



AC-HPR

INCI NAME: HYDROXPINACOLONE RETINOATE

**A new generation Anti-Ageing
and Direct Acting Retinoid**

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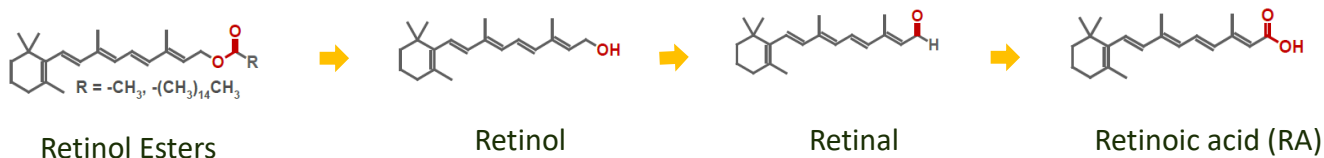
About Retinoids

As we all know, retinoids are well-recognized anti-ageing actives for cosmetics.

But, tretinoin, also known as all-trans retinoic acid (ATRA), has high-irritation, photochemical instability, as well as concerns about toxicity which have hindered the use of ATRA in cosmetic products.

Retinol is extremely unstable and has high-irritation.

Milder retinoid derivatives, retinol, retinal must be converted into tretinoin in several enzymatic steps in the skin to function, and some retinoid derivatives have relatively large molecules and low utilization rate.



Therefore, it is of interest to identify new compounds that offer the cosmetic benefits of Tretinoin.

HPR

An article from Estee Lauder

1310

Anti-aging effects of retinoid hydroxypinacolone retinoate on skin models

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Tretinoin, also known as all-*trans* retinoic acid (ATRA), is well-known for its anti-aging effects on skin. However, skin irritation, photochemical instability, and concerns about toxicity have hindered the use of ATRA in cosmetic products. Therefore, it is desirable to find new molecules that have increased retinoic acidlike activity without the negative side effects. Hydroxypinacolone retinoate (HPR) is a cosmetic grade ester of ATRA that has been shown to have innate retinoic acid activity without causing skin irritation. Here, we compared levels of gene transcription by HPR, ATRA, retinol (ROL), retinaldehyde (RAL), and retinyl palmitate (RP) in DNA using a retinoic acid response element (RARE) reporter assay. In addition, we compared the anti-aging properties of HPR to ATRA by testing the effects on collagen levels and skin irritation in organotypic skin models. Skin models were treated for 5 days with HPR and ATRA, basal media was collected for ELISA analysis, and skins were stained with Massons trichrome (for collagen). RARE assay results showed that HPR had greater levels of gene transcription than ROL, RAL, and RP at the same concentrations, and was less cytotoxic to cells at a 10 times higher concentration; however, HPR did not achieve gene transcription levels of ATRA. Skins treated with HPR significantly increased pro-collagen production as compared with untreated control skins, and was comparable to ATRA. Histological staining of skins for collagen corroborated these results, with the highest dose of HPR out-performing ATRA. IL-1 α ELISA analysis showed that HPR did not induce more (or less) inflammatory response than either ATRA or the vehicle control. Together these data suggest that HPR is an effective alternative to ATRA and other less potent retinoids in the treatment of aging skin without the detrimental side effects.

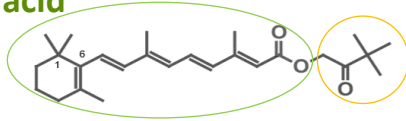
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About AC-HPR

ANECO developed HPR (Trade name: AC-HPR & AC-HPR-S10)



