



# CELLUCAP™ R

Stabilized Pure Retinol



Leader in Microencapsulation Technology

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# CelluCap™ R

The Power of Encapsulated Retinol

Retinol is highly recognized as a very effective vitamin for anti-aging treatment due to its capacity to stimulate collagen production, accelerate cell reproduction and normalize skin keratinization. Its regular application significantly improves skin elasticity, smoothness, and softness, resulting in younger, clearer and healthier looking skin.

Nevertheless, Retinol is highly sensitive to oxidation, degradation in the presence of air, sunlight, acidic conditions and heavy metals which results in decreased efficacy and formula discoloration. Tagra Biotechnologies overcomes these challenges with CelluCap™ R. By delivering stabilized pure Retinol in a microencapsulation, Tagra helps to improve the performance and shelf life of the final formula.

CelluCap™ R's encapsulated Retinol is easily released upon mechanical pressure, such as a rubbing action. The single layer polymeric shell collapses and breaks down into invisible particles, but still retains the payload to continue and deliver over time. Until the moment of application, Retinol remains fresh and potent.

## Technical Data

INCI	Encapsulated Material	Loading Capacity	Recommended Usage Level	Appearance
Retinol, Cellulose Acetate Butyrate, Tricaprylin, Pentaerythrityl Tetra-di-t-butyl Hydroxyhydrocinnamate	Pure Retinol	9%	1-3%	Pale Yellow Powder, <70 micron

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## CelluCap™ R: Highly Significant Results

### Clinical Results

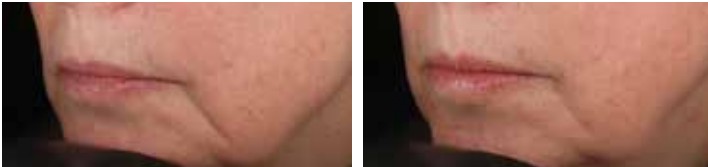
In a third-party clinical study, 20 female subjects applied a formula with 1% CelluCap™R (0.09% free Retinol), twice daily.

- After four weeks, subjects saw an average improvement of 11.2% in the appearance of facial lines and wrinkles.
- After four weeks, subjects saw an average 55.2% increase in skin firmness
- No participants experienced irritation.

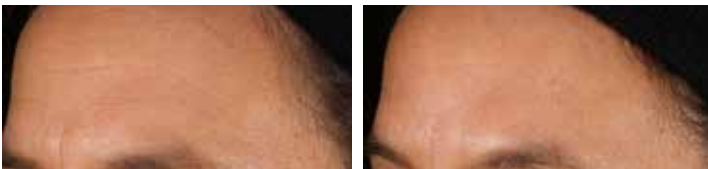
### In a consumer study, after four weeks of use:

- 100% of participants agree that skin feels significantly firmer
- 90% agreed that the appearance of fine lines and wrinkles are reduced
- 100% agreed skin is healthier and younger looking
- 100% agreed that skin appears more luminous, and skin clarity is improved, leaving a healthy and even tone
- 95% agreed that skin's brightness and overall health are improved
- 100% agreed that skin's radiance, softness, and smoothness is significantly improved
- 90% agreed that the product reduces the appearance of fine lines, and redness
- 100% of participants would recommend this product to a friend

Picture 1: Visible softening of marionette lines [L] Baseline [R] 28 Days



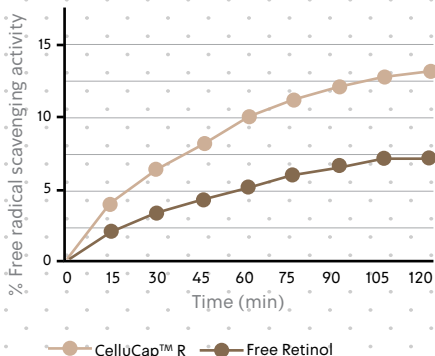
Picture 2: Reduction of the appearance of forehead wrinkles [L] Baseline [R] 28 Days



## Formulating with CelluCap™ R

- o CelluCap™ R is gradually added at the last stage of formulation preparation, using a simple paddle/anchor type mixer at 70–300rpm. Do not apply shear force.
- o Incorporation should be done at temperature up to 50°C.
- o No need for nitrogen environment while formulating with CelluCap™ R.
- o Compatible with all types\* of cosmetics formulations
- o CelluCap™ R is globally compliant including China, non-GMO, and is BSE, Halal, and vegan compliant.
- o CelluCap™ R is non-nano, preservative free, and free from BHT, BHA, and microplastics.

### CelluCap™ R: Improved Anti-Oxidant Activity



### Activity

Graph 1: CelluCap™ R shows improved anti-oxidant activity over unencapsulated (free) Retinol

\* Formulations should not contain more than 20% of Alcohols and/or Glycols in total.

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Tagra Biotechnologies is a leading manufacturer and supplier of microencapsulated ingredients for the cosmetic industry for more than 20 years. Tagra provides a wide range of innovative highly functional active microencapsulated ingredients for improved stability efficacy while overcoming incompatibilities.

For more information and samples please contact: [info@tagra.com](mailto:info@tagra.com)

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