

NaturePep® Sacha Inchi

UNLOCK THE ANCIENT SECRET OF SCULPTED SKIN



A MEMBER OF THE  *Galaxy* GROUP

TRI-K Industries, Inc.

2 Stewart Court

Denville, NJ 07834 USA

www.tri-k.com

p: +1 (973) 298-8850

e: info@tri-k.com

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WHAT IS SACHA INCHI?

Plukenetia volubilis, commonly known as sacha inchi, sacha peanut, mountain peanut or Inca-peanut, it is a perennial plant native to much of tropical South America and Southeast Asia¹. It has been cultivated for centuries by ancient civilizations in the Amazon Rainforest region as a food source renowned for total body health and increased endurance². Ancient Incas lived to be an average of 100 years old, without any knowledge of modern medicine and to this day, even their descendants regularly grow to extremely old ages. This is attributed to their diets, where they regularly consume 6 Incan foods that have all been linked to remarkable health and life extending properties, including sacha inchi³. Something which the rest of the world is quickly catching on to.



Both the Huffington Post and Underground Health Reporter have deemed sacha inchi as the next “superfood” because it is rich in proteins, Omega-3, Vitamin E, Vitamin A and fiber⁴. Sacha inchi is one of the best sources of essential fatty acids in the world. Omega-3 is vital for healthy hair and skin; it keeps skin elastic, helps lock in hydration, protects against sun damage, and helps repair damage.

MARKET TRENDS

Superfoods in skin care are not a novel concept, however people are consistently looking for the next best thing and their use in beauty and personal care has surged in recent years. With consumers’ shifting to healthier, wellness oriented lifestyles, superfoods are more popular than ever. Since 2010, there has been a 368% increase in beauty and personal care products launched with a superfood word variant claim, with 37% growth in 2017 alone⁵. They are viewed as healthy and nutrient dense which taps into people’s desires to be healthy and eco-friendly.

With these new natural lifestyle goals come an increased demand for natural alternatives to synthetic ingredients that do not compromise on performance. Most peptides used in skin care are synthetically derived but popularity is slowing. All natural product launches in face/neck care grew 9.7% in 2017 while products launched with synthetic peptides fell 20.2% in the same category⁵.

Natural options for commonplace claims like moisturization are a plenty, but what about the harder to achieve benefits such as sculpting, firming, wrinkle reduction and smoothing? These difficult to achieve benefits are normally addressed with synthetic actives, however with TRI-K’s new natural peptide technology there is an effective, and green, solution.

Anti-aging is still the leading skin care need, yet consumer focus is less on traditional anti-wrinkle benefits and more on all encompassing beauty claims that spans multiple age groups. All generations are looking for multi-functional products to help preserve their youth and minimize the signs of aging in order to age gracefully, while more mature consumers are looking for high quality products that help chisel the jawline and contour the face by firming the skin.

NATUREPEP® SACHA INCHI *IN VITRO* TESTING

GENE EXPRESSION ASSAY

The effect of NaturePep® Sacha Inchi on the gene expression that involve skin aging has been evaluated on full thickness EpiDermFT™3D skin equivalent model (EFT-400 MatTek). Gene expression was assessed following 24 hour exposure to the cultured media treated with 4% NaturePep® Sacha Inchi compared to control. Gene expression assay has been performed using a qPCR array.

NaturePep® Sacha Inchi upregulates genes responsible for the Extracellular Matrix (ECM) organization and repair. NaturePep® Sacha Inchi upregulates Connective Tissue Growth Factor (CTGF) critical for cell adhesion, migration and proliferation of the ECM organization, synthesis and proper alignment of collagen and elastin fibers in the dermal matrix, repair and prevention of dermal elastosis.

Upregulation of Conective Tissue Growth Factor (CTGF)

+ 133% of CTGF (Connective Tissue Growth Factor) (statistical significant gene with fold change value >2.00 fold)

NaturePep® Sacha Inchi upregulates Human Longevity Master Switch Gene (FOXO3) which protects against extrinsic aging by regulating damaging reactive oxidative species and limiting free radicals accumulation and regulates protein homeostatis.

