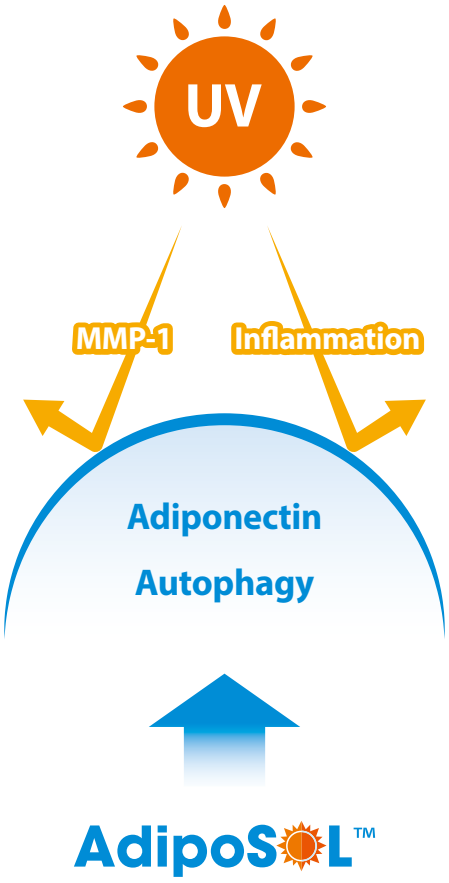
The First MED Shifting Ingredient

AdipoSol™

a Novel Solution for the Prevention of Skin Photoageing

AdipoSol™ is a novel anti-photoageing ingredient that protects the skin from UV stress through autophagy induction an adiponectin expression in skin cells. Shifting of MED proves its skin protection against UV.



UV exposure decreases the expression of adiponectin, a well-known adipokine, secreted by adipocytes, leading to the exacerbation of photoageing by stimulating MMP-1 expression and inhibiting procollagen synthesis. Thus the repeated skin damage and imperfect repair caused by UV exposure results in “photoageing” and “inflammageing”.

AdipoSol™ has multiple functions against UV damage such as the recovery of UV-induced adiponectin, collagen reduction and decrease of UV-induced MMP-1 and inflammatory cytokines.

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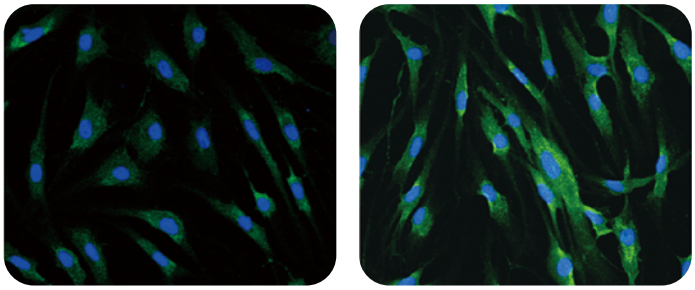
Efficacy

Activates Autophagy

- Autophagy reduces the inflammation and oxidative stress caused by various environmental stresses including UV.
- Enhancing of autophagy leads to anti-ageing effect.

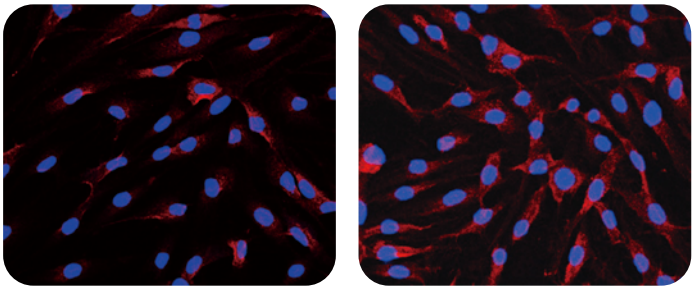


Untreated | Treated with 100 uM AdipoSol™

Increased production of autophagy marker LC3 by AdipoSol™ was observed by confocal microscopy (human dermal fibroblast, 24hr). LC3 puncta of autophagosome were labelled with green spots.

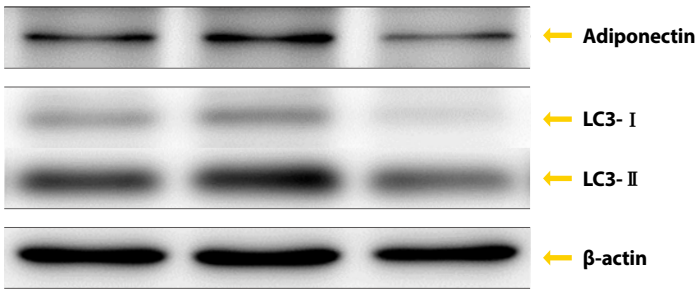
Increases Adiponectin expression through Autophagy activation

- Adiponectin is a typical adipokine secreted from adipocytes, of which expression is reduced in UV-exposed skin.
- Increment of Adiponectin expression in the effectiveness of Adiposol™ reduces by treatment of Autophagy inhibitor.



