



Yeast Beauty Mask based on polymers of biotechnological origin



In partnership with



Lallemand's history

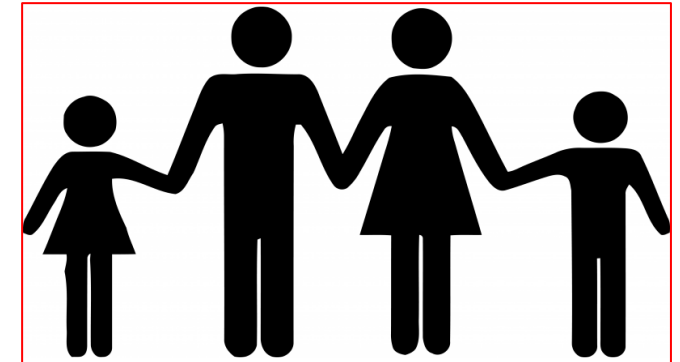
Founded in Montréal by Fred A. Lallemand at the end of the **19th century**



Yeast production in Montréal started in **1923**



Family company: owned by the Chagnon family since **1952**



Lallemand's initial focus, was the baking industry, producing and marketing **fresh yeast** in Canada

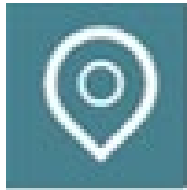
Microbiological transformation is everywhere



Lallemand is specialized in the **development, production and marketing of yeasts, bacteria and their derivatives or secondary metabolites** for various industries.

Key to success of Lallemand company

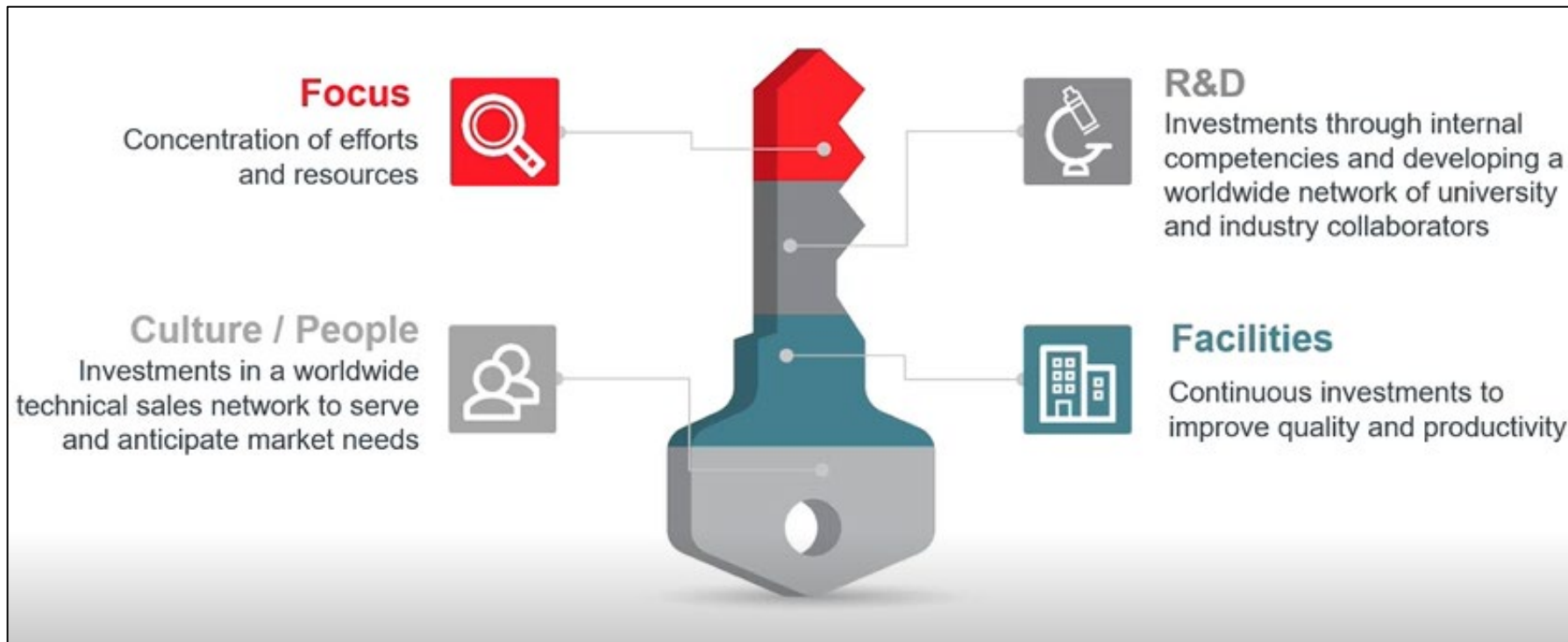
A diverse, global presence, with more than **5'000 employees**