Upregulation of Human Longevity Master Switch Gene (FOXO3)

+ 60% of Human Longevity Master Switch Gene (FOXO3) (statistical significant gene with fold change value of >1.5 fold)

NATUREPEP® SACHA INCHI *IN VIVO* CLINICAL STUDIES

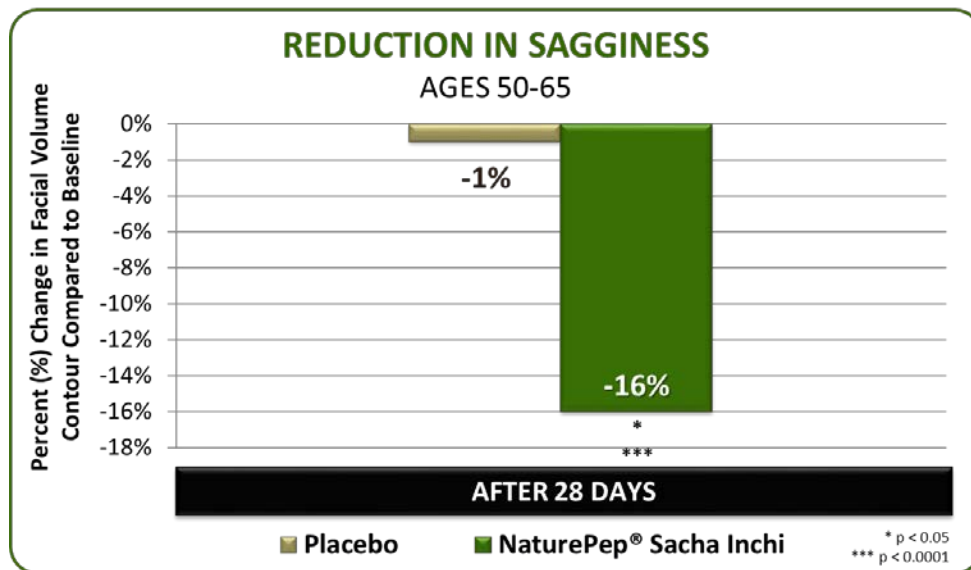
1. ANTI-SAGGINESS AND RESTRUCTURING EFFECT OF NATUREPEP® SACHA INCHI CLINICAL STUDY PROTOCOL

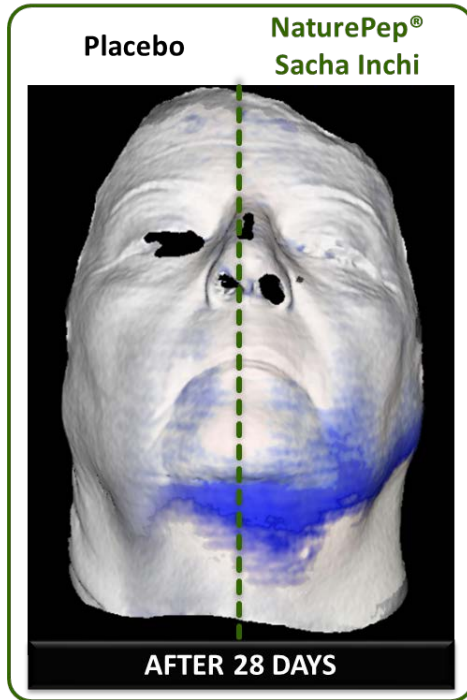
- Single blind randomized hemi-face intra-individual
- 15 Caucasian female volunteers (50 to 65 years old, Phototype I-III) with saggy skin on jawline
- Twice a day application of a cream containing 2 % NaturePep® Sacha Inchi against placebo cream for 28 days
- Evaluation of face volume contour and dermis non-echogenic surfaces on jawline
- FaceScan® (3D Face Scanning Imaging) and DermaScan C®2D (Ultrasound Imaging) image analysis
 - FaceScan®(3D Face Scanning Imaging) - fringe projection image analysis technique which calculates facial volume contour. A decrease in the sagginess volume (in blue color) characterizes a reshaping effect.
 - DermaScan C®2D (Ultrasound Imaging) - high frequency echograph. In ultrasound images the conjunctive tissue (echogenic zones), appears in color (yellow to green) while non-echogenic tissues (tissue gaps) appear in black. The ratio of the non-echogenic surface to the total surface analysed gives the proportion of non-echogenic tissues (in %) or tissue gaps. A decrease in this ratio characterizes an increase in the dermis density.
- Statistics: Paired-t-test or Wilcoxon Signed Ranked test; p<0.05. Comparison versus baseline and placebo

