BRUKEM LIFE CARE PVT. LTD.

We Make Products and Possibilities

FINISH PRODUCT CERTIFICATE OF ANALYSIS			
Name of Product	**B-SPOKE ANTI-AGING VEGGIE CAPS**		
Batch Number	**BLH-25004**	**AR No**	**BLHAR25004**
Date of Manufacturing	**Feb-2025**	**Batch Size**	**60000 Caps.**
Date of Expiry	**Jul-2026**	**Qty Sampled**	**60 Capsule**
Date of Receipt	**21-02-2025**	**Date of Release**	**27-02-2025**
Date of Analysis	**21-02-2025**		

Sr. No	Test Name		Observation	Specifications
1.	Description		Complies	A white coloured body-cap, cylindrical shaped cellulose capsule shell having white colour powder
2.	Average Weight of Filled Capsule		694 mg	723 mg ± 7.5%
3.	Average Net Content		594 mg	625 mg ± 7.5%
4.	**Each Hard Gelatine Capsule Contains:**			
	Resveratrol	500 mg	503.60000 mg (100.72%)	90% to 110%
	Coenzyme Q10 (Kaneka Ubiquinol)	100 mg	100.03000 mg (100.03%)	90% to 110%
	Vitamin A (Retinol palmitate)	1 mg	1.08090 mg (108.09%)	NLT 90%
5.	**Heavy Metals:**			
	Lead		0.287 ppm	NMT 10 ppm
	Arsenic		0.182 ppm	NMT 3 ppm
	Mercury		Absent	NMT 1 ppm
	Cadmium		Absent	NMT 0.3 ppm
6.	**Microbial Test Limits:**			
	Total Aerobic Microbial Count		20 CFU/ml	Max 100000 CFU/ml
	Total Fungal, Yeast & Mould		10 CFU/ml	Max 5000 CFU/ml
	E. coli		Absent	To be absent
	Salmonella		Absent	To be absent
	P. Aeruginosa		Absent	To be absent
	S. Aureus		Absent	To be absent

Note: In the Opinion of the Undersigned the sample referred to above is off standard quality as defined by the acts and rules made there under for the reason given above.

BRUKEM LIFE CARE PVT. LTD. AHMEDABAD

27-02-2025

ANALYST

DATE

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Aum Research Labs

FAST • RELIABLE • ACCURATE

FDCA Licence NO. : GTL/37/57

Certificate of Analysis

Form -39

(150 - E(f) Report of test or Analysis by Approved Institution)

[redacted]

Certificate NO.	**ARL/COA/RM/250212/016**
COA Release Date.	**14/02/2025**
Sample Received Date.	12/02/2025

Name of Sample	**Coenzyme Q10**	**Generic Name**	**Coenzyme Q10**
Details of Product	Raw Material	Party Mfg. Licence No	Not Specified
Lot/Batch No	VBPLFERSYNCOQ0241263	Client Ref No	RMN23240416
Batch Size/ Qty Received	15 Kg	Sample Qty Received	10 gm
Original Manufacturer	[redacted]	Date of Manufacturing	December-2024
Supplier	[redacted]	Date of Expiry	November-2027

Analysis Result

NO	Test Parameter	Result	Specification IHS
1	Description	Yellolw colour powder	Yellow colour powder
2	Assay	99.54 %	As per IHS

Party Asked For above test Only

In the opinion of the undersigned the sample referred to above is of standard Quality as defined in IHS & Act or the rules made there under.

AUM RESEARCH LABS PVT. LTD. RAKANPUR

Authorized Sign :

Disclaimer

(a) The Sample(s) to which the findings recorded herein (the finding) relate to information and sample provided by the client or by a third party acting at the client's direction and that time environment. The finding constitute no warranty of the sample's representativeness of any goods and strictly relate to the sample(s). The company accepts no liability with regard to the origin or source from which the sample(s) is/are extracted.

(b) Unless otherwise stated the result shown in this test report refer only to the sample(s) tested and such sample(s) are remained for 7 days in case of perishable and 15 days for all other samples. The samples from regulatory bodies are to be retained as specified.