Untreated | Treated with 100 uM AdipoSol™

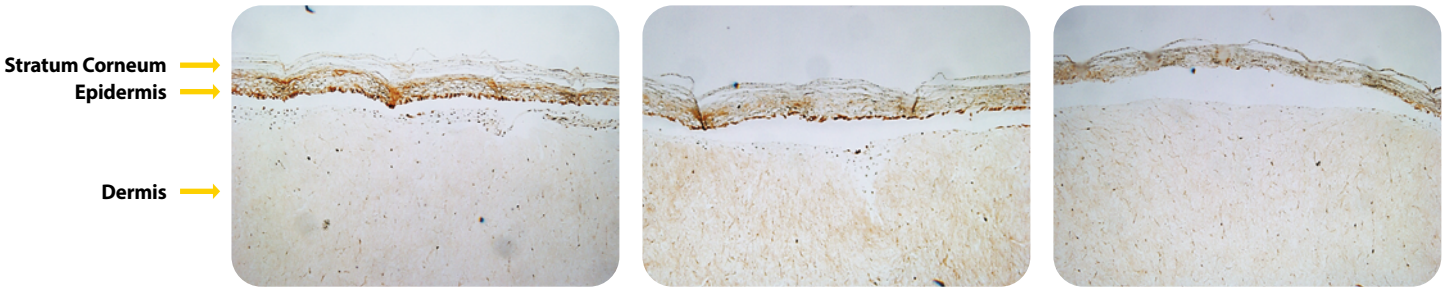
Increased Adiponectin expression (red color) by AdipoSol™ was observed by confocal microscopy.



Effect of autophagy inhibitor on Adiposol™-mediated Adiponectin expression was measured by western blot.

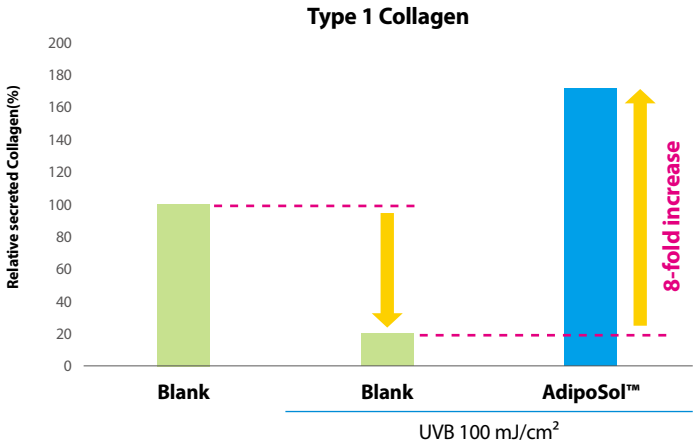
Decreases UV-induced MMP-1 Expression

- In 3D skin model (MatTek EpiDermFT™), immunohistochemical analysis detected reduced MMP-1 level in both keratinocytes and dermis after AdipoSol™ treatment for 24hr.