RESULTS

1A. RESHAPING AND ANTI-SAGGINESS EFFECT

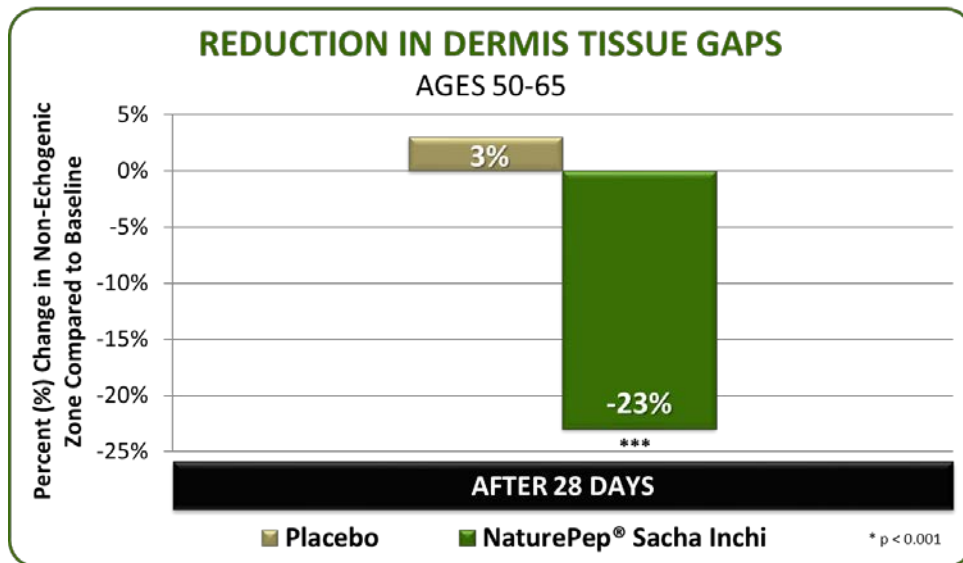
NaturePep® Sacha Inchi decreased saggy skin on jawline after 28 days of treatment. NaturePep® Sacha Inchi significantly decreased facial volume contour by -16% compared to baseline (statistical significant; p<0.001) and significant better compared to placebo (statistical significant; p<0.05). After 28 days of treatment, NaturePep® Sacha Inchi visibly decreased skin sagginess and reshaped facial contour.



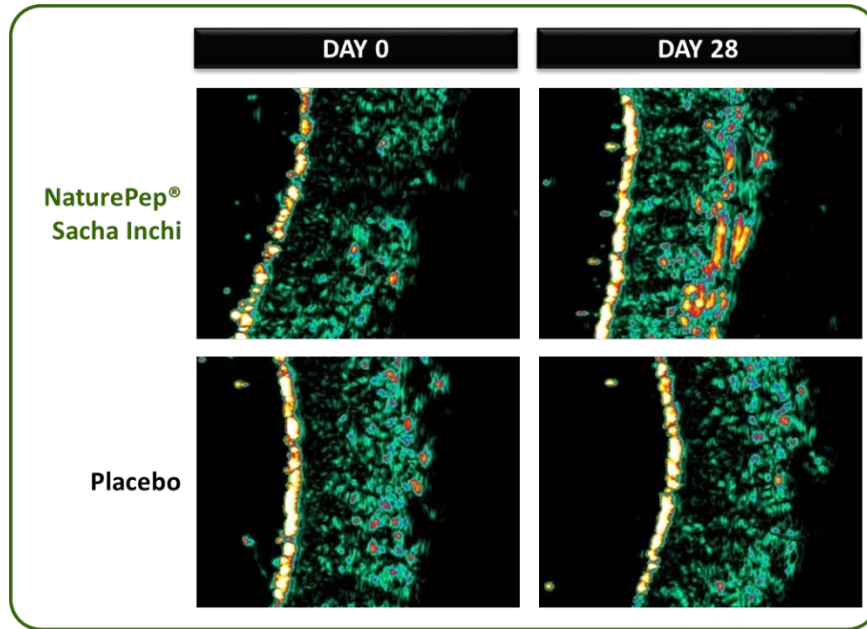


3D FaceScan® images for a 63 years old volunteer which reported 45% decrease in skin sagginess after 28 days of treatment. A decrease in the sagginess volume (in blue) characterizes a reshaping effect.

