

induchem



***NovHyal***<sup>®</sup>

***Biotech G***

***advanced skin rejuvenation***

**Molecular  
Pro-filler**



**Exclusive  
Patent**

Il était une fois à la source de la pulpe de la peau...NovHyal® Biotech G.

Les sucres sont la source de la vie. Les cellules synthétisent les polymères de structure de la peau à partir des sucres, et plus particulièrement les glycosamino-glycanes (GAGs) et l'acide hyaluronique à partir de la N-acétyl-glucosamine-6-phosphate (NAG6P).

La recherche Induchem a créé NovHyal® Biotech G, de la NAG6P naturelle concentrée, obtenue par un nouveau procédé biotechnologique de chimie verte. NovHyal® Biotech G est une source unique de la "brique" métabolique naturelle de la peau, qui alimente les cellules cutanées, stimule leur régénération et favorise la production de GAGs au niveau épidermique et dermique.

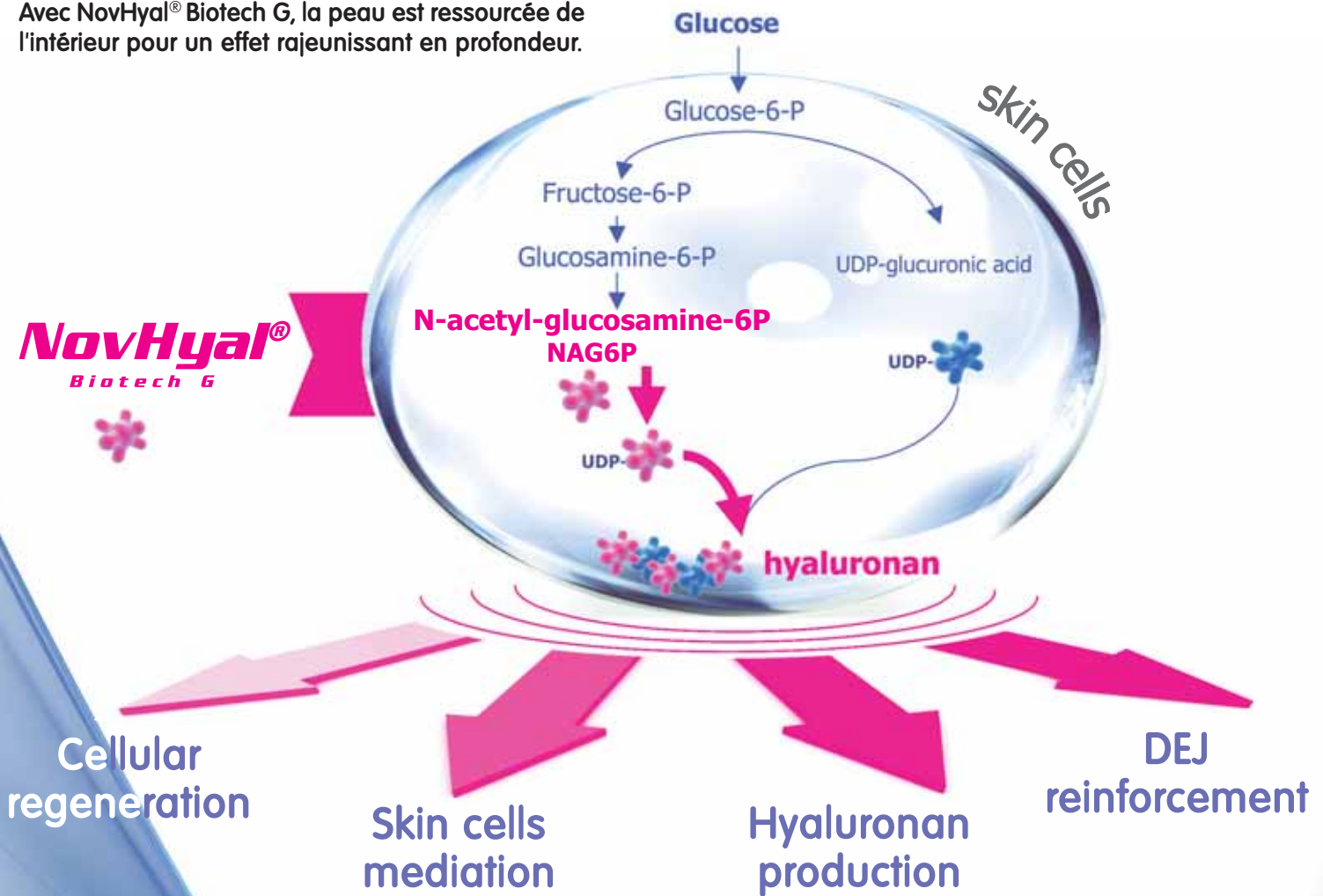
Avec NovHyal® Biotech G, la peau est ressourcee de l'intérieur pour un effet rajeunissant en profondeur.