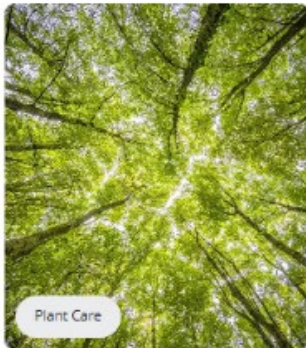
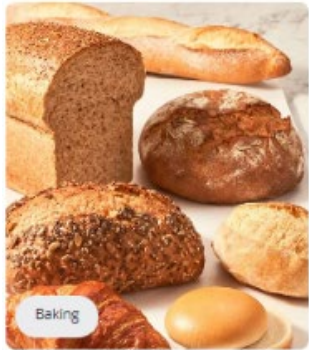
50 countries, on **5 continents**



+ 300 in **research and development**



Solutions and know-how far a world microorganisms



10 technically business units focused on various yeast and bacteria applications :

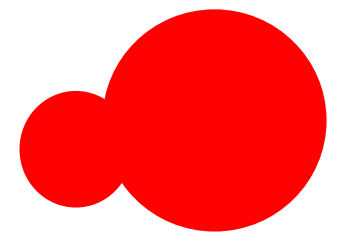
- Baking
- Animal Nutrition
- Health Solutions
- Oenology
- Biofuels and Distilled Spirits
- Plant Care
- **Bio-Ingredients**
- Specialty Cultures
- Pharma
- Brewing



Learn more on www.lallemand.com

LALLEMAND

Case study : personal care project



Trend towards ecoresponsible cosmetics using natural and innovative active ingredients.



Developing a beauty mask with an active biofilm that makes the most of ingredients derived from biotechnology.