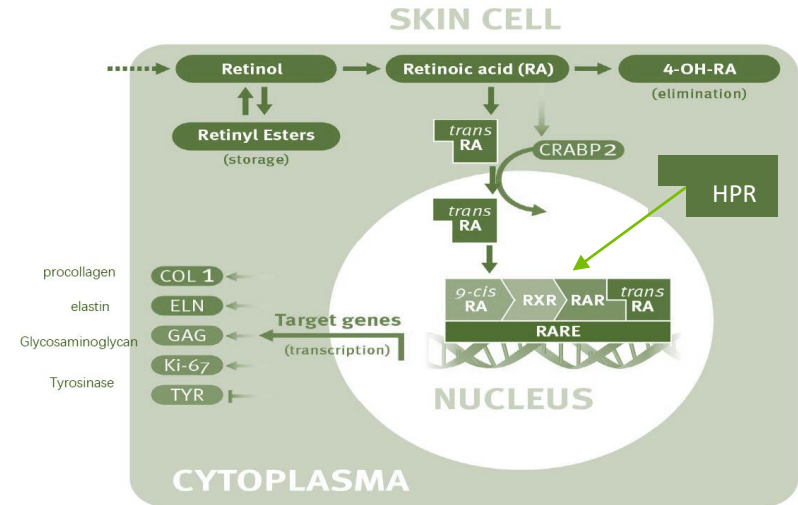
Retinoic acid



Small molecule of Pinacol



HPR, a cosmetic grade ester of Retinoic acid, does not need to convert to Retinoic acid and can bind directly to Retinol-like protein receptors (RAR) like Retinoic acid.



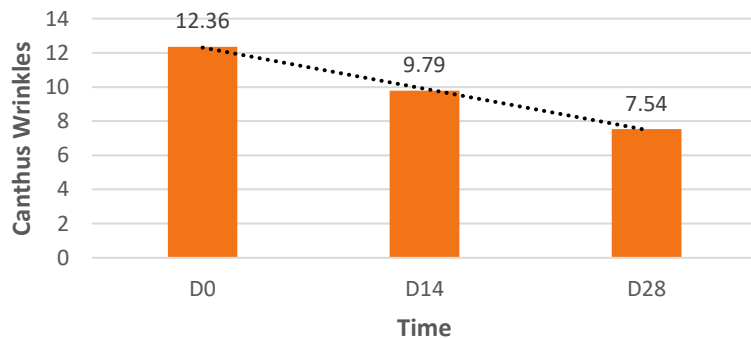
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AC-HPR advantages

No convert,
Enhanced activity



Clinical test - Anti-ageing emulsion (0.2%HPR), 28 days, applied twice daily

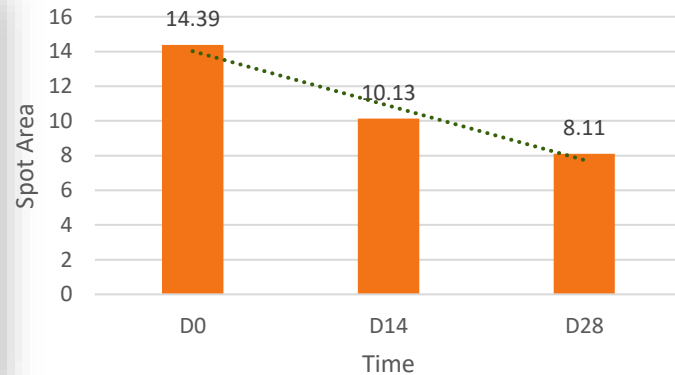


✓ As can be seen from the figure and data, HPR emulsion can reduce Canthus Wrinkles.

3

AC-HPR advantages

No convert, Enhanced activity

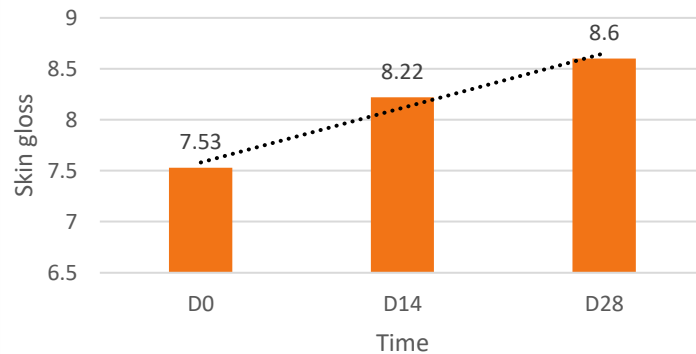


✓ As can be seen from the figure and data, HPR emulsion can reduce Spot Area.

