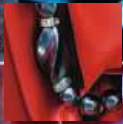


# Hema'Tite™



| mineral matters



# mineral

Stone is an exceptional receptor.

# matters



Gattefosse - v1.03.

LIBiol 36, chemin de Genas - BP 603 - F-69804 SAINT-PRIEST Cedex - E-mail: [infocos@gattefosse.com](mailto:infocos@gattefosse.com)  
LIBiol is a company of GATTEFOSSÉ Group





*A new reference, resulting from its unique extraction technology, LIBiol presents Hema'Tite™, an iron-rich extract which, like a jewel, will restore the radiance and tone of the skin.*

Trace elements

## An iron... constitution...



*Like the blood of the earth, Hema'Tite™ has a powerful red colour.*

*Stone extract rich in iron, Hema'Tite™ brings to the skin all the power of the earth to reinforce the skin tissue.*

Iron is a trace element, essential for the good health of the organism.

Iron allows the cells to breathe. It is found in haemoglobin in the red blood cells and in the cell respiratory chain (cytochrome chain).

Iron intervenes in several enzymatic reactions right inside the cells.

It helps the smooth running of iron co-factor catalases, enzymes that help the cells to fight free radicals.

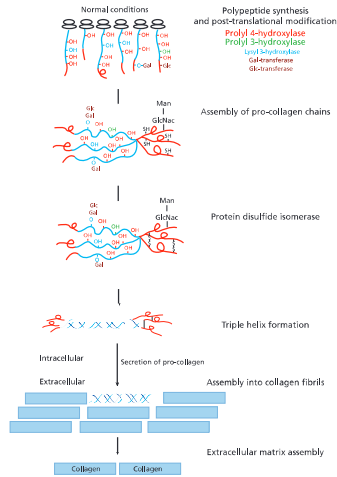
It participates in the metabolic activity of the cell nucleus, DNA synthesis and in reactions of the energetic metabolism.

**LIBiol has taken an interest in iron for its role in collagen synthesis and has created Hema'Tite™.**



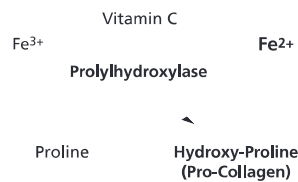
Collagen is naturally produced by the body. It is one of the main components of the skin, synthesised by specialised cells: fibroblasts.

## Collagen: the skin's support



Collagen has a dual biological role. Firstly, with elastin, proteoglycans and glycoproteins, it forms the Extracellular Matrix that binds together tissues and organs. Secondly, the collagen gives the different tissues, and the skin in particular, their strength, suppleness and elasticity.

Collagen synthesis from precursors requires several steps of maturation including a step of proline hydroxylation in the presence of **vitamin C and iron**, thanks to **prolylhydroxylase**.



**Hema'Tite™** has a stimulating effect that **helps reactivate pro-collagen synthesis** and restore the tone and strength of mature skin.

This post-translational modification helps to **stabilise** the pro-collagen molecule and allows its **effective excretion** in the inter-cellular space.

Without this reaction, or in the case of vitamin C or iron deficiency, the pro-collagen produced has an abnormal structure and remains blocked within the cells.

# Substantiation

Although there are various molecules capable of stimulating collagen synthesis, Vitamin C is one of the most frequently used. With **Hema'Tite™**, a complex rich in natural iron, LIBIol proposes an innovative and effective alternative.

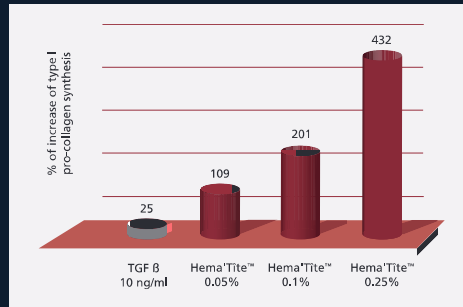
Collagen synthesis

## Hema'Tite™ the anti-aging jewel

**Hema'Tite™** was first tested on human fibroblasts to evaluate its capacity **to increase synthesis of type I pro-collagen**.

**A genuine regeneration agent, Hema'Tite™ will boost synthesis of the supporting tissue of the dermis.**

**Hema'Tite™ thus helps the skin to restore its density, and regain its firmness from within.**



This initial *in vitro* test shows that Hema'Tite™ significantly increases synthesis of type I pro-collagen within the cultured human dermis cells.

Its **dose-dependent** action is **4 to 16 times more powerful than TGF B**, a benchmark growth factor that stimulates pro-collagen synthesis.

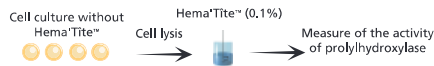
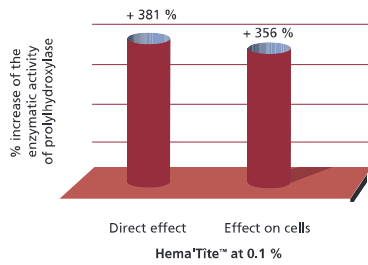
By studying its means of action, we have been able to demonstrate that **Hema'Tite™** acts directly on one of the key enzymes in pro-collagen synthesis: **prolylhydroxylase**.



