Peptides: An Effective Ingredient to Complement Vitamin C for Skin Aging

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Disclosure of Conflicts of Interest

- Support for these studies was provided by L'Oréal.
- Audrey Valois and Delphine Kerob are full-time employees of Laboratoires Vichy.
- Sergio Escobar, Karl Lintner, and Brigitte Closs have no relationships to disclose.

Rationale and Objectives

- Peptides stimulate collagen neosynthesis and vitamin C is a well-recognized antioxidant with anti-aging properties.
- Their formulation is critical for delivery across the stratum corneum [1].
- An anti-aging formula has been developed to optimize the bioavailability of pure vitamin C at 10% concentration, combined with a biopeptide complex, hyaluronic acid, and Vichy volcanic mineralizing water (Liftactiv Peptide C [Vichy]).
- Peptide-C is packaged in daily-dose amber glass ampoules requiring no preservatives.

The objective of these clinical studies was to evaluate, by clinical assessments and subjective evaluations, the effectiveness on wrinkles and radiance of a topical treatment containing peptides and vitamin C.

[1]*Gorouhi F, Maibach HI. Role of topical peptides in preventing or treating aged skin. Int J Cosmet Sci. 2009 Oct;31(5):327-45.*

Methods

Three open, clinical studies assessed the efficacy of twice-daily Liftactiv Peptide C formula (Peptide-C [Vichy])

Study 1: Dansyl chloride testing

- Subjects
  - 35 female subjects enrolled and 32 completed the study
- Method
  - Dansyl chloride patches were placed on both forearms for 24 hours
  - Peptide-C was applied twice-daily on one forearm (designated by computer-generated randomization) for 3 weeks
  - The subject and evaluating investigator were blinded to the treatment designation
  - Skin renewal was assessed by fluorescence measurements

Study 2: Cosmetoclinical study and subject questionnaires

- Subjects
  - 51 Caucasian females, 40-60 years old, were included and 47 completed 28 days of Peptide-C application, including 40 with clinical scoring
- Inclusion criteria
  - Crow's feet wrinkles of grade ≥2 and <4 (on a scale from 0 [no visible crow's feet wrinkles] to 6 [very visible crow's feet wrinkles])
  - Forehead wrinkles of grade ≥2 (on a scale from 0 [no visible forehead wrinkles] to 5 [very visible forehead wrinkles])
  - Nasolabial fold of grade ≥3 (on a scale from 0 [no visible nasolabial fold] to 5 [very visible nasolabial fold])
- Assessments
  - Investigator clinical scoring of wrinkles based on Dynamical Atlas visual assessment (n=40)
  - Subject questionnaires (n=47)

Study 3: Instrumental study and subject questionnaires

- Subjects
  - 53 Caucasian females, 40-55 years old, were included and 51 completed 29 days of Peptide-C application, including 40 with instrumental scoring
- Inclusion criteria
  - Crow's feet wrinkles of grade ≥2 and <5 with a main wrinkle of ≥2 cm in length with no crossed wrinkles
- Assessments
  - Print of the designated crow's foot wrinkle (randomly assigned) by instrumental scoring (quantification software and 3D fringe projection analysis; n=40)
  - Subject questionnaires (n=51)

Results

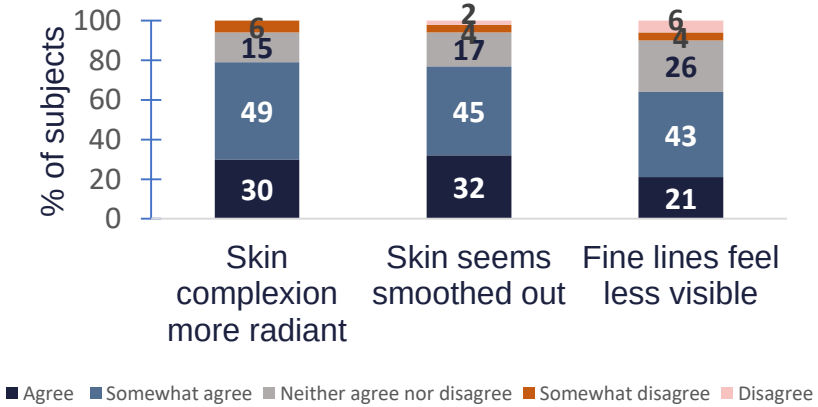
Study 1: Dansyl Chloride Cell Proliferation Testing

- The number of days for fluorescence to disappear from the skin is the rate of cell turnover
- Higher cell turnover improves skin radiance

Mean fluorescence at day 22 was lower for Peptide-C treated skin than untreated skin (59.6 vs 64.9; p<.0001).

Mean cell turnover was faster for Peptide-C (17.1 vs 19.2 days; p<.0001).

Study 2: Subject Questionnaire



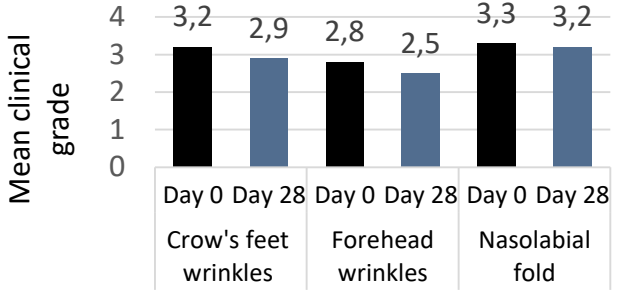
After 28 days application of Peptide-C:

- 79% of subjects indicated their skin complexion was more radiant
- 77% indicated their skin seemed smoothed out
- 64% indicated the fine lines were less visible
- Similar results were obtained in Study 3.

Study 2: Investigator Clinical Scoring of Wrinkle Severity

After 28 days of Peptide-C vs. baseline (all p<.05):

- crow's feet wrinkles decreased 9%
- forehead wrinkles decreased 11%
- nasolabial folds decreased 5%



Study 3: Instrumental Scoring of Number of Wrinkles

Quantirides Evaluation	Mean % Evolution Day 30 vs. baseline
Number of wrinkles	**-11.5%** (p<.05)
Total surface (mm^2)	**-15.7%** (p<.05)
Total length (mm)	**-13.1%** (p<.05)

After 29 days of Peptide-C vs. baseline (all p<.05):

Quantirides results showed a significant decrease of wrinkles and fine lines total surface, number, and total length.

Conclusions

In three clinical studies, this formula of Peptide-C topical serum (containing peptides and vitamin C) in innovative packaging was consistently shown to be effective in improving facial wrinkles and skin renewal.