

# SOLEXYL®

## Skin protector against UV



SUN PROTECTION  
ANTI-PHOTOAGING  
ANTI-INFLAMMATION

ANTI-OXIDATION  
DNA PROTECTION  
ANTI-IMMUNOSUPPRESSION

**EXSYMOL**  
MONACO

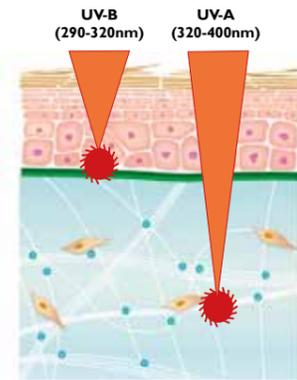
## UVs, skin's archenemies

UV are very noxious sunrays that can strongly affect skin and cause major damages and premature aging.

UV have a double impact on skin as they can cause direct and indirect damages:

- UV radiation can directly affect DNA and cause mutations. These mutations may lead to three different outcomes: repairation if the damage is low, cell death if the damage is beyond repair, or cell cancer if repairation genes were mutated.
- UV generate free radicals, especially ROS (reactive oxygen species) that will in turn affect DNA, skin proteins and all skin cells metabolisms.

It is therefore mandatory to improve skin defense against UV in order to reduce their impact and to prevent skin premature aging.



## Skin defenses against UV

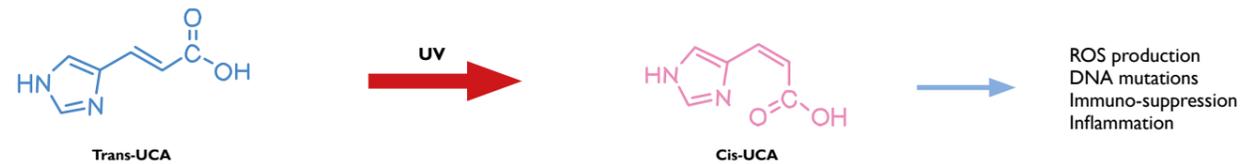
Skin developed several natural protections against UV among which melanin and urocanic acid. However, when exposed to UV, these natural defenses may cause further damages (generation of ROS...).

### Melanin

Located in the living part of the epidermis, melanin is the most common mechanism of defense against UV and they strongly absorb UV. However, because of UV exposure, it generates ROS that will be responsible for damaging skin.

### Urocanic acid

Located in the *stratum corneum*, urocanic acid (UCA) has two isoforms: Trans-UCA and Cis-UCA. In its Trans form, UCA is capable of absorbing UV and therefore to protect skin, but as it does, it will be isomerized into its Cis form that causes ROS generation, immuno-suppression, and inflammation.



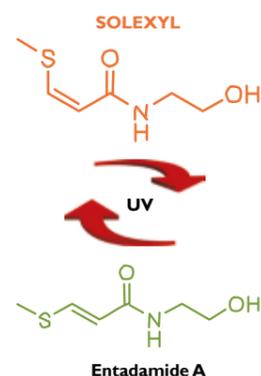
## SOLEXYL for UV protection

In order to fight UVs, Exsymol developed SOLEXYL.

This active molecule inspired by nature is capable of opposing the UV noxious effects in several complementary ways:

- It absorbs UV and therefore decreases the direct damages of these rays
- It negates the indirect noxious effects of UV by opposing free radicals
- It prevents the isomerization of Trans-UCA into Cis-UCA hence preventing the apparition of side effects caused by it.

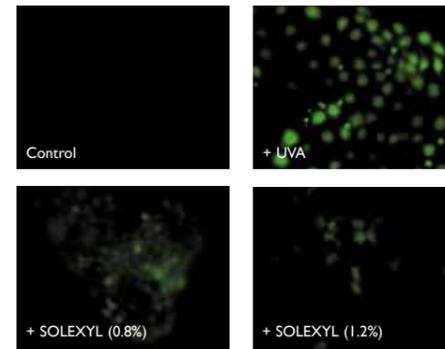
Furthermore SOLEXYL provides long lasting benefits as it is naturally recycled into and from Entadamide A, a completely safe natural UV absorber and anti-inflammatory compound found in tropical liana, for further sun protection.