Two complementary studies demonstrate the action mechanism of **Hema'Tite™**. Iron input stimulates the activity of the prolyhydroxylase enzyme, thus increasing pro-collagen synthesis.

## Stimulation of Prolyhydroxylase

An initial direct test, on a fibroblast lysat containing prolyhydroxylase, shows that **Hema'Tite™** acts effectively on this specific enzyme.



This study proves that **Hema'Tite™**, used *in vitro* at 0.1%, increases prolyhydroxylase activity by **381%**.

Secondly, we checked if **Hema'Tite™** was capable of penetrating into the cells and inducing an identical action to the one already observed.



There is an identical action with an increase of over **+356%** in enzymatic activity.

*Hema'Tite™ is therefore capable of acting right inside the cells, to stimulate enzymatic activity of prolyhydroxylase, thus **increasing fibroblast production of pro-collagen.***

Tests have been conducted on **human skin explants**, using Hema'Tite™ in a formulation at 1% (0.4 mg of formulation applied topically once a day, every 2 days). Hema'Tite™ was tested in comparison to a positive market reference containing **Retinol + Zinc**.

## EX VIVO TEST vs positive market reference

### Retinol-like activity

After 6 days, both Hema'Tite™ and the positive reference induced a significant epidermal thickening.



Control D6



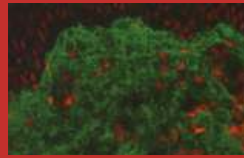
Hema'Tite™ D6



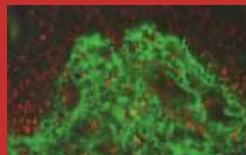
Positive reference D6

### Regeneration of the extra-cellular matrix

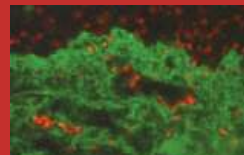
After 6 days, the explants treated with either Hema'Tite™ or the positive market reference showed a clear expression of collagen I. Hema'Tite™ showed an activity slightly superior to that of the Retinol/Zinc positive reference.



Control D6



Hema'Tite™ D6



Positive reference D6

By its **stimulating action on collagen synthesis**, Hema'Tite™ will **reinforce the mechanical properties** of the skin and rebuild the fibril network.

Hema'Tite™ helps to **re-densify the epidermis**, and fight against thinning of the skin due to aging.

Finally, the *in vivo* anti-wrinkle effect of Hema'Tite™ has been demonstrated on crow's feet. Hema'Tite™ has been tested at 2% in a basic aqueous formulation.

We measured the decrease of wrinkles volume (mm<sup>3</sup>) by laser profilometry. Test conducted on 26 volunteers during 28 days.

## *In vivo* Visible results

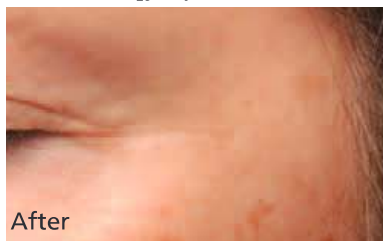
Hema'Tite™ offers truly visible results on the skin of volunteers. The following pictures shows the smoothing effect of Hema'Tite™ at day<sub>28</sub> versus day<sub>0</sub>.

**Results showed an average decrease of 13% of wrinkle volume.**

Example 1: Decrease of wrinkle volume (mm<sup>3</sup>) D<sub>28</sub> - D<sub>0</sub>: -75%



Before



After

Example 2: Decrease of wrinkle volume (mm<sup>3</sup>) D<sub>28</sub> - D<sub>0</sub>: -33%



Before



After

A real alternative to Retinol, Hema'Tite™ offers a complete anti-aging solution, acting on both the epidermis and dermis and improving the dermal architecture.



*Cosmetic jewels, alluring skincare, mineral attraction,  
precious and innovative active ingredients act as muses  
for all whims and fuel fantasies of eternal  
youth and supreme beauty...*



Hema'Tite™

## Hema'Tite™ the beauty talisman

*"Spa, Luxury and  
Mineral" being key  
concepts in the beauty  
world, **Stone Extracts**  
are ideally used  
in **skincare formula**.*

*Formulators,  
the jewellers of youth,  
are already tailor  
cutting this **precious  
material** to create  
refined products and  
tomorrow's cosmetic  
treasures.*

With its stimulating action on collagen synthesis, **Hema'Tite™** is aimed at top-of-the-range rejuvenating skincare products. A genuine jewel of a treatment, **Hema'Tite™**, through its renewing power, slows down the skin's ageing process.