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[redacted]	**Certificate NO.**	**ARL/COA/RM/250222/030**
	COA Release Date.	**27/02/2025**
	Sample Received Date.	22/02/2025

Name of Sample	**Vitamin A Acetate Dried IP**	**Generic Name**	**Vitamin A Acetate Dried**
Details of Product	Raw Material	Party Mfg. Licence No	10717001000107
Lot/Batch No	WA-270	Client Ref No	RMN23240433
Batch Size/ Qty Received	5 x 1000 gm	Sample Qty Received	3 gm
Original Manufacturer	[redacted]	Date of Manufacturing	December-2024
Supplier	[redacted]	Date of Expiry	May-2027

Analysis Result

NO	Test Parameter	Result	Specification IP
1	Description	Yellow Colour Powder	Yellow Colour Powder
2	Assay	98.63%	NLT 98.0 %

Party Asked For above test Only

In the opinion of the undersigned the sample referred to above is of standard Quality as defined in IP & Act or the rules made there under.

ARL RESEARCH LABS PVT. LTD. RAKANPUR

Authorized Signatory

Disclaimer

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B'spoke

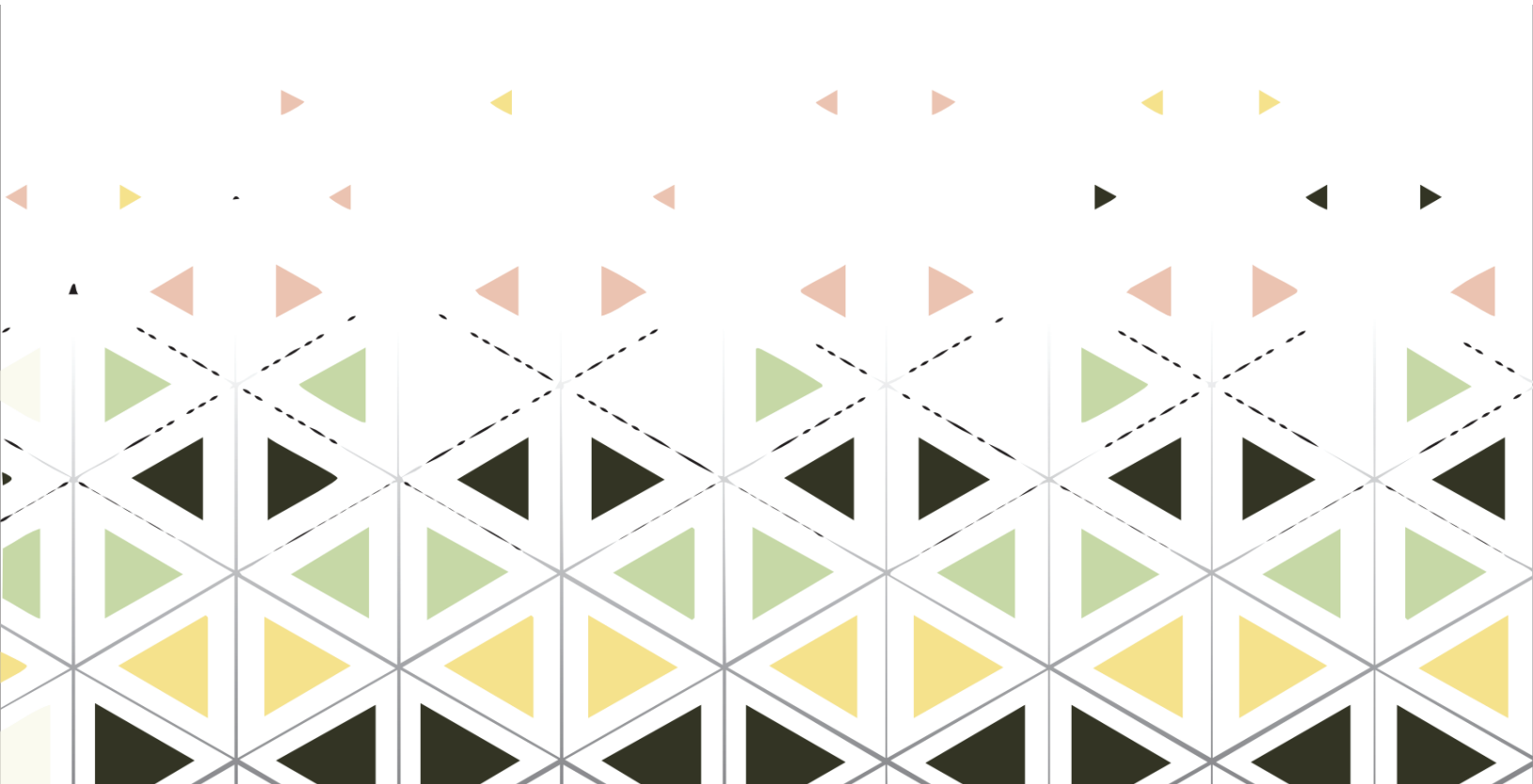
ANTI-AGING with CoQ10

Science behind ingredients

Trans Resveratrol

CoEnzyme Q10 (Kaneka Ubiqunol)

Vitamin A (Retinol palmitate)



Trans Resveratrol

Resveratrol, a polyphenolic compound found in grapes, peanuts, and berries, has garnered significant attention for its diverse health benefits. This natural compound has demonstrated potential in combating various chronic diseases, including cancer, neurodegenerative disorders, and cardiovascular disease. Resveratrol exerts its effects through multiple mechanisms, including neutralizing harmful free radicals, protecting cells from oxidative damage, it modulates inflammatory pathways, contributing to reduced inflammation, it inhibits cell proliferation, induces apoptosis, and prevents angiogenesis in cancer cells. It lowers blood pressure, improves cholesterol levels, and inhibits platelet aggregation. It protects neurons from oxidative stress and inflammation, potentially delaying neurodegenerative diseases. It improves insulin sensitivity and glucose metabolism. The promising therapeutic properties of resveratrol have positioned it as a potential candidate for drug development. Its ability to target multiple disease pathways and its generally safe profile make it an attractive option for complementary and alternative medicine.

Mechanisms of Action