3

AC-HPR advantages

No convert, Enhanced activity

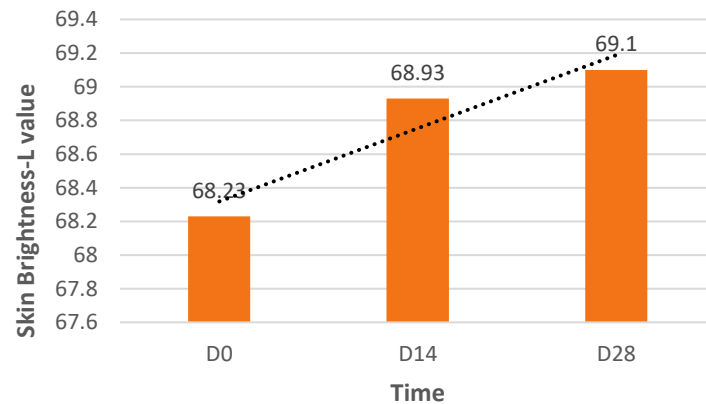
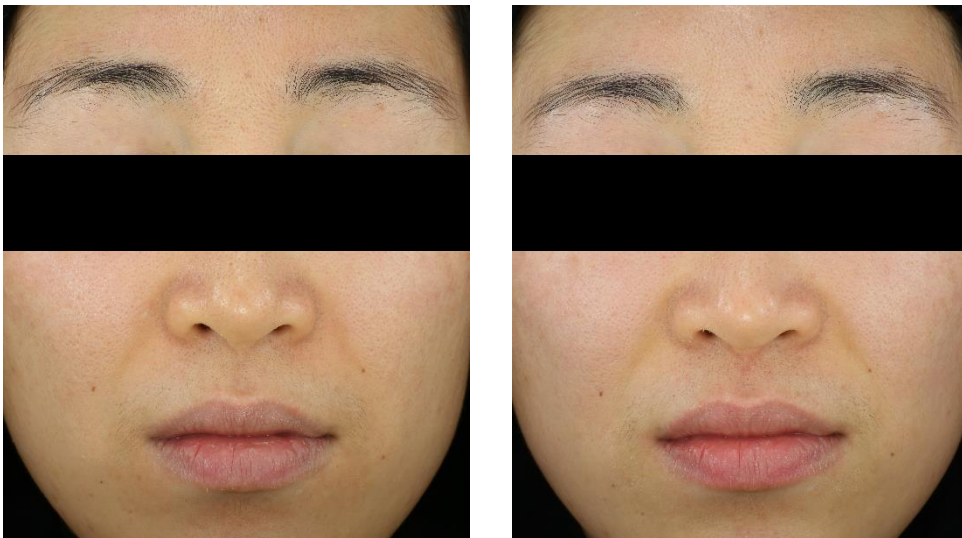


✓ As can be seen from the figure and data, HPR emulsion can improve skin gloss.

3

AC-HPR advantages

No convert, Enhanced activity



✓ As can be seen from the figure and data, HPR emulsion can brighten the skin.

