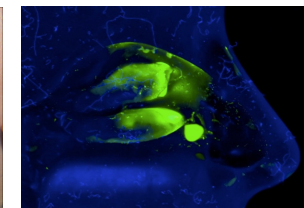
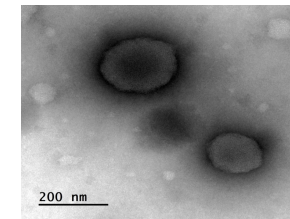
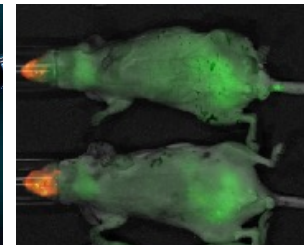
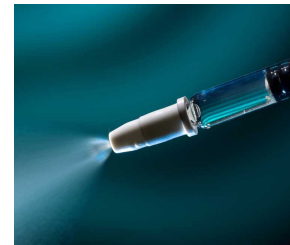


Nasal Sub-Unit Vaccine Platform for the Future

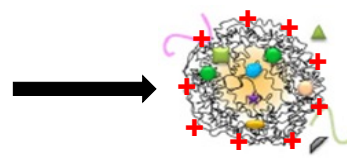
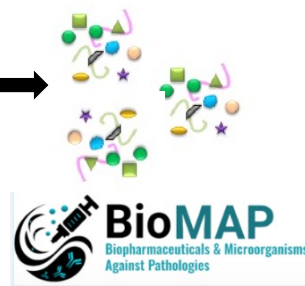


First nasal sub-unit vaccine : toxoplasmosis

Nanoparticles



Toxoplasma antigens



PRIME
1st immunisation

3 weeks

2 nasal vaccinations

BOOST
2nd immunisation

3 weeks

Infection
Immune response study

Blood samples
3 weeks post prime

Blood samples
1 week post boost

Rodents



100% survival

Sheep



>96% reduction
infectious load

Initiation of a wildlife protection program

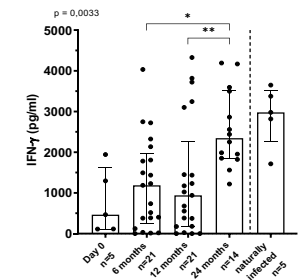
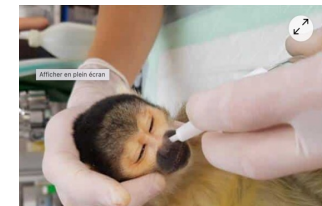


Non-human primates
Zoo Worldwide

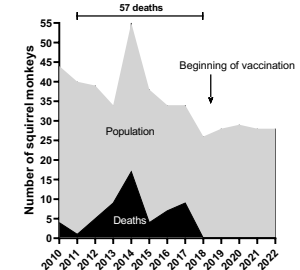
Optimal tolerance
Full protection for 8 years

Since 2017, vaccination campaigns have been carried out in 24 zoos around the world (600 primates).

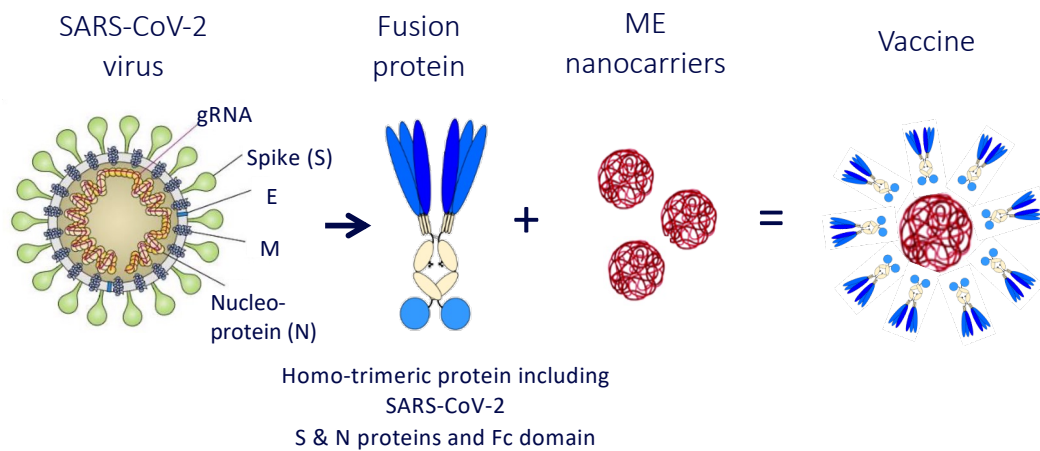
Dimier-Poisson et al, *Biomaterials*, 2015
Ducournau et al; *Future Microbiol*, 2017
Ducournau et al; *Front Immunol*, 2020
Ducournau et al; *IJP*, 2023