Resveratrol, a polyphenolic compound, exhibits a wide range of biological activities attributed to its ability to modulate various cellular signaling pathways. Antioxidant and Anti-inflammatory Effects: Resveratrol scavenges free radicals, reduces oxidative stress, and inhibits the production of inflammatory cytokines such as TNF-α, IL-6, and MCP-1. Neuroprotective Effects: It protects neurons from oxidative damage, reduces amyloid-beta production, and modulates neuroinflammation. Additionally, resveratrol activates SIRT1, a longevity-associated protein, and promotes neurogenesis. It improves endothelial function, reduces platelet aggregation, and lowers blood pressure. Resveratrol enhances insulin sensitivity and glucose uptake. It exerts its effects through multiple cellular targets, including modulation of NF-κB and FOXO signaling pathways, inhibition of NOX4 and activation of SIRT1 and regulation of MAPK and AMPK pathways. The diverse biological activities of resveratrol position it as a promising therapeutic agent for various diseases, including neurodegenerative disorders, cardiovascular diseases, diabetes, and inflammatory conditions.[1]

Randomized Control Trials

A clinical study evaluated the efficacy of a 2% resveratrol emulsion on skin aging in 20 women aged 35-60 years. Participants applied the emulsion once daily for eight weeks, and skin parameters were assessed at baseline, one, four, and eight weeks. Transepidermal water loss (TEWL) decreased by 8.3% following eight weeks of treatment, indicating improved skin barrier function. Additionally, skin pH significantly decreased from 5.60 to 5.13 ($p=0.001$), suggesting enhanced skin hydration. Skin roughness, as measured by PRIMOS, decreased by 6.4% after eight weeks ($p=0.048$). Skin dispensability (elasticity) improved by 5.3% ($p=0.001$), suggesting increased skin firmness. Expert evaluation demonstrated significant improvements in skin glow, hydration, and smoothness. Participants also reported increased skin satisfaction. The study findings indicate that topical application of a 2% resveratrol emulsion effectively improves skin hydration, reduces skin roughness, enhances skin elasticity, and

[1] Li-Xue Zhang, Chang-Xing Li, Mohib Ullah Kakar, Muhammad Sajjad Khan, Pei-Feng Wu, Rai Muhammad Amir, Dong-Fang Dai, Muhammad Naveed, Qin-Yuan Li, Muhammad Saeed, Ji-Qiang Shen, Shahid Ali Rajput, Jian-Hua Li, Resveratrol (RV): A pharmacological review and call for further research, Biomedicine & Pharmacotherapy, Volume 143, 2021, 112164, ISSN 0753-3322, (https://doi.org/10.1016/j.biopha.2021.112164.)