Once upon a time at the origin of skin pulp, there was...NovHyal® Biotech G.

Sugars are at the origin of life. Our cells synthesize skin structural polymers from sugars, and more particularly GAGs and hyaluronan from N-acetyl-glucosamine-6-phosphate (NAG6P).

Induchem research has created NovHyal® Biotech G, a concentrated and natural NAG6P obtained by means of an exclusive green chemistry biotechnology process. NovHyal® Biotech G is a unique source of skin building block, which feeds the cutaneous cells, stimulates their regeneration and supports the production of GAGs at the epidermic and dermic level.

Using NovHyal® Biotech G, skin is resourced for a unique and deep rejuvenating effect.

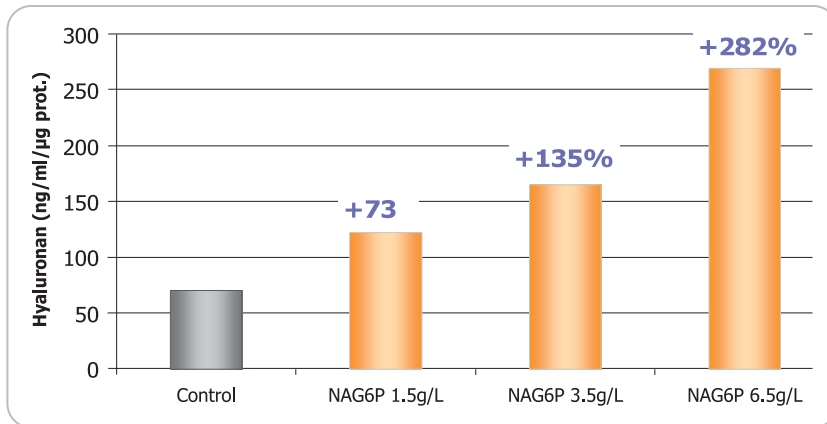


# EFFET FILLER · DERMO-VOLUMATEUR

## FILLER EFFECT · DERMO-PLUMPING

IN VITRO

### STIMULATION OF HYALURONAN PRODUCTION BY HUMAN NORMAL KERATINOCYTES



**Hyaluronic acid synthesis:  
+282% in 48h00**

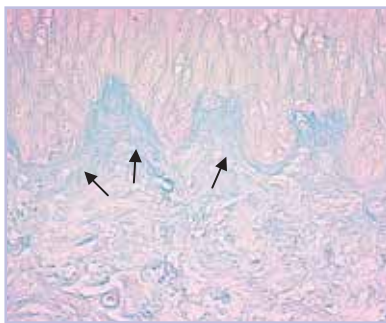
Kératinocytes humains normaux cultivés en présence de la molécule active du NovHyal® Biotech G pendant 48h00. Quantification par test ELISA de l'acide hyaluronique produit par les cellules.

[Contrôle : cellules sans NAG6P]

*Human normal keratinocytes incubated with the active molecule of NovHyal® Biotech G during 48h00. ELISA quantification of the amount of hyaluronan produced by cells. [Control: cells without NAG6P]*

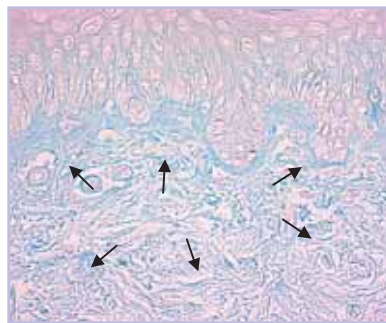
EX VIVO

### HUMAN SKIN – STIMULATION OF GAG PRODUCTION IN PAPILLAR DERMIS AFTER SIX DAYS



**Untreated skin - Control**

Comment: low amounts of GAG (blue colour) mainly located around the DEJ



**Skin treated with NAG6P 10g/L**

Comment: clear amounts of GAG well distributed in the entire papillar dermis

**Homogeneous production of  
GAGs in the entire dermis**

Test de la molécule active du NovHyal® Biotech G sur peau humaine mature durant 6 jours. Mesure de la production des GAGs acides par coloration au bleu Alcian.