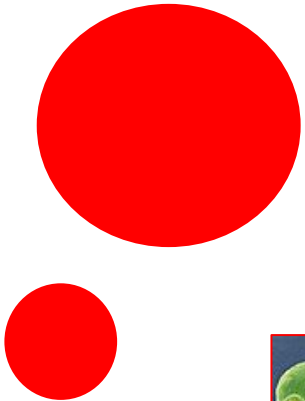


Complementarity between public & private research



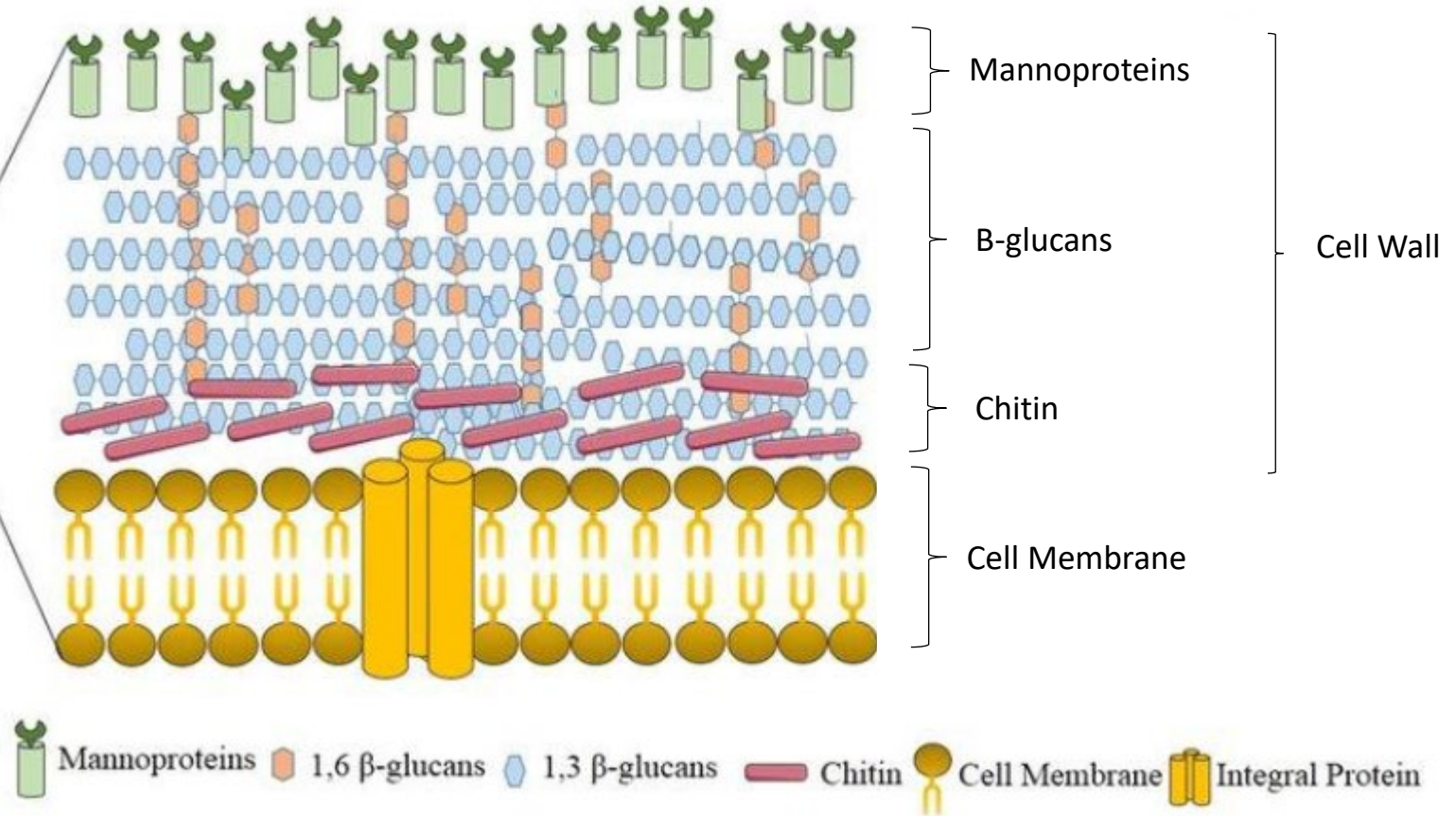
Yeast : Key ingredient for biofilm

β -glucans structure, protect and ensure yeast permeability



Saccharomyces Cerevisiae

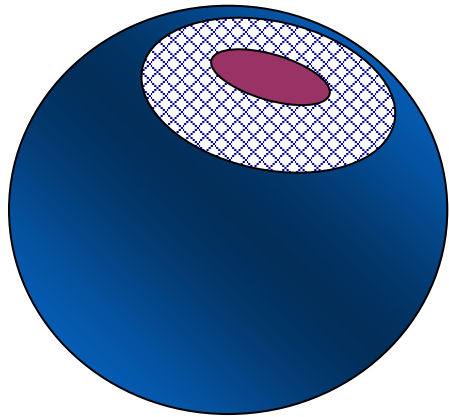
Yeast cell



Beta-glucan from yeast

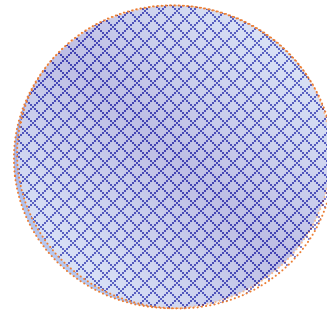
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Yeast cells



