoxication by degrading volatile particles. This detoxification process however generates ROS. Pollution indirectly amplifies the oxidative stress.

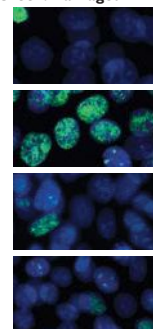


VOLATILE PARTICLES → CELL INTOXICATION

#### DNA PROTECTION



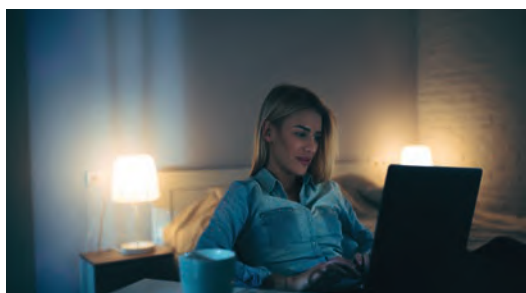
Blue: Nuclei  
Green: Damaged DNA



0.1% REDIVINE prevents keratinocytes' DNA damages by 68%, thus preventing skin premature aging  
(Evaluation model: Keratinocytes)

REDIVINE efficiently protects DNA, limits cell oxidation, and prevents premature aging

### Protection against domestic pollutants



DOMESTIC PARTICLES  
DUST AND HEAVY METALS



DOMESTIC RADIATIONS  
BLUE LIGHT: LIGHTING AND MULTIMEDIA

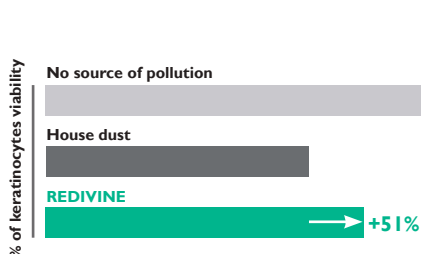


CELL OXIDATION +  
STRUCTURAL COLLAPSE

Domestic pollution includes:

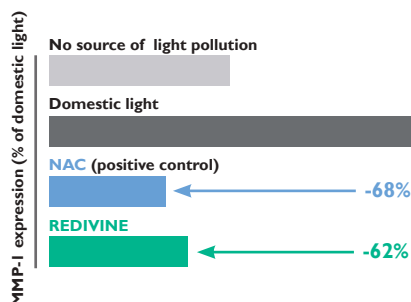
- Dust (often more toxic than the outside pollutants since they are often more concentrated in lead)
- Volatile pollutants
- Artificial radiations – lighting and multimedia (blue light)

#### ANTI-CELL INTOXICATION

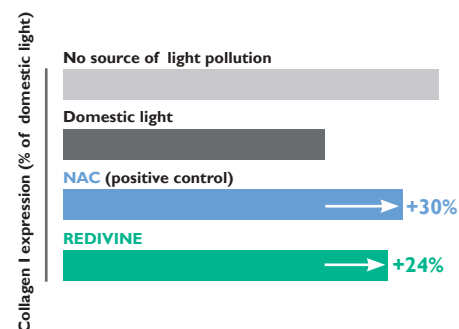


0.05% REDIVINE prevents cell's intoxication by 51%, therefore prevents skin premature aging  
(Evaluation model: Keratinocytes)

#### COLLAGEN PROTECTION



0.5% REDIVINE limits MMP-1 expression by -62%, thus preventing collagen degradation  
(Evaluation model: Fibroblasts)



0.1% REDIVINE stimulates collagen production by 24%, thus improving skin density  
(Evaluation model: Fibroblasts)

REDIVINE protects skin from cell intoxication and from premature aging

# REDIVINE

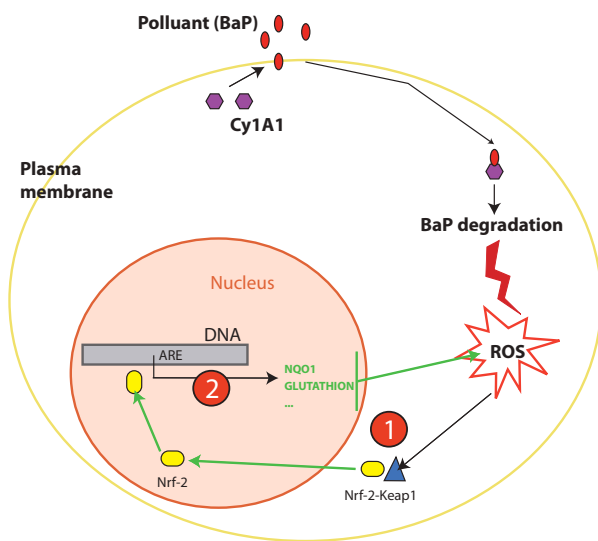
## Mechanism of action

The « xenobiotic response element » (XRE) is responsible for degrading pollutants. However, pollutants metabolism generates ROS (cf page 2).

The presence of ROS triggers the « anti oxidant response element » (ARE) which expresses detoxifying enzymes. This process is mediated by Nrf2.

REDIVINE stimulates this detox response in order to prevent the noxious effects of an evergrowing exposure to urban pollution.