3

AC-HPR advantages

No convert, Enhanced activity

- Summing up the above, HPR emulsion has these efficacy



Canthus Wrinkles

↓ 39.0%

Spot Area

↓ 43.6%

Skin Brightness

↑ 1.3%

Skin gloss

↑ 14.2%

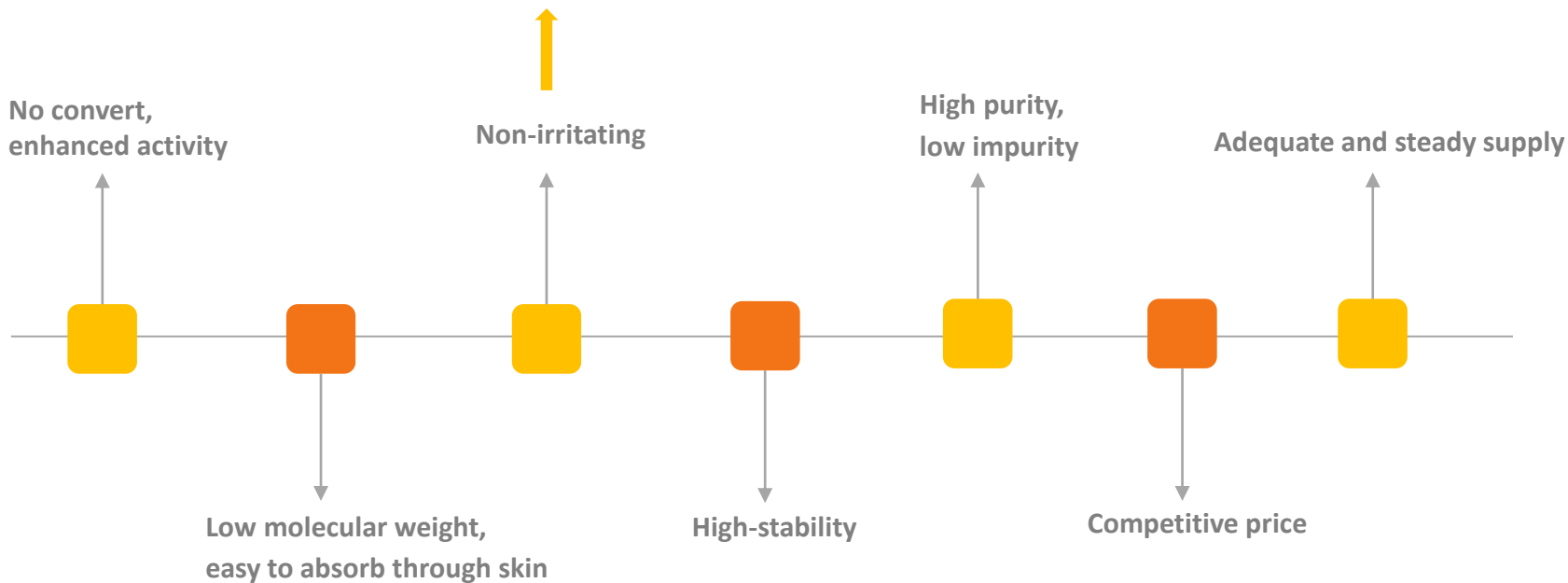


- After 28 days, 100% of subjects had no adverse reactions,
- 28 days questionnaire summary: 80% panelist agreed significantly with:
 - ✓ Improving skin moisture and elasticity
 - ✓ Improving skin color and gloss
 - ✓ Reducing roughness, wrinkles and fading spots
 - ✓ Improving skin's overall appearance

3

AC-HPR advantages

- ✓ Phototoxicity: 10% content, **no phototoxicity**, available during the day.
- ✓ Patch test: 30 subjects, 0.5% content - **zero irritation**.
- ✓ Sponsored clinical -28 days cumulative irritation test, 0.2% HPR test emulsion - **zero irritation**.



- Pure Powder

PRODUCT NAME: AC-HPR

INCI NAME: Hydroxypinacolone Retinoate

CAS No.: 893412-73-2

ITEMS	SPECIFICATIONS
Appearance	Yellow crystalline powder
Odor	Characteristic
Purity (HPLC)	≥98%

- 10% Solution

PRODUCT NAME: AC-HPR-S10

INCI NAME: Hydroxypinacolone Retinoate & Dimethyl Isosorbide

CAS No.: 893412-73-2 & 5306-85-4

ITEMS	SPECIFICATION
Appearance	Light yellow liquid
Refractive Index (25°C)	1.450-1.520
Specific Gravity (25°C)	1.10-1.20

- Quality Control Center



HPR application in High-end products





For further information and more products, please contact:

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