*Chemical
extraction/
washing*

Purified β -glucan



Lallskin® B-glucan



*Yeast beauty
mask*



Study of solubility and functional properties of different form :

- Fresh yeast
- Dry yeast
- Powder and yeast cell wall extract
- Hydrolysate powder
- Powder of β -glucan



Tech NATURE
PRIVATE LABEL MANUFACTURER
FRANCE

Beta-glucan : a wide range of efficacy



Supporting the defense mechanism
of the skin's bacterial flora

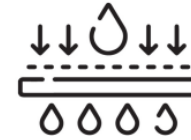


Protecting
against skin irritations

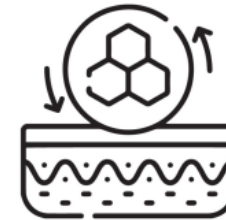


Soothing skin inflammations

+ 20 Scientific
Papers on
soluble form



Moisturizing



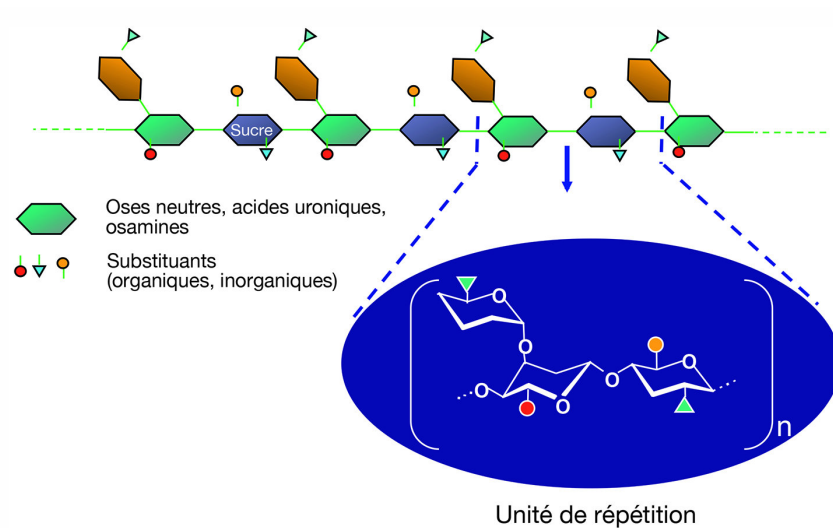
Increasing the
production of collagen



Increasing elasticity

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Sulfated EPS : Active biopolymer from bacteria



Chemical

Carbohydrate content (EPS)
Protein Content (Purity)
Composition in monosaccharides
Ect...

Rheological

Molecular weight (Mw. Ip)

Biological

Anti-biofilm
Moisturizing
Anti-pollution
Anti-ageing
Ect...

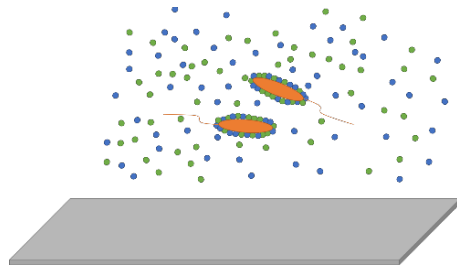
- Bacterial (Exo) PolySaccharides (EPS): **released in the culture medium**
- Complex monosaccharidic composition with **up to 10 to 12 sugars** constituting the repeating unit (monomer)
- Linear, branched or multibranched biopolymers