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promotes an overall improvement in skin appearance. These results suggest that resveratrol-based formulations may be beneficial in addressing signs of skin aging.[2]

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[2] Brinke, A. , Janssens-Böcker, C. and Kerscher, M. (2021) Skin Anti-Aging Benefits of a 2% Resveratrol Emulsion. Journal of Cosmetics, Dermatological Sciences and Applications, 11, 155-168. doi: 10.4236/jcdsa.2021.112015. (https://www.scirp.org/journal/paperinformation?paperid=109968)

CoEnzyme Q10 (Kaneka Ubiqunol)

CoEnzyme Q10 (CoQ10) is a naturally occurring antioxidant found in every cell of the human body, particularly concentrated in the mitochondria, where it plays a key role in energy production. CoQ10 comes in two forms: ubiquinone, the oxidized version, and ubiquinol, its reduced and active form. Kaneka Ubiquinol is a highly bioavailable form of CoQ10, meaning it is easily absorbed by the body without the need for conversion. This makes it especially effective for individuals whose ability to convert CoQ10 decreases with age. CoQ10 levels naturally decline over time, which can lead to reduced energy production and increased oxidative stress, both contributors to the aging process.

CoQ10's primary function in anti-aging therapies lies in its ability to support cellular energy production and act as a powerful antioxidant. Within the mitochondria, CoQ10 facilitates the production of adenosine triphosphate (ATP), the energy currency that powers cellular processes. As we age, the reduced efficiency of mitochondrial energy production is a key factor in the visible and functional signs of aging. By supplementing with CoQ10, especially in its ubiquinol form, cellular energy production can be enhanced, leading to improved cell repair, maintenance, and overall vitality.

How does CoQ10 work in anti-aging?

CoQ10's anti-aging properties stem from its role in energy production, antioxidant protection, and cellular rejuvenation. By boosting mitochondrial function and aiding in ATP synthesis, CoQ10 ensures that cells have the necessary energy for vital functions like repair and regeneration. This is particularly crucial for skin cells, which need high energy levels to maintain elasticity, combat wrinkles, and promote overall skin health. As a potent antioxidant, CoQ10 neutralizes free radicals, which accumulate due to environmental exposure, stress, and aging. Free radicals accelerate aging by damaging collagen and elastin, the proteins responsible for firm and youthful skin. CoQ10 helps prevent this by protecting cell membranes and enhancing skin resilience to oxidative stress. CoQ10 supports the regeneration of damaged cells, especially within the skin. It promotes the repair of skin cells and encourages the production of new, healthy cells, reducing the appearance of fine lines and wrinkles. CoQ10's ability to stabilize cell membranes and promote mitochondrial health also prolongs cell function, further delaying visible signs of aging. Through these mechanisms—enhancing energy production, acting as an antioxidant, and promoting cellular renewal—CoQ10 is a valuable component in anti-aging treatments.[3]

Randomized Control Trials

A randomized, double-blind, placebo-controlled clinical trial investigated the anti-aging effects of oral Coenzyme Q10 (CoQ10), which functions by transferring electrons between mitochondrial complexes I, II, and III. Due to declining CoQ10 serum levels with age, supplementation has gained popularity, often without thorough drug safety assessments. The study involved 41 women aged 60 to 76, randomly assigned to receive either 100 mg, 200 mg of CoQ10, or a placebo daily for 12 weeks. Clinical, histological, molecular, and safety parameters were examined.