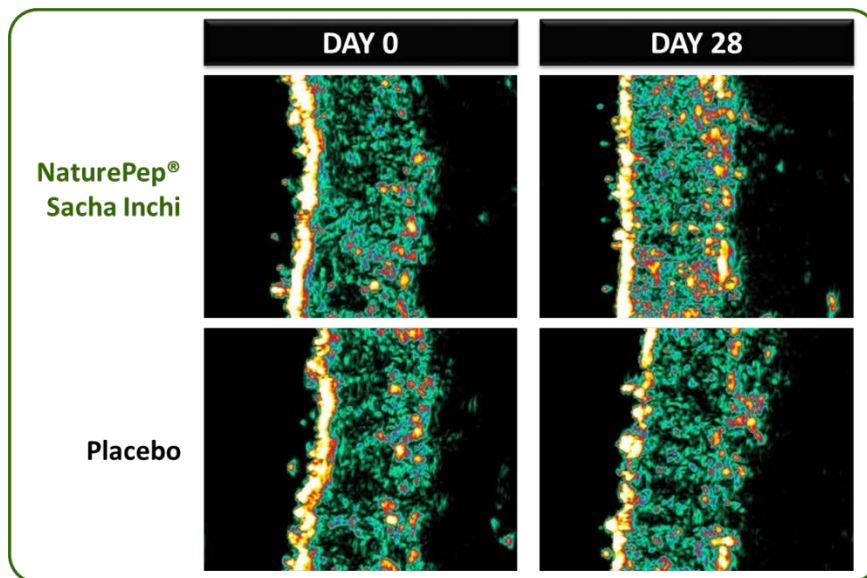
1B. RESTRUCTURING AND REDENSYFYING DERMIS DENSITY



NaturePep® Sacha Inchi cream provides a significant decrease in the non-echnogenic zones (tissue gaps) by -23% compared to baseline (statistical significant; $p < 0.001$) and significant better compared to placebo (statistical significant; $p < 0.05$), thus increasing dermis density and restructuring skin dermis.



Skin ultrasound images at baseline (day 0) and after treatment (day 28) with NaturePep® Sacha Inchi and placebo for a 63 years old subject. This subject reports a 47 % decrease in the dermis tissue gaps compared to baseline and visibly better compared to placebo. Dermis appears visibly denser, better organized, restructured and more homogenous in the skin sites treated with NaturePep® Sacha Inchi compared to placebo and baseline.



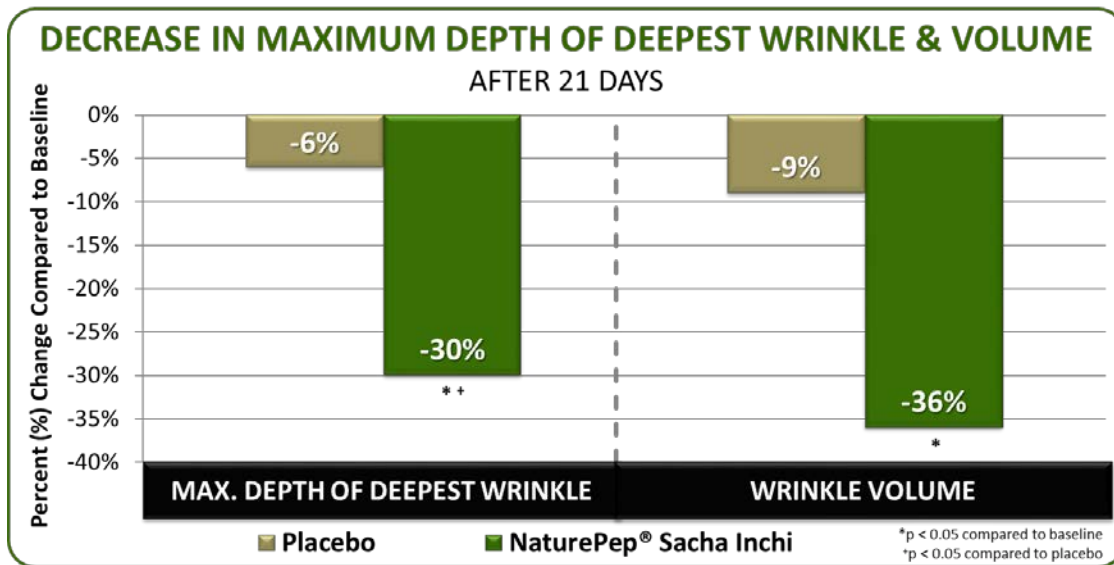
Skin ultrasound images for a 60 years old subject at baseline (day 0) and after treatment (day 28) with NaturePep® Sacha Inchi and placebo. This subjects reports a 50% reduction in dermis tissue gaps compared to baseline and performed visibly better compared to placebo. Dermis appears visibly denser, better organized, restructured and more homogenous in the skin sites treated with NaturePep® Sacha Inchi compared to placebo and baseline.