This innovative active ingredient helps to **optimise production** of good quality and functional collagen, helping **fill wrinkles** in-depth, for a plumping up effect on the skin.

An original ingredient, found within the very heart of Mother Nature, **Hema'Tite™** restores the skin's texture and tone. It is particularly recommended for smoothing or renewing treatments, bringing the energy of the earth to the protection of youthfulness.

# Precious Day Cream MM 8258/A

Ingredients	INCI designation	% W/W	Fonction
<b>Phase I</b>			
EMULIUM® DELTA (1)	CETYL ALCOHOL (AND) GLYCERYL STEARATE (AND) PEG-75 STEARATE (AND) CETETH-20 (AND) STEARATE-20	4.00	O/W emulsifier
CETEARYL ALCOHOL	CETEARYL ALCOHOL	2.00	Thickener
DPPG (1)	PROPYLENE GLYCOL DIPELARGONATE	5.00	Emollient
DOW CORNING 200 FLUID 100 CS (2)	DIMETHICONE	2.00	Feeling agent
LABRAFAC™ CC (1)	CAPRYLIC/CAPRIC TRIGLYCERIDE	3.00	Emollient
VITAMIN E ACETATE (3)	TOCOPHERYL ACETATE	0.50	F.R. scavenger
PHENONIP (4)	PHENOXYETHANOL (AND) METHYLPARABEN (AND) BUTYLPARABEN (AND) ETHYLPARABEN (AND) PROPYLPARABEN	0.70	Preservative
<b>Phase II</b>			
GLYCERIN	GLYCERIN	2.00	Moisturizer
DEMINERALIZED WATER	WATER	76.45	
CARBOPOL ULTREZ 20 (5)	ACRYLATE/C10-30 ALKYL ACRYLATE CROSSPOLYMER	0.15	Gelling agent
RHODICARE S (6)	XANTAN GUM	0.30	Gelling agent
<b>Phase III</b>			
SODIUM HYDROXIDE (10% SOL.)	SODIUM HYDROXIDE	0.30	Neutralizing agent
<b>Phase IV</b>			
BUTYLENE GLYCOL	BUTYLENE GLYCOL	2.00	Moisturizer
CHLORPHENESIN	CHLORPHENESIN	0.20	Preservative
<b>Phase V</b>			
HEMA'TITE™ (7)	HEMATITE EXTRACT	1.00	Mineral active
F.D.C. RED N°4 W 084 (0.1% SOL.) (8)	CI 14700	0.20	Dye
<b>Phase VI</b>			
PERFUME FRAIS 4164 (9)		0.20	Perfume
		100.00	

**Appearance:** Pale pink and bright cream

## Manufacturing Process

Sprinkle Carbopol over water + Glycerin of II, then disperse Rhodicare under mixing. Leave to stand.

Under stirring, add I heated to 75°C to II heated to 75°C.

Maintain under rapid mixing (Rotor Stator 3000 rpm) for 5-10 min.

Add III.

Cool under normal stirring.

At about 50°C, add IV.

At about 35°C, add V and VI.

Complete cooling.

(1) Gattefossé / (2) Dow Corning / (3) DSM Nutritional Products / (4) Nipa / (5) Noveon / (6) Rhodia / (7) LIBiol / (8) LCW / (9) M.L.W

The information contained in this data sheet is based on the state of our knowledge on the product in question, at the date shown. It is given in good faith. The attention of users is also drawn to the risks which might be incurred when a product is used for purposes other than those for which it is designed. It in no way exempts the user from knowing and applying all the texts regulating his activity. He shall take sole responsibility for the precautions associated with the use he makes of the product.



# Hema'Tite™ Code 5758

## PRODUCT CHARACTERISTICS:

### > Physical

Form	liquid
Color	brown red
Odor	metallic
Solubility	soluble in water and alcohol 95°
pH	3.5 to 6.5
Dry matter	5.5 to 7.5%
Total mineral content	1.5 to 4.0%
Total iron content	0.2 to 1.2 g/100g

### > Chemical

Preservative	phenoxyethanol (0.4%) sorbic acid (0.1%) packed under nitrogen
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### > Bacteriological

Total aerobic organisms	< 100 germs/g
Pathogenic organisms	none

### > Toxicological

Local toxicity on the skin	not classified
Local toxicity on the eyes	not classified
Phototoxicity	without phototoxic effect
Sensitization	without allergic effect
Photosensitization	without photoallergic effect
Systemic toxicity	not classified
Mutagenic effect (Ames test)	without mutagenic effect

### > Suggested level of use

Between 0.5 and 2%

### > Storage conditions

At room temperature and away from light and air

### > Re-evaluation date

1 year from manufacturing date

INCI EU	INCI USA	EINECS	CAS	Japan/
<b>Australia</b>				
HEMATITE	HEMATITE EXTRACT	215-275-4	1317-60-8	Approved for cosmetic use