Blank (Non-UVB) | Blank (UVB 100 mJ/cm^2) | UVB + AdipoSol™

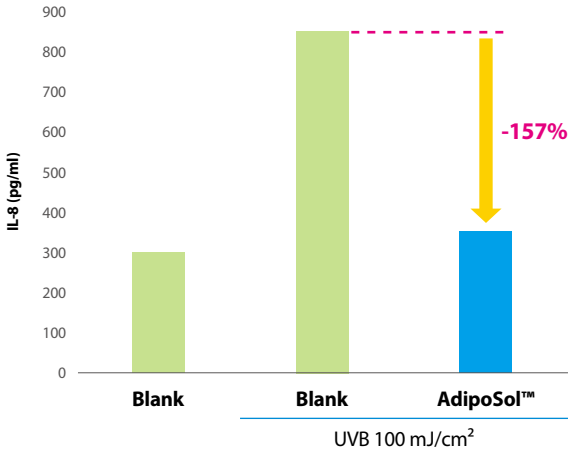
Recovers UV-induced Collagen Reduction

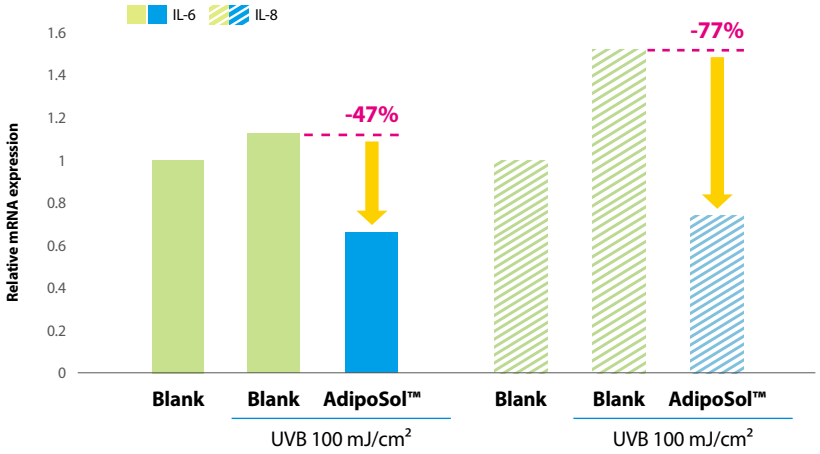


Increased collagen was measured by ELISA using culture supernatant in 3D skin model (MatTek EpiDermFT™). 3D skin was treated 100 uM AdipoSol™ for 24hr and then UVB 100 mJ/cm^2. After UVB exposure, 3D skin was incubated for 4 days.

Decreases UVB-induced Expression and Secretion of Inflammatory Factors

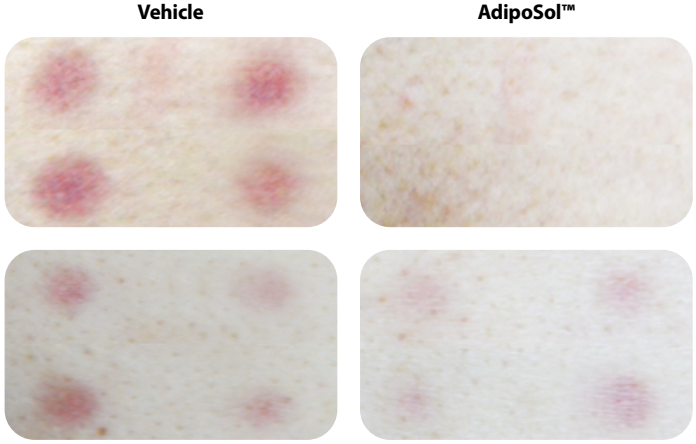
- Human epidermal keratinocytes and 3D skin model (MatTek EpiDermFT™) were incubated 100 uM AdipoSol™ for 24hr and then exposed to UVB 100 mJ/cm^2. Anti-inflammation effect was detected by ELISA (Left) and RT-PCR (Right).

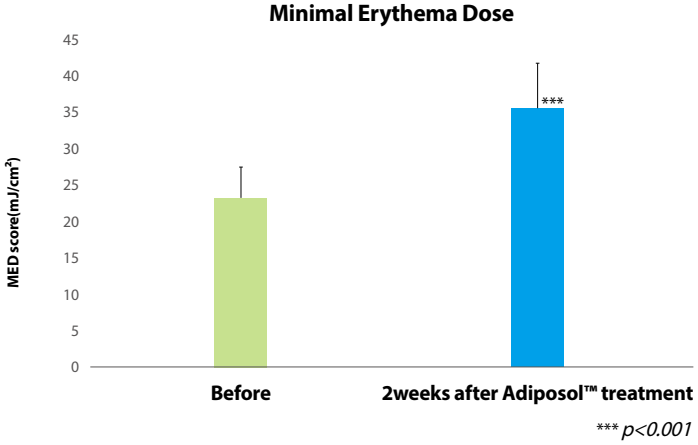




Reduces UV-induced Skin Redness and shows shift of MED

- Redness formation in topical skin application of Adiposol™ is less severe than vehicle.
- 2 weeks pre-treatment of Adiposol™ shows shifting of MED by 56.2%.





*** $p<0.001$

Basic Efficacy

- Activates autophagy
- Increases adiponectin expression

Composition

- 0.5% AdipoSol™ (Tetracarboxymethyl Hexanoyl Dipeptide-12)
- 2% 1,2-Hexanediol
- 97.5% Water

UV-Specific Activity

- Recovers UV-induced adiponectin reduction
- Decreases UV-induced MMP-1 expression
- Decreases UV-induced expression and secretion of inflammatory factors
- Reduces UV-induced oxidative stress protein

Application

- Suncare (Sun-Block creams and lotions)
- Skincare (After-Sun Products)
- Anti-Photoageing
- Anti-inflammation

Recommended Dosage

- 1~2% for UV cream and lotion formulation

Technical Data Sheet

Trade Name	AdipoSol™
Description	Liquid of 5,000 ppm Tetracarboxymethyl Hexanoyl Dipeptide-12
Catalogue No.	ICP2003
CAS No.	2097608-07-4 (AdipoSol™) 6920-22-5 (1,2-Hexanediol)
Appearance	Clear liquid
Shelf Life	12 months
Storage	Room temperature, tightly closed
Pack sizes	1 kg

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