



Our pharmaceutical grade Hyaluronic Acid of **non-animal origin** has been recognized on the market for its **premium quality**.
Our wide range of molecular weight and flexible supply support the evolving needs of the medical devices and pharmaceutical industries.

A SPECIFIC KNOW-HOW IN BACTERIAL FERMENTATION

- Proprietary manufacturing process
- Produced by bacterial fermentation using a proprietary strain
- Multiple steps of purification to control and eliminate level of impurities
- Specific isolation process to get high purity HA fibers

PREMIUM PHYSICAL FORM

PRODUCED IN FIBER FORM:

- High purity : very low level of impurities
- Efficient dissolution
- Dust-free, no electrostaticity
- No product wasted



FLEXIBLE SUPPLY

- Tailor-made products (IV from 0.2 to 4.0 m3/kg)
- Customized packaging
- Supply security

REGULATORY ATTRIBUTES

- DMF, CEP, JDMF & KDMF registered
- Very low level of impurities, far below the Pharmacopeia requirements
- GMP inspections (ANSM, FDA)
- Retest date: 5 years
- Audited by our customers for over 30 years

30 YEARS OF EXPERTISE

Produced in **Javené, Brittany, France**

An exceptional french know-how based on 30 years of expertise in biopolymers production

2 independent Hyaluronic Acid production plants to offer a **double-sourcing for our customer and a security of supply**.



Feel the
difference
with HTL inside

**Headquarters
and industrial site**

7 Rue Alfred Kastler
ZI de l'Aumallerie
35133 Javené, France

Paris office

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75014 Paris, France

Contact us:

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www.htlbiotech.com

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Feel the *difference* with HTL Inside

PREMIUM QUALITY
POLYNUCLEOTIDES
PDRN - PN

INJECTABLE GRADE

45

Years of Expertise in
Polynucleotides production





Feel the *difference* with HTL Inside

HTL Biotechnology is the **global pioneer** in the development and sustainable production of **pharmaceutical grade** biopolymers, used to develop life-changing treatments for **millions of patients** worldwide.

For over **45 years**, our teams have been developing and perfecting a pharmaceutical-grade platform that provides **customized solutions** to pharmaceutical laboratories and medical device manufacturers worldwide.



Our unique manufacturing site in **France** hosts state-of-the-art industrial facilities to secure supplies for our customers with **premium quality polynucleotides**





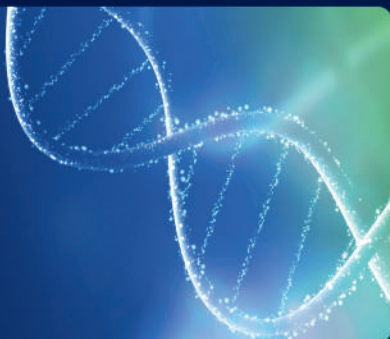
HTL's polynucleotides are produced from **wild salmon** milt, sustainably **upcycled** as a salmon by-product*



Our production process **preserves** the original structure of the DNA, resulting in a **very high level of purity**



We provide a **large range of molecular weight**



POLYNUCLEOTIDES MODE OF ACTION

- Leads to higher fibroblasts viability
- Increases Pro-Collagen I production
- Reduces MMP-1 quantity thus reducing extracellular matrix degradation
- Reduces damages due to UVA and UVB
- Reduces oxidative stress in cells

HTL Biotechnology is assessed by **EcoVadis**
Our manufacturing site is certified **ISO 14001**

*Upcycled salmon by-product from a certified and audited source





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Feel the *difference* with HTL Inside

PREMIUM QUALITY
SODIUM DNA

A natural biopolymer

45

Years of
Expertise in
DNA production



Sodium DNA leaves a significant **anti-ageing** effect on the skin:

- effective on lines and deep wrinkles
- effective against UV-induced damages



Properties for skin care

- **Increase elasticity and density of the skin** by promoting viability and proliferation of fibroblasts, and the regeneration of the extracellular matrix
- **Improve skin hydration** by retaining water molecules
- **Reduce skin damages caused by UVA and UVB**

In cosmetic formulations



- Regenerating mask, serum, cream
- Repairing cream
- Oral Care treatments

Recommended dosage in the finished product

0,25 to 2%



OUR SODIUM DNA IS AVAILABLE ALL YEAR ROUND
WITH FLEXIBLE MINIMUM QUANTITY OF ORDER

Our Sodium DNA is a **safe** and **sustainable** product for revitalizing the skin

HTL's exclusive production process preserves the original structure of the DNA, resulting in a **high level of purity**

Upcycled salmon by-product from a certified and audited source
Natural resources are preserved

HTL Biotechnology is assessed by EcoVadis
Our manufacturing site is certified ISO 14001



HTL BIOTECHNOLOGY EFFICACY DATA *



Sodium DNA **mode of action:**

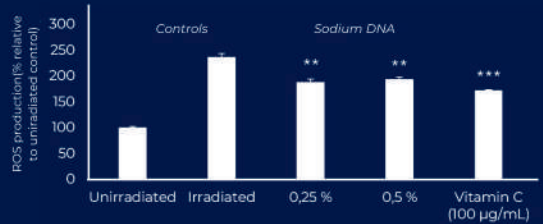
- Leads to higher fibroblasts viability
- Stimulates fibroblasts proliferation
- Increases Pro-Collagen I production
- Reduces MMP-1 activity thus reducing extracellular matrix degradation
- Reduces damages due to UVA and UVB
- Reduces oxidative stress in cells

Cell viability
Hyaluronic Acid synthesis
Pro-Collagen I production

Oxidative Stress
MMP-1 activity
Inflammation

Antioxidant effect

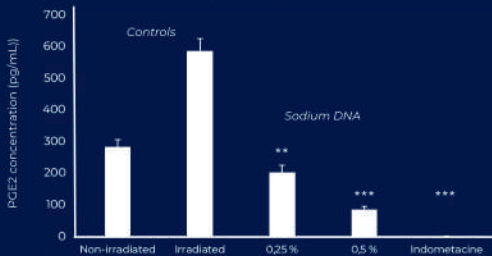
Sodium DNA has an important antioxidant effect, reducing damages caused by reactive oxygen species



ROS production from NHDF fibroblasts challenged with UVA

Anti-inflammatory effect

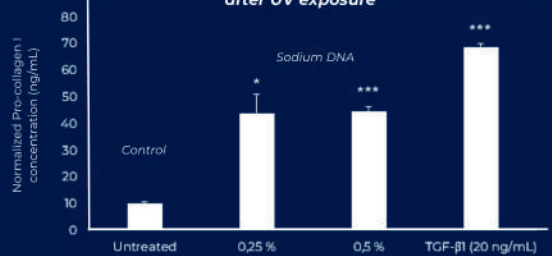
Sodium DNA has an important anti-inflammatory effect, reducing damages due to UVA and UVB



PGE2 production in culture supernatant from NHDF fibroblasts challenged with UVA and UVB

Pro-Collagen I production

Sodium DNA promotes Pro-Collagen I production, helping to restore extracellular matrix integrity after UV exposure



Pro-Collagen I production in culture supernatant from NHDF fibroblasts challenged with UVA and UVB



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