The results showed that CoQ10 supplementation, especially at 200 mg daily, led to improvements in skin health, including reductions in facial redness (erythema), hyperpigmentation, enhanced viscoelasticity, and collagen synthesis. It also preserved elastic fibers and maintained the antioxidant factor Nrf2 while reducing the stress-related protein p53. There were no significant side effects or toxicity noted during the 12-week study. However, no notable changes were observed in subjective global aesthetic improvement, dermal thickness, or serum cytokine levels, indicating CoQ10's effects were largely skin-specific. Renal, hepatic, and hematological

[3] Daniela Casagrande, Paulo H. Waib, Alceu Afonso Jordão Júnior,
Mechanisms of action and effects of the administration of Coenzyme Q10 on metabolic syndrome, Journal of Nutrition & Intermediary Metabolism, Volume 13, 2018, Pages 26-32, ISSN 2352-3859, https://doi.org/10.1016/j.jnim.2018.08.002. (https://www.sciencedirect.com/science/article/pii/S2352385918300032X)

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functions also remained unaffected. The study concludes that oral CoQ10 supplementation offers benefits for skin health in the elderly and could be considered as part of an anti-aging regimen.[4]

A sub-study of a previous double-blind, placebo-controlled, randomized clinical trial investigated the effects of selenium and Coenzyme Q10 supplementation on cardiovascular and age-related biomarkers. The study included 441 elderly participants (mean age 77), all with low selenium levels. The active group (n = 220) received 200 µg/day of selenium and 200 mg/day of CoQ10 for 48 months, while the placebo group received no supplementation. Five key biomarkers—intercellular adhesion molecule (ICAM-1), adiponectin, leptin, stem cell factor (SCF), and osteoprotegerin (OPG)—were measured through blood samples at the start and end of the trial.

The results showed that ICAM-1 and adiponectin were directly correlated with age and with pathological processes related to inflammation, endothelial dysfunction, and fibrosis. Structural equation modeling (SEM) demonstrated that ICAM-1, adiponectin, SCF, and OPG (but not leptin) were significantly associated with aging, forming two structural factors. Over 48 months, the active group saw a decrease in these biomarkers, indicating a potential anti-aging effect, while the placebo group experienced an increase. The SEM model validated the anti-aging impact of selenium and CoQ10 supplementation on these biomarkers.

The study concluded that selenium and CoQ10 supplementation may positively influence key age-related biomarkers, suggesting an anti-aging effect, particularly in reducing inflammation and promoting endothelial health.[5]

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[4] 44265 Oral coenzyme Q10: the new authority in skin aging. Results of a randomized, double-blind, placebo-controlled trial in elderly women
Nogueira, MarcelleSotto, MirianSanches, José AntonioValente, NeusaOliveira, LuandaSilva, Luiz FernadoSato, MariaBagatin, Edileia et al.
Journal of the American Academy of Dermatology, Volume 89, Issue 3, AB202 (https://www.jaad.org/article/S0190-9622(23)02166-7/fulltext)

[5] Alehagen U, Alexander J, Aaseth JO, Larsson A, Svensson E, Opstad TB. Effects of an Intervention with Selenium and Coenzyme Q10 on Five Selected Age-Related Biomarkers in Elderly Swedes Low in Selenium: Results That Point to an Anti-Ageing Effect-A Sub-Analysis of a Previous Prospective Double-Blind Placebo-Controlled Randomised Clinical Trial. Cells. 2023 Jul 4;12(13):1773. doi: 10.3390/cells12131773. PMID: 37443807; PMCID: PMC10340529. (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10340529/)

Vitamin A (Retinol palmitate)

Vitamin A, also known as retinol palmitate, is a vital fat-soluble vitamin essential for various physiological functions, including vision, immune response, and skin health. It exists in several forms, including retinol, retinal, and retinoic acid, with retinol palmitate being a storage form commonly found in animal-derived foods. This vitamin is known for its ability to promote skin cell turnover and enhance collagen production, making it a popular ingredient in anti-aging skincare products.
Retinol palmitate can be sourced from dietary sources such as liver, fish, dairy products, and egg yolks, and can also be synthesized from beta-carotene, which is abundant in colorful fruits and vegetables like carrots and spinach.

How it works?

