FACE

# MATRIXYL® Morphomics™


**FUNCTION** Anti-wrinkle.

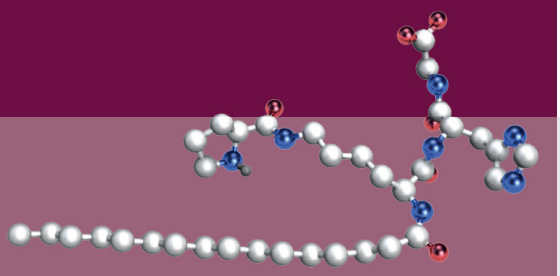
**DEFINITION** A novel approach in the research of active matrikines®: Palmitoylated tripeptide Lysyl-Histidyl-Glycine with a grafted proline on the lysine.

**PROPERTIES** MATRIXYL® Morphomics™ supports the reduction of vertical lines (frown lines, marionette lines, nasogenian fold) but also crow's feet after 6 weeks, for a happier expression.

**CHARACTERISTICS** MATRIXYL® Morphomics™ influences cellular and dermal morphology by re-establishing and rebooting the skin connections between the fibroblast nucleus and the ECM.

**POINT OF INTEREST** Proteomics of Youth™ reveal the activation of longevigenes™ against signs of ageing.

**APPLICATIONS** Anti-ageing creams, serums, gels...



Pal-K(Pro)-HG

before

after 6 weeks

## 6 weeks to turn marionette lines into a smile

**FORMULATION** water soluble
Add in the formula between room temperature and 50°C.

**RECOMMENDED USE LEVEL** 2%

**PATENT** FR 3 029 782 - WO 2016 097 965

**INCI NAME** Water (Aqua) – Pentylene Glycol – Caprylyl Glycol – N-Prolyl Palmitoyl Tripeptide-56 Acetate

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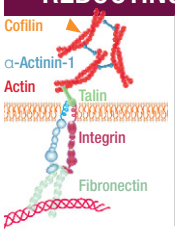
# CLAIM SUBSTANTIATION

## in vitro

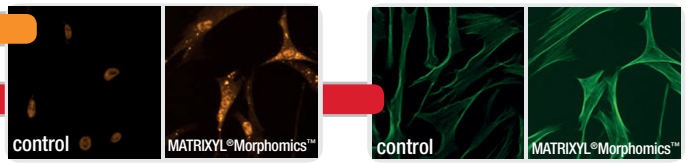
TECHNOLOGIES:
(1) Explants + immunohistology MATRIXYL®Morphomics™ eq.2%
(2) Skin equivalents + immunohistology
(3) Normal human fibroblast cultures + immunocytology
(4) Proteomics (LC-MSMS) MATRIXYL®Morphomics™ eq.1%
(5) Normal human fibroblast cultures + Elisa
(6) qRT-PCR, MATRIXYL® Morphomics™ eq.1%

SIGNIFICANCE: * p<0.01/control or placebo, ** p<0.02/control, *** p<0.05/control or placebo

### REBOOTING THE CONNECTION: THE CYTOSKELETON



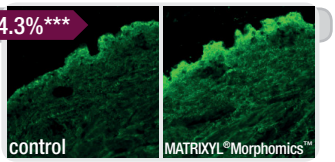

| | | |
|---|---|---|
| Cofilin | +446%* (3) | +95%*** (4) |
| α-Actinin-1 | +82%*** (4) | |
| Actin eq.1% | +187%* (3) | |
| Talin 2% | +65.8%* (1) | |
| Integrin α2/β1 eq.1.4% | +55.3%* (2) | |
| Fibronectin eq.1.4% | +61%* (5) | |