Efficacy with biofilm formation

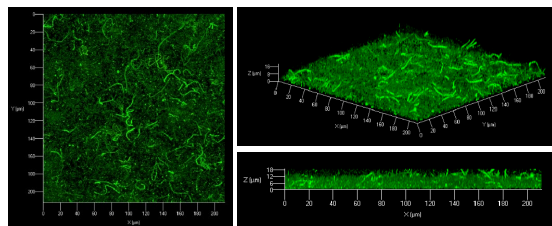
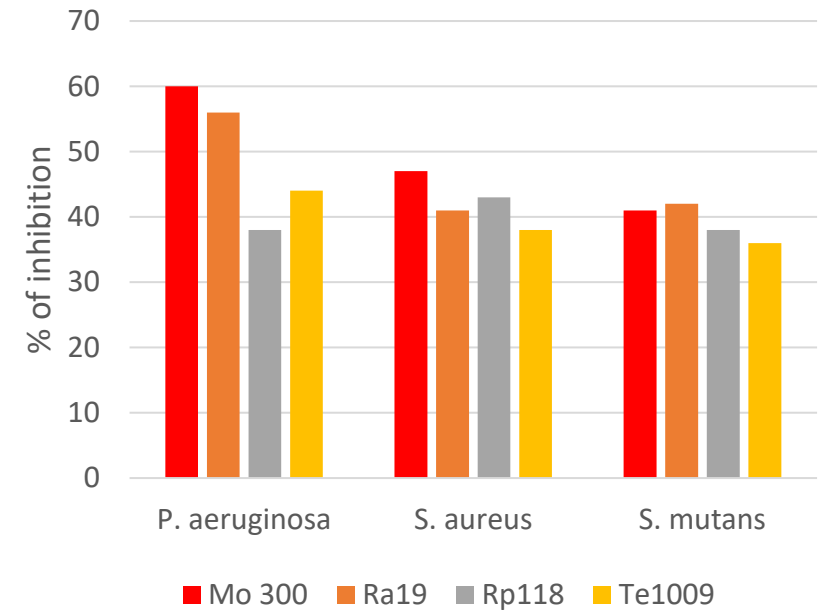
Flow cells (Confocal Laser Microscopy) EPS vs HA

EPS vs Hyaluronic Acid cc 125 mg/l
Pseudomonas aeruginosa sp. PaO1

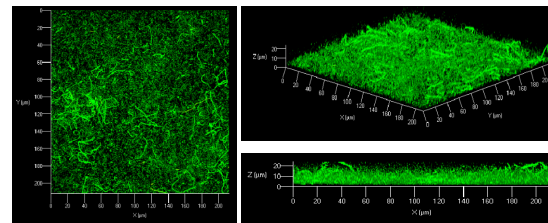
Condition 1: « EPS + Bacteria » prior to adhesion test



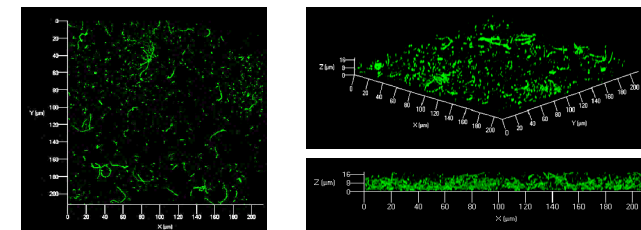
Effect of EPS (100ppm) as antibiofilm player



Without EPS



+ HA



+ EPS

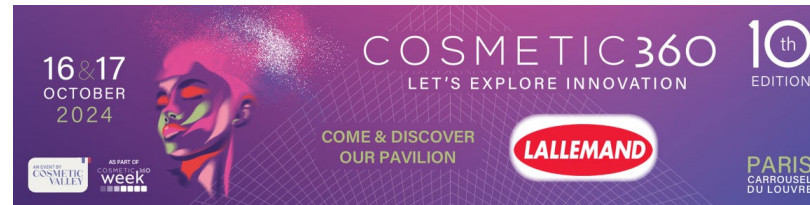
Thank You !

**DREAM BIG,
SUCCEED TOGETHER**



**YOUR PARTNER FOR
BIOTECHNOLOGY
ACTIVE INGREDIENTS**

Carrousel du Louvre
16 & 17 october



Let's meet at Booth #11 and #FA34



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