Vitamin A's anti-aging effects are primarily attributed to its role in skin health through several key mechanisms. It promotes cellular turnover by accelerating the shedding of old skin cells and encouraging the production of new ones. This process improves skin texture, reduces the appearance of fine lines and wrinkles, and promotes a more youthful complexion. Studies have demonstrated that topical retinoids increase epidermal thickness and enhance the overall appearance of aging skin. It enhances collagen production, a crucial protein for maintaining skin structure and elasticity. By stimulating fibroblasts in the dermis to produce more collagen, retinol palmitate helps combat the loss of skin firmness associated with aging, effectively reducing sagging skin and wrinkles over time.

Additionally, as a powerful antioxidant, vitamin A plays a significant role in neutralizing free radicals that contribute to oxidative stress and skin aging. By protecting skin cells from environmental aggressors such as UV radiation and pollution, retinol palmitate mitigates oxidative damage, which is crucial for maintaining youthful skin. Retinol palmitate helps fade hyperpigmentation and dark spots by inhibiting melanin production, promoting a more even skin tone and reducing signs of photoaging caused by sun exposure.[6]

Randomised Control Trials

Topical retinoids are established treatments for both chrono and photo aging of the skin. A recent study conducted a prospective, 12-week, randomized, parallel-group trial involving 60 participants (56 women and 4 men) aged over 50 years (mean age 60 ± 8 years) with moderate to severe facial skin aging (Glogau score > 2). Participants were divided into two groups: Group A received a 0.02% retinoic acid gel, while Group B received the same gel plus oral supplementation of 50,000 IU of vitamin A and 50 mg of vitamin E daily.

The primary endpoint was the change in the Skin Aging Global Score (SAGS), measured at baseline, 6 weeks, and 12 weeks. Results showed a 13% reduction in SAGS for Group A and 14% for Group B after 6 weeks, with reductions of 22% and 27%, respectively, at 12 weeks. The absolute reduction in SAGS was significantly greater in Group B compared to Group A ($p < 0.01$). Both treatment regimens were well tolerated, supporting the efficacy of combined oral and topical treatments. This study suggests that a strategy combining oral retinol supplementation with topical retinoic acid is more effective than topical treatment alone in improving skin appearance in subjects with moderate to severe aging.[7]

Another recent study evaluated the effectiveness of topical retinol (0.4% lotion) in improving signs of naturally aged skin among 36 elderly participants (mean age 87 years) in a randomized, double-blind, vehicle-controlled trial. The intervention involved applying the retinol lotion or a vehicle control to one arm three times a week for 24 weeks, with

[6] https://www.sciencedirect.com/topics/medicine-and-dentistry/retinol-palmitate#:~:text=Retinol%20acts%20to%20increase%20the,cellular%20retinoic%20acid%20binding%20proteins.&text=One%20biochemical%20mode%20of%20action,skin%20and%20increase%20epidermal%20thickness.

[7] Milani M, Colombo F on behalf of the To-Re Trial Study Group. Skin Anti-Aging Effect of Oral Vitamin A Supplementation in Combination with Topical Retinoic Acid Treatment in Comparison with Topical Treatment Alone: A Randomized, Prospective, Assessor-Blinded, Parallel Trial. Cosmetics. 2023; 10(5):144. (https://doi.org/10.3390/cosmetics10050144)

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assessments of clinical signs and biochemical measurements conducted.

Results demonstrated that retinol significantly reduced fine wrinkling scores compared to the vehicle (−1.64 vs. −0.08; P < .001). Additionally, retinol treatment increased glycosaminoglycan (GAG) expression and procollagen I immunostaining, suggesting enhanced skin hydration and collagen production, which likely contributed to the observed wrinkle reduction.

The study concluded that topical retinol effectively improves the clinical appearance of aged skin by promoting skin matrix synthesis, thus potentially reducing issues related to skin fragility and healing in older adults. This research highlights the importance of retinol as a safe and beneficial treatment for intrinsic skin aging.[8]

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[8] Kafi R, Kwak HSR, Schumacher WE, et al. Improvement of Naturally Aged Skin With Vitamin A (Retinol). Arch Dermatol. 2007;143(5):606–612. doi:10.1001/archderm.143.5.606 (https://jamanetwork.com/journals/jamadermatology/fullarticle/412795#:~:text=We%20have%20demonstrated%20through%20this,%2C%20procollagen%20I%2C%20and%20GAG.)