2. ANTI-WRINKLE AND SMOOTHING EFFECT OF NATUREPEP® SACHA INCHI STUDY PROTOCOL

- Single blind hemi-face randomized intra-individual study
- 7 Caucasian females volunteers (28-65 years old) with fine lines and wrinkles on the Crow’s feet
- Twice a day application of a cream containing 2% NaturePep® Sacha Inchi against placebo cream for 21 days
- Evaluation of maximum depth of deepest wrinkle, volume, roughness parameters on the Crow’s feet area was performed with PRIMOS®Lite image analysis technique via interference fringe projection.
- Statistics: Paired- t- test or Wilcoxon Signed Ranked test; $p < 0.05$. Comparison versus baseline and placebo

RESULTS

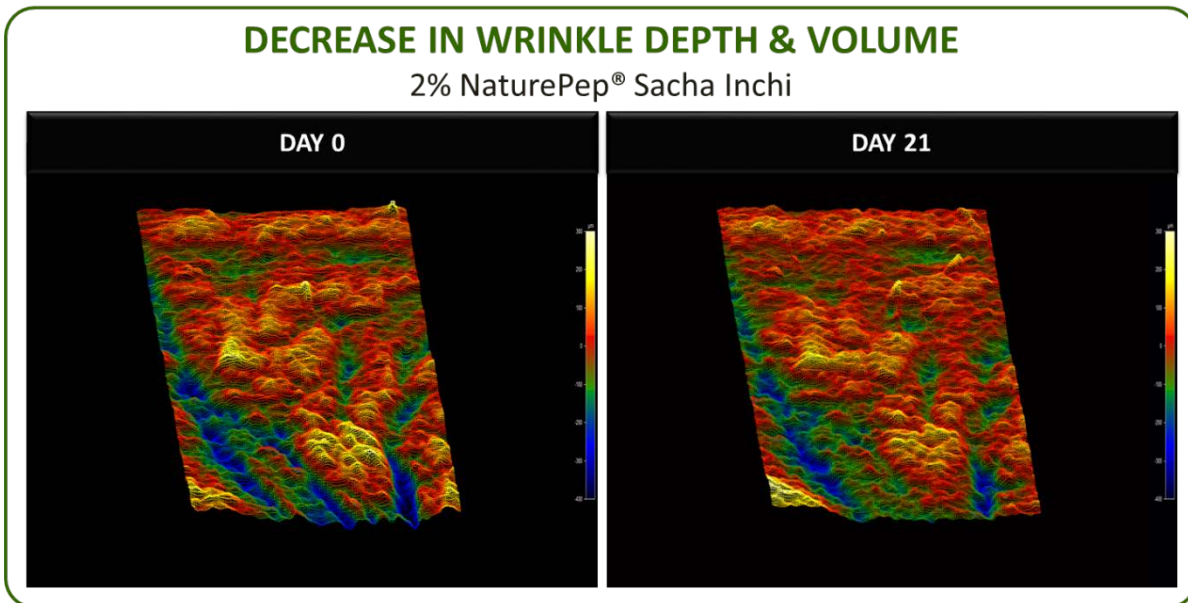
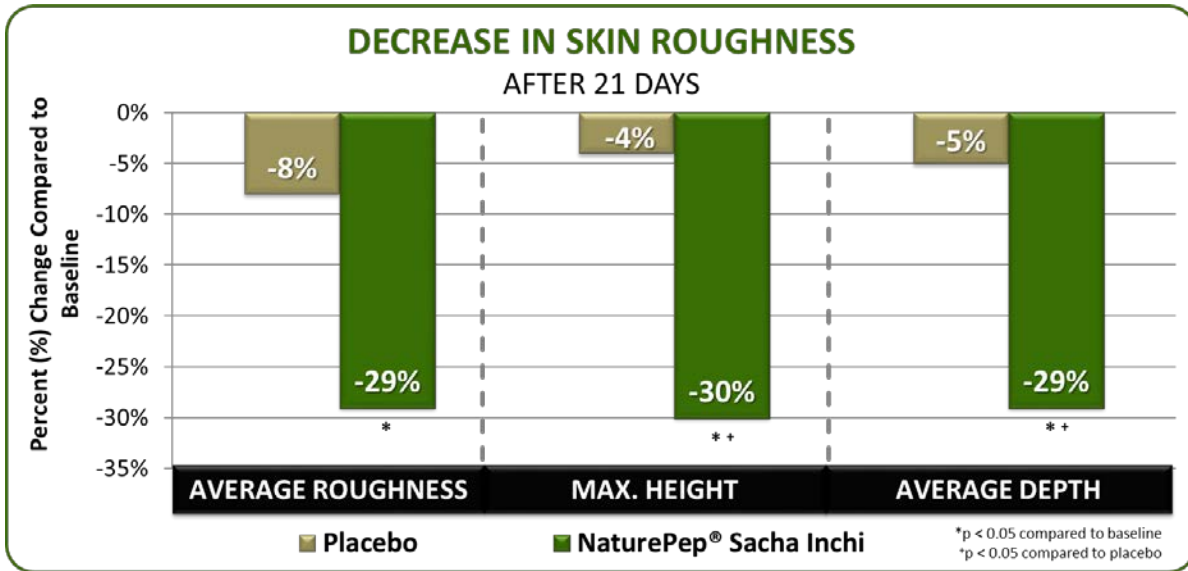
2A. ANTI-WRINKLE EFFECT



NaturePep® Sacha Inchi cream significantly reduced the maximum depth of deepest wrinkle compared to baseline and placebo cream after 21 days of treatment (statistical significant, $p < 0.05$) demonstrating a visible anti-wrinkle effect. NaturePep® Sacha Inchi significantly reduced wrinkle volume compared to baseline (statistical significant, $p < 0.05$) and performed better compared to placebo.

2B: SMOOTHING EFFECT