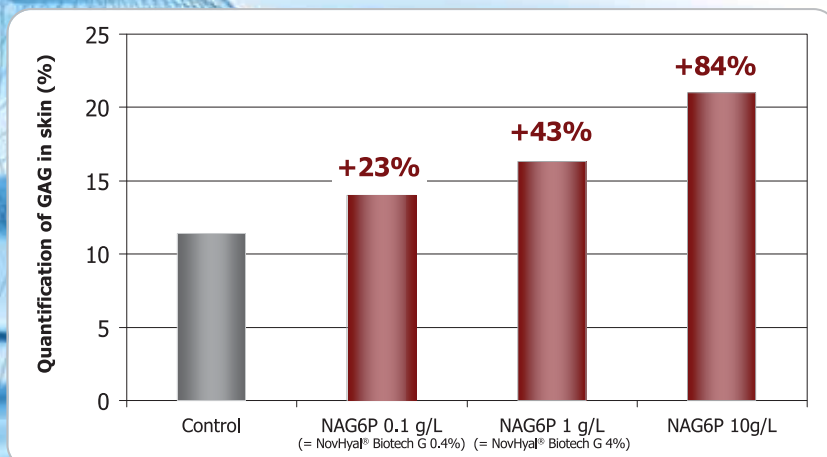
[Contrôle : peau sans NAG6P]

*Test of the active molecule of NovHyal® Biotech G on human skin during 6 days. Staining of acid GAGs with Alcian blue.*

[Control: skin without NAG6P]

EX VIVO

### HUMAN SKIN – STIMULATION OF GAG PRODUCTION IN PAPILLAR DERMIS AFTER TEN DAYS



**Boosted GAGs production:  
+84% in 10 days**

Test de la molécule active du NovHyal® Biotech G sur peau humaine mature durant 10 jours. Mesure de la production des GAGs acides par analyse d'image et quantification. [Contrôle : peau sans NAG6P]

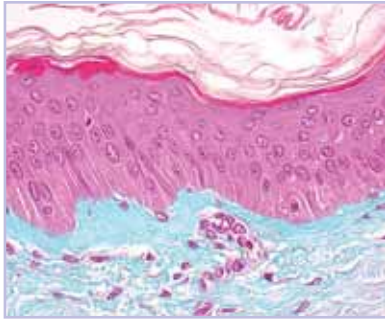
*Test of the active molecule of NovHyal® Biotech G on human skin during 10 days. Quantification of acid GAGs by image analysis.*

[Control: skin without NAG6P]

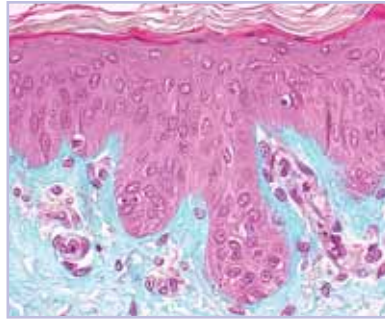
# EFFET RAFFERMISSANT · LISSANT FIRMING · SMOOTHING EFFECT

EX VIVO

## HUMAN SKIN – REORGANIZATION AND RESTRUCTURING OF DERMIS EPIDERMIS JUNCTION AFTER TEN DAYS



**Untreated skin - Control**  
Comment: good epidermis structure but weak dermis-epidermis junction



**Skin treated with NovHyal® Biotech G 0.4 %**  
Comment: good epidermis structure and excellent dermis-epidermis junction

### Dermis-epidermis junction strengthened in 10 days

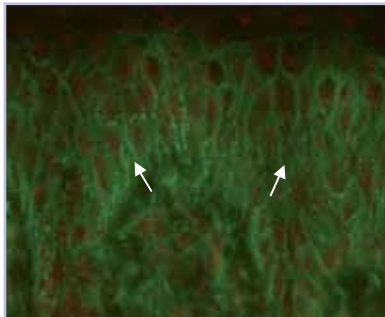
Evaluation du NovHyal® Biotech G sur peau humaine mature durant 10 jours. Analyse anatomique de la jonction épidermo-dermique.  
[Contrôle : peau sans NAG6P]

*Evaluation of NovHyal® Biotech G on human skin during 10 days. Skin anatomy analysis at the epidermis-dermis junction level.*  
[Control: skin without NAG6P]

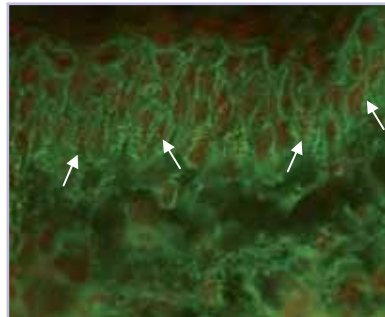
# EFFET REGENERATEUR · MEDIATEUR REGENERATION EFFECT · MEDIATION

EX VIVO

## HUMAN SKIN – EXPRESSION OF CD44 RECEPTORS (hyaluronan receptor) IN THE BASAL LAYER AFTER TEN DAYS



**Untreated skin - Control**  
Comment: clear expression of CD44 receptors at the level of the basal layer



**Skin treated with NovHyal® Biotech G 0.4 %**  
Comment: very clear (enhanced) expression of CD44 receptors at the level of the basal layer