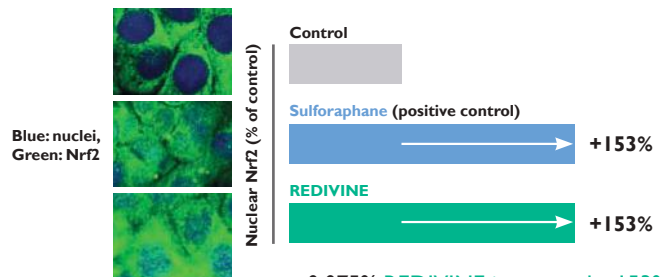
### 1 Activation of the skin natural defenses against urban pollution



#### ACTIVATION OF THE SENTINEL NRF2

Nrf2 is a « sentinel » that patrols the cell cytoplasm.

In the presence of toxins, Nrf2 relocates to the nucleus in order to trigger the « anti-oxidant response element » (ARE) and to stimulate the expression of cytoprotective enzymes.



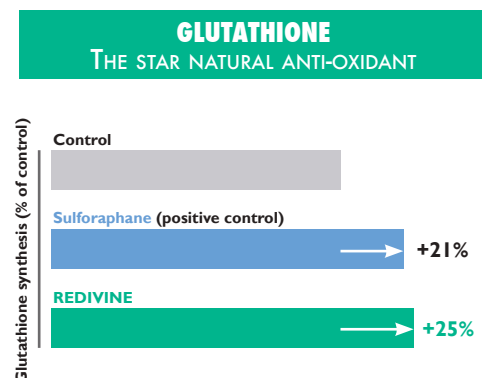
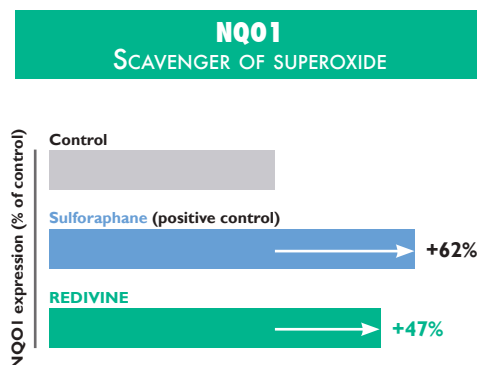
0.075% REDIVINE increases by 153% the translocation of Nrf2 into the nucleus, thus inducing the activation of ARE

(Evaluation model: Keratinocytes)

REDIVINE improves the activation of the transcription factor Nrf2 that will relocate into the nucleus for stimulating the ARE.

### 2 Anti-oxidant / cytoprotector synthesis

The expression of ARE induces the synthesis of detoxifying cytoprotective enzymes such as:



0.075% REDIVINE increases the expression of NOQ1 by 47% and the expression of glutathione by 25% thus optimizing cytoprotection

(Evaluation model: Keratinocytes)

REDIVINE stimulates the skin cytoprotection, and is better prepared to:

- Fight effectively against urban pollution-generated toxins
- Prevent their accumulation
- Prevent the resulting premature aging

# REDIVINE

## A technology born of red vine leaves



REDIVINE uses the benefits of red vine leaves such as:

- The toning and the protection of microcirculation
- Strong anti-oxidant because of a high content in polyphenols and tanins in order to protect and to detoxify the skin elastic fibres.
- Strong astringent activity in order to close skin pores

### Anti-fatigue



#### STIMULATION OF THE MICRO-CIRCULATION

Skin fatigue leads to a slow down of all skin metabolisms which eventually have visible repercussions. An impaired microcirculation was described as a directly involved metabolism. Skin is deprived of nutrients essential for an optimal rejuvenation. The ability of the red vine leaves to strengthen blood vessels provides a sustainable response to skin fatigue and prevent its visible effects.

### Protection and firmness



#### ANTI-OXIDANT ACTIVITY SIMILAR RESULTS TO VIT C

	DPPH	ABTS
REDIVINE	IC <sub>50</sub> = 0.071%	IC <sub>50</sub> = 0.052%
Vit. C (1%)	IC <sub>50</sub> = 0.42%	IC <sub>50</sub> = 0.43%

Red vine leaves are rich in polyphenols which provides REDIVINE with strong anti-oxidant properties for an optimal protection of the skin elastic structures, and for maintaining an optimal skin firmness.

#### ANTI-ELASTASE ACTIVITY ELASTIN PROTECTION



0.23% eq REDIVINE inhibits elastase activity by 88%, thus preventing elastase degradation.

### Skin tone



#### ASTRINGENT ACTIVITY

The astringent properties of the red vine leaves leads to tighten pores and tissues. Skin texture and tone will be smoother and more homogeneous. Combined with many other benefits, red vine leaves provides skin with a radiant tone. Furthermore, this astringent activity is also an asset for limiting the penetration of microparticles in the skin through pores.

Naturally suited for a global anti-aging activity, REDIVINE strongly enhances the anti-aging benefits of the red vine leaves in order to effectively fight urban pollution.

## INCI NAME

GRAPE (*VITIS VINIFERA*) LEAF EXTRACT

## ANALYTICAL COMPOSITION

Grape (*Vitis vinifera*) dry extract ..... 2%  
Propanediol ..... 49%  
Water (sq) ..... 100%

## PHYSICO-CHEMICAL CHARACTERISTICS

Limpid to slightly opalescent liquid, orange to burgundy red  
Density at 20°C ≈ 1.045  
pH: 5  
Miscible with water, alcohol and glycols.

## PRESERVATIVES

No preservative system.

## TOLERANCE AND TOXICITY STUDIES

REDIVINE does not show any toxicity, and tolerance studies show that it is perfectly tolerated.

## FORMULATION

Advised doses: 1% - 5%.  
No particular formulation restriction.

## AVAILABILITIES

REDIVINE is available in 5kg and 30kg drums.



COSMOS APPROVED

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