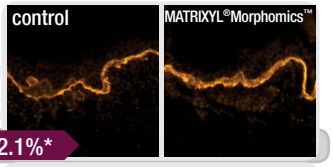


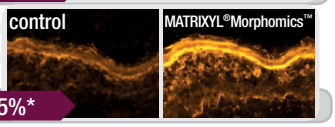

**MATRIXYL® Morphomics™ reboots the connection between the nucleus and the ECM by ensuring the cytoskeleton integrity.**

### DERMAL MORPHOLOGY

| | gene (4) | protein (6) | fibre (1) |
|---|---|---|---|
| COLLAGEN I (COL1A1) | x 1.81* | +42%* | +14.3%*** |
| Fibrillar Collagen Enzyme Crew: Protein disulfite isomerase (PDI) | | +45%* | |
| Prolyl 4-hydrolase subunit alpha-1 (P4HA1) | x 1.53* | +74%* | |
| Procollagen-lysin, 2-oxoglutarate 5-dioxygenase (PLOD1) | x 2.03* | +43%*** | |
| Pro-collagen gluco-galactosyl-transferase1 (COLGALT1) | x 1.94* | +161%* | |
| N-proteinase (ADAMTs1) | | +72%** | |
| Procollagen C-endopeptidase enhancer-1 (PCOLCE) | x 1.61* | +62%* | |
| Plasminogen activator inhibitor-1 (PAI-1) | | +54%* | |
| Matrix metalloproteinase-2 (MMP2) | | -54%* | |
| COLLAGEN III (COL3A1) | +58%* | | |
| COLLAGEN IV eq.1.4% | | +79%* | |
| COLLAGEN IV eq.2% | | +182%* | +12.1%* |
| COLLAGEN VI (COL6A3) eq.1.4% | +113%*** | +27%* | |
| COLLAGEN VI (COL6A3) eq.2% | | +45%* | |
| HYALURONIC ACID | | | +25%* |




**MATRIXYL® Morphomics™ stimulates the collagen fibre production and maturation to rebuild a functional network.**

**MATRIXYL® Morphomics™ acts on various key players responsible for the cellular and dermis morphology.**

## in vivo CLINICAL STUDIES

2 female panels with mean age 64 and 58 years old and one male panel with mean age 59 years old. Twice daily application of a cream with 2% MATRIXYL® Morphomics™ on the face against placebo for 6 weeks.

### MARIONETTE LINES

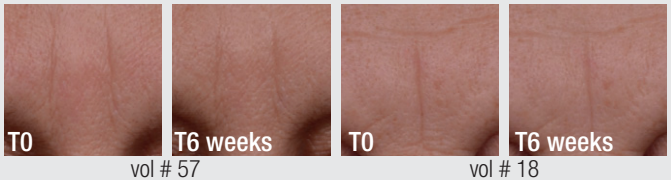
Instrumental evaluation of the marionette lines by FOITS on 26 female panellists.

**Volume (mm³)** ..... **-22.7%**/T0 up to **-99%, -21.7%**/placebo *p<0.08*
**Perimeter (mm)**..... **-10.6%**/T0 up to **-92%, -9.6%**/placebo, *p<0.06*

### FROWN LINES

Instrumental evaluation of the frown lines by FOITS on 2x32 female panellists.

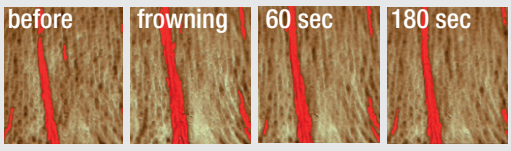
**Volume (mm³)** ..... **-9.5%**/T0 up to **-65%, -9.2%**/placebo *p<0.05*
**Perimeter (mm)**..... **-7.1%**/T0 up to **-39%, -7.8%**/placebo, *p<0.05*
**Roughness (Sa in µm)**..... **-5.8%**/T0 up to **-20%, -3.9%**/placebo, *p<0.07*




vol # 57 vol # 18

### RECOVERY AFTER FROWNING

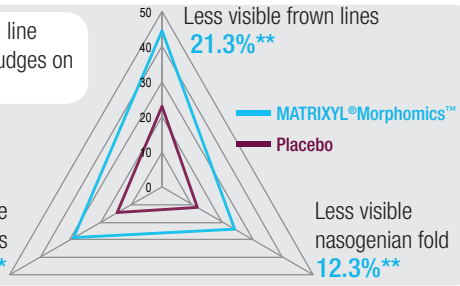
Instrumental evaluation of the skin smoothness recovery after frowning for 10 seconds by FOITS on 22 female panellists.




**Smoothness recovery after 180 sec 82.3%**
*p=0.08*/placebo

### VISIBLE REDUCTION OF VERTICAL LINES

Evaluation of the vertical line perception by 5 expert judges on 34 female panellists.




**MATRIXYL® Morphomics™ exerts a significantly perceivable effect on reducing vertical lines compared to the placebo, especially the frown lines.**

### CROW'S FEET

Instrumental evaluation of the crow's feet by FOITS on 32 female panellists and on 20 male panellists.

**Main wrinkle volume (mm³)**.. **-16.5%**/T0 up to **-52%, -7.1%**/placebo, *p<0.07*
**Mean depth (µm)**..... **-13.5%**/T0 up to **-44%, -7.3%**/placebo, *p<0.01*
**Deep wrinkles surface (%)**. **-26.6%**/T0 up to **-75%, -14.3%**/placebo, *p<0.06*
**Roughness (µm)**..... **-9.9%**/T0 up to **-30%, -4.9%**/placebo, *p<0.05*
**Wrinkle width angle (°)** .... **+16.4%**/T0 up to **+45%, +15.2%**/placebo, *p<0.01*


vol # 13 male$

$Wrinkle surface (mm²).....**-11.8%**/T0 up to **-49%, -13.2%**/placebo, *p<0.05*

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