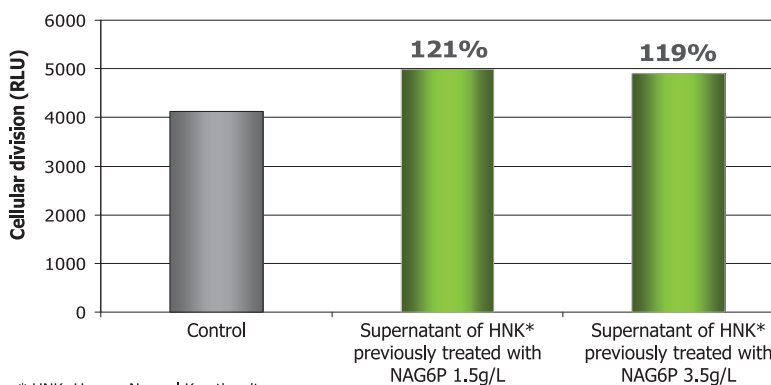
### Enhanced expression of CD44 receptors in 10 days

Evaluation du NovHyal® Biotech G sur peau humaine mature durant 10 jours. Quantification des récepteurs CD44 par marquage en immuno-fluorescence.  
[Contrôle : peau sans NAG6P]

*Evaluation of NovHyal® Biotech G on human skin during 10 days. Quantification of CD44 receptors by immunofluorescence labelling.*  
[Control: skin without NAG6P]

## MEDIATION OF CELL COMMUNICATION: STIMULATION OF FIBROBLASTS DIVISION INDUCED BY KERATINOCYTES

IN VITRO



### Fibroblast induced regeneration: 120% in 48h00

Fibroblastes humains normaux cultivés en présence du surnageant d'une culture de kératinocytes préalablement cultivés avec du NAG6P pendant 48h00. Mesure de la prolifération par test ELISA (BrdU).  
[Contrôle : surnageant de kératinocytes cultivés sans NAG6P]

*Human normal fibroblasts incubated with supernatant of keratinocytes previously grown with NAG6P during 48h00. Measure of cell proliferation by ELISA assay (BrdU).*  
[Control: supernatant of keratinocytes cultured without NAG6P]



# ACIDE HYALURONIQUE TROISIEME GENERATION

## THE THIRD GENERATION HYALURONIC ACID

INCI Name: GLYCERIN, DISODIUM ACETYL GLUCOSAMINE PHOSPHATE

### FABRICANT

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### INGREDIENT ACTIF

#### TROIS ACTIONS SYNERGIQUES

1. Stimule la synthèse de GAGs et de l'acide hyaluronique,
2. Renforce et améliore la JED,
3. Induit la régénération cellulaire, et la communication épidermo-dermique.

### ORIGINE

L'actif NovHyal® Biotech G est obtenu par phosphorylation enzymatique de la N-acétyl-glucosamine naturelle, grâce à un procédé biotechnologique de chimie verte breveté.

### COMPOSITION

- N-acetyl-glucosamine-6-phosphate (2,2 à 2,8%)
- Eau qsp 100%
- Glycérine 50%

### APPLICATIONS

- Soin anti-âge
- Produit contour des yeux
- Soin des lèvres
- Produit contour du visage
- Traitement des rides profondes
- Sérum rajeunissant - raffermissant
- Produit resculptant du corps

### CONDITIONNEMENT - FORMULATION

NovHyal® Biotech G est un actif fourni en solution aqueuse.

**SANS SOLVANT – SANS CONSERVATEUR**

Cet actif peut être introduit dans une formule sous forme liquide à pH inférieur à 7,0

### DOSE RECOMMANDÉE

De 0,4% à 6% de la solution commerciale.

### MANUFACTURER

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Phone: +41 44 908 43 33  
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### ACTIVE INGREDIENT

#### THREE SYNERGISTIC ACTIONS

1. Boosts GAGs and hyaluronan synthesis,
2. Reinforces and improves DEJ reinforcement,
3. Induces cellular regeneration, and epidermis-dermis communication.

### ORIGIN

NovHyal® Biotech G is obtained by means of the enzymatic phosphorylation of natural N-acetyl-glucosamine, using a proprietary green chemistry biotechnology process.

### FORMULA

- N-acetyl-glucosamine-6-phosphate (2.2 to 2.8%)
- Water up to 100%
- Glycerin 50%

### APPLICATIONS

- Anti-aging
- Eye contour
- Lips care
- Face contour
- Deep wrinkles treatment
- Firming - smoothing serum
- Body sculpting product

### PACKAGING – FORMULATION

NovHyal® Biotech G is a liquid solution.

**SOLVENT FREE – PRESERVATIVE FREE**

This active can be incorporated in any formula under liquid form at pH below 7.0

### SUGGESTED RANGE OF USE

From 0.4% to 6% of the commercial solution.

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