2



Second nasal sub-unit vaccine : COVID-19



npj | vaccines

Published in partnership with the Sealy Institute for Vaccine Sciences

Article



<https://doi.org/10.1038/s41541-025-01123-y>

Intranasal spike and nucleoprotein fusion protein-based vaccine provides cross-protection and reduced transmission against SARS-CoV-2 variants

First in Human Trial (MUCOBOOST)

<https://clinicaltrials.gov/study/NCT06821126>

Phase I/II multi-center trial

Tours, Cochin, St Etienne, Lyon & Dijon
238 volunteers with full vaccine scheme

Started Q2 2025

1 booster dose

Phase 1: safety (3 dose levels)

Phase 2: superiority vs mRNA vaccine
in terms of mucosal immunity

Approved by EMA

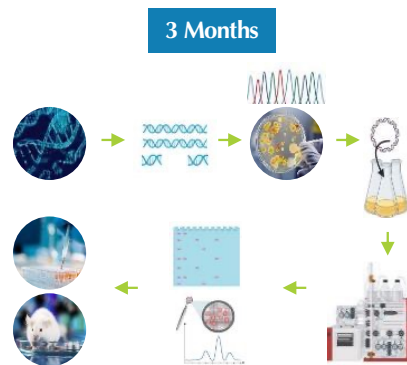


Our Solution - A scalable intranasal vaccine technology platform

The 3 pillars of our scientific approach

BIOMAP
BIOpharmaceuticals & Microorganisms Against Pathologies
Vaccine proteins

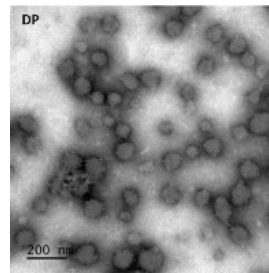
Rapid Proprietary **Protein**
Engineering Process



- Highly conserved epitopes
- Internal proteins
- Broad spectrum
- Improved vaccine efficacy against variants/strains/infectious forms...

lovaltech
Muco-excipient

Biocompatible &
Biodegradable
Muco-Excipient



First mucoadhesive excipient
in the world to receive marketing
authorization
for nasal vaccine candidates

- Ensuring that the vaccine protein crosses the epithelium barrier
- No clearance by mucociliary removal
- Enhancing immunogenicity in the mucosa
- High safety profil
- High loading capacity

Aptar
pharma
Medical device

Intranasal Delivery system

Dedicated
Medical
Device



Established
Collaboration
with Aptar
Pharma



- Easy to administer
- Non invasive

Malaria Nasal vaccine

BioMAP souhaite renforcer des collaborations avec les équipes de l'AC Paludisme, en particulier autour des **antigènes vaccinaux** :

- Équipes disposant d'**antigènes validés** (pré-érythrocytaires, érythrocytaires ou multi-stades)
- Antigènes déjà caractérisés **in vitro / in vivo**

Expertises complémentaires recherchées

- Immunologie du foie et des stades hépatiques
- Modèles murins ou précliniques paludisme
- Corrélat de protection

Apports BioMAP

- Plateforme **vaccinale intranasale** validée
- Muco-excipient propriétaire favorisant l'induction de réponses cellulaires systémiques et hépatiques
- Capacité de passage **préclinique → clinique**

Objectif : Construire des projets collaboratifs AC Palu

Thank you for your attention