NaturePep® Sacha Inchi cream significantly reduced roughness parameters (average roughness, maximum height and average depth) compared to baseline and placebo after 21 days of treatment (statistical significant, $p < 0.05$) revealing smoother skin around the eyes.



NaturePep® Sacha Inchi decreased the maximum depth of the deepest wrinkle by 32% and wrinkle volume by 18% compared to baseline for a 63 years old subject after 21 days of treatment

NATUREPEP® SACHA INCHI BENEFITS & FEATURES

BENEFITS:

- Reduces facial sagginess for more contoured skin
- Restructures skin by increasing dermal density
- Decreases roughness for smoother skin
- Helps reduce wrinkles

FEATURES:

- Ancient seed renowned for wellness
- Contains predominantly small peptides for powerful performance
- Sustainably sourced
- Non-GMO natural peptide

INCI: Hydrolyzed Plukenetia Volubilis Seed Extract

Suggested use level: 1-5%

REFERENCES:

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3. <http://undergroundhealthreporter.com/ways-to-live-longer-with-6-little-known-inca-secrets/>
4. http://www.huffingtonpost.com/entry/what-is-sacha-inchi_us_57f276cfe4b0c2407cdec24,
<http://undergroundhealthreporter.com/superfood-sacha-inchi-nuts/>
5. Mintel GNPD Database

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