## SOLEXYL negates UV-induced damages

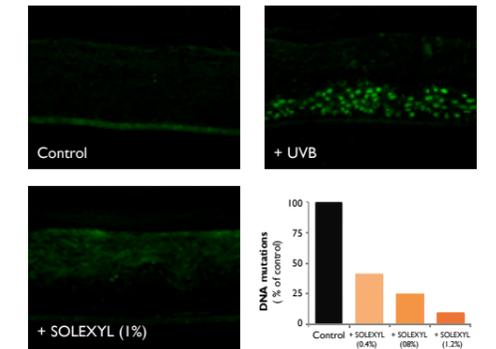
### ROS

SOLEXYL prevents the UV-induced ROS production in keratinocytes.



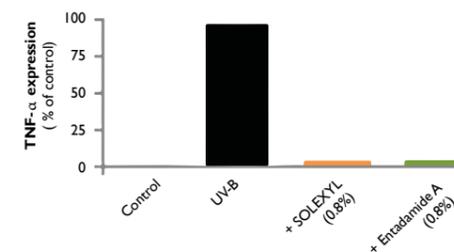
### DNA protection

SOLEXYL, when applied topically, protects DNA from UV-induced damages in exposed human reconstructed epidermis.



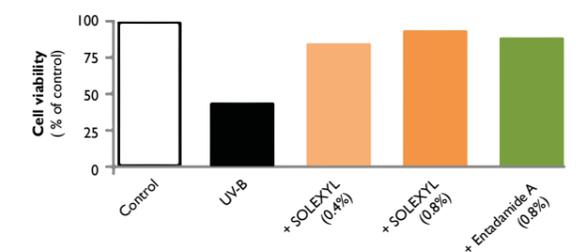
### INFLAMMATION

SOLEXYL prevents the UV-induced inflammation of a HRE for an extended period of time as its recycled form, Entadamide A is also capable of reducing inflammation.



### CELL DEATH

Because of the combined protective effects of SOLEXYL and its recycled form Entadamide A, keratinocytes will be protected and resist UV-induced cell death.

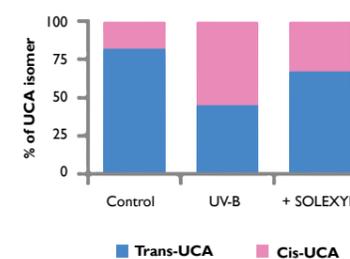


## SOLEXYL prevents the isomerisation of trans-UCA into cis-UCA

SOLEXYL is capable of preventing the formation of Cis-UCA and therefore of preventing immuno-suppression

### UCA ISOMER RATIO

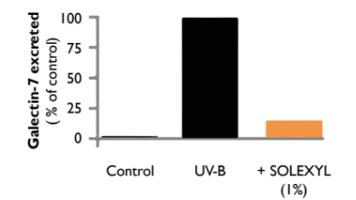
In HRE, SOLEXYL prevents UV-induced trans-UCA isomerization into noxious Cis-UCA.



### –IMMUNO-SUPPRESSION & HYDRATION–

Cis-UCA has been described to cause immuno-suppression via the overexpression of galectin-7. The upregulation of this protein was also shown to reduce skin barrier function.

By inhibiting galectin-7 expression in a HRE, SOLEXYL preserves an optimal immune system while also preserving an optimal barrier function for a good skin protection and hydration.



# SOLEXYL

INCI name: Hydroxyethyl-methylthiopropenamide

## COSMETIC APPLICATIONS

Sun protection  
Anti-photoaging  
Anti-inflammation

## SKIN BENEFITS

Anti-oxidation  
DNA protection  
Anti-immunosuppression

## TECHNICAL CHARACTERISTICS

### ANALYTICAL COMPOSITION

(Z)-N-(2-hydroxyethyl)-3-(methylthio)acrylamide ..... 1%  
Methylpropanediol (sq) ..... 100%

### PHYSICO-CHEMICAL CHARACTERISTICS

Limpid to slightly opalescent, colorless to slightly-yellow liquid  
Density at 20°C ≈ 1.02  
Miscible with water and glycols.

### PRESERVATIVES

No preservatives

### TOLERANCE AND TOXICITY STUDIES

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

### FORMULATION

Advised doses : 0.5% - 1.5%.  
No particular formulation restriction.

### AVAILABILITIES

SOLEXYL is available in 1kg, 5kg and 30kg drums



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