

Efficient eukaryotic expression system of high-quality mRNA of therapeutic and medical interest



HEALTH
BIOTECH

LARGE-SCALE BIOPRODUCTION SYSTEM OF THERAPEUTIC mRNA

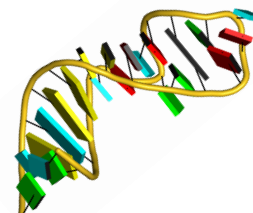
Engineered yeast strains have been developed to enable targeting and accumulation of large quantities of exogenous mRNA of interest in individualized intracellular vesicles that allow easy mRNA purification.

These vesicles accumulate within the modified yeast, and store large quantities of the exogenous mRNA that is targeted there thanks to specifically-designed genetic modifications of the yeast.

The bioproduced mRNA exhibits all features of a eukaryotic mRNA, such as a long 3' Poly-A tail and a strong 5' cap.

The bioproduced mRNA shows higher translation rates than similar commercially available synthetic mRNAs, for high protein production.

The yeast strains are easy to grow and the production capacity is versatile and can easily be up-scaled.



#Keywords

Therapeutic mRNA
Eukaryotic bioproduction system
Vaccines
Gene therapy

Research Team

Prof Chantal PICHON,
Lab. of Cell Biology and Innovative Therapies

University of Orleans and
Centre de Biophysique Moléculaire
CNRS UPR4301
45071 ORLEANS CEDEX 2 - FRANCE

Partnership

Licensing or co-development

Intellectual Property

- Priority filing FR 17/52309, 21 March 2017
- Yeast strains registered at the International
Depository Authority, Paris

Competitive Advantages

Therapeutic mRNA bioproduced by our technology exhibits all properties of mammalian RNA with significant advantages:

- a long 3' poly-A tail that allows efficient translation and enhanced stability
- a functional 5' cap favors mRNA splicing, stabilization, transport & translation

These two features together exert a profound positive synergistic effect on efficiency of mRNA translation into the desired protein.

Our mRNA bioproduction technology comes with significant upsides:

- Easy purification of pure mRNA
- Possible scale-up in large incubators to produce large mRNA quantities
- Any type of RNA can be produced, up to 5000 bp
- High yield allows a cost-effective synthesis
- Rapid yeast growth for fast availability of the mRNA of interest

Development Status

- Genetically engineered producing yeast cells available
- Demonstrated higher RNA expression in dendritic cells than synthetic RNA
- High RNA yield

Business Opportunities

- High capacity and versatile bioproduction of mRNA of therapeutic interest
- Multi-stage development of mRNA of increasing quality for R&D and medical applications
- Suitable for all mRNA-based gene therapy indications, including vaccination for oncology and infectious diseases

SATT
GRAND CENTRE

SOCIÉTÉ
D'ACCÉLÉRATION
DU TRANSFERT
DE TECHNOLOGIE

Contact

Magali **GRANGER**
Business Developer
T. +33 (0)6 34 22 36 89
magali.granger@sattgc.com

SATT Grand Centre

CLERMONT-FERRAND | LA ROCHELLE | LIMOGES |
ORLÉANS | POITIERS | TOURS

Head Office : 8, rue Pablo Picasso
63000 CLERMONT-FERRAND - FRANCE

www.sattgc.com