



# CORPORATE PRESENTATION

## November 6th, Lyon



# Signia Therapeutics origin

Signia Therapeutics has been incorporated in April 2017 as spinoff of various public hospital and research labs in French and Quebec



**19<sup>e</sup> CONCOURS NATIONAL**  
D'AIDE À LA CRÉATION D'ENTREPRISES  
DE TECHNOLOGIES INNOVANTES



MINISTÈRE  
DE L'ENSEIGNEMENT SUPÉRIEUR,  
DE LA RECHERCHE  
ET DE L'INNOVATION

avec  
**bpi**france



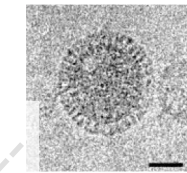
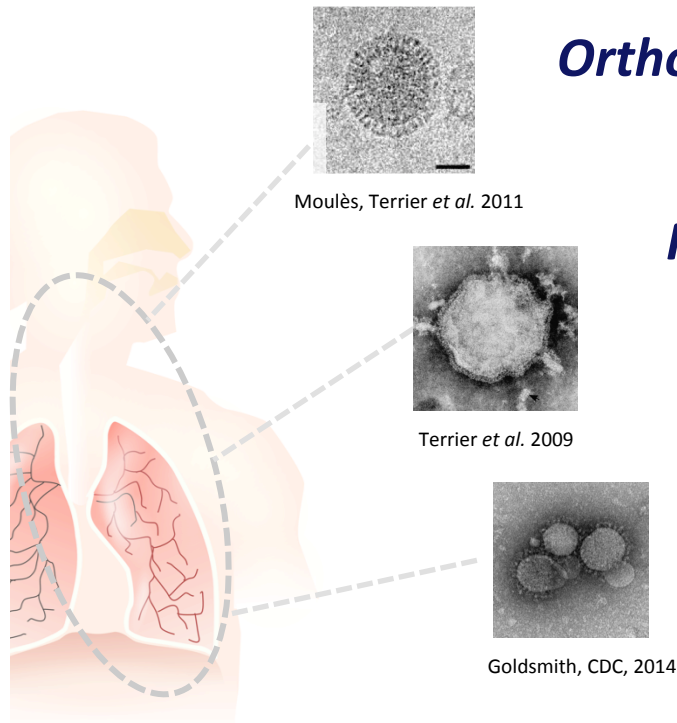
*Certificate delivered by the European Commission,  
as the institution managing Horizon 2020,  
the EU Framework Programme for Research and Innovation 2014-2020*



# Acute Respiratory Infections : a Major Health Stake

Main cause of acute diseases worldwide

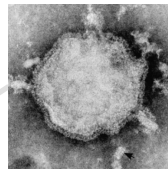
1st cause of deaths in newborns and young children (2 million deaths/year)



Moulès, Terrier *et al.* 2011

## ***Orthomyxoviridae***

Influenza Virus (Types A/B)



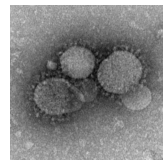
Terrier *et al.* 2009

## ***Paramyxoviridae***

Human Parainfluenza Virus (hPIV Types 1 à 4)

Human Metapneumovirus (hMPV)

Respiratory Syncytial Virus (RSV)



Goldsmith, CDC, 2014

## ***Coronaviridae***

SARS-CoV

MERS-CoV

**A deficient therapeutic arsenal - New strategies are needed**

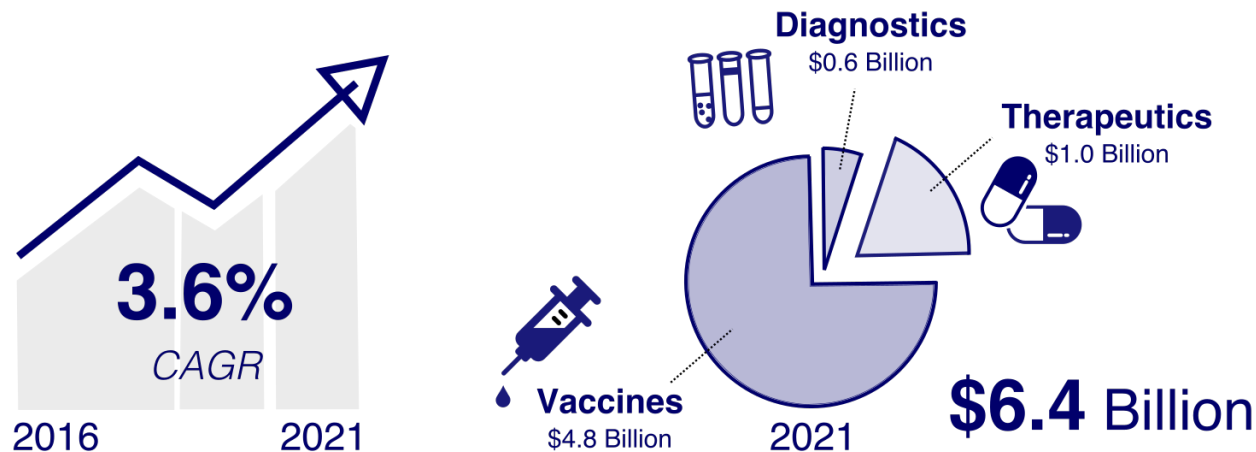
# Flu: Unmet Medical Needs - Market

## Deficient prophylactic and therapeutic arsenal

- Current vaccine with 60 - 80% effectiveness ( $\leq 40\%$  elderly – strain mismatch)
- 6 months needed for production/delivery
- Limited target population and efficacy of NA inhibitors
- **Loss of IP for the gold standard Tamiflu**
- **Single-point resistance mutations threaten the utility of NAIs**



## Global Flu Market



# Pneumoviruses: Unmet Medical Needs - Market

## Pneumoviruses (RSV, hMPV) incidence

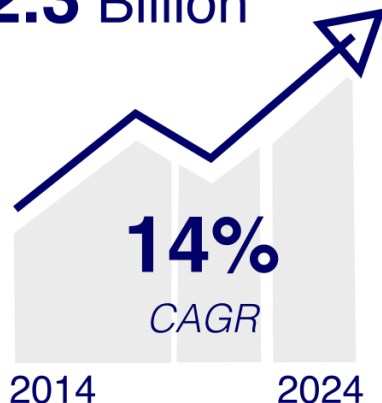
- 50 million infected/year (US + EU + Asia)
- 4 million infected children  $\leq 4$  years (1-2% of deaths)
- \$10 billion direct cost burden (\$80 billion indirect)



- **No marketed vaccine**
- **No marketed specific antiviral**
- **No host-targeted therapeutic approaches**

### Global RSV Market

**\$2.3 Billion**



#### Prophylactic Mabs

Synagis (MedImmune)  
MEDI8897 (MedImmune)  
REGN2222 (Regeneron)



#### Vaccines

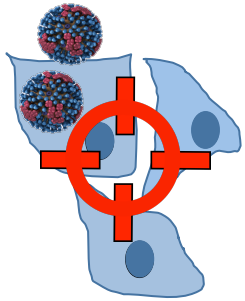
RSV-F Vaccine (Novavax)  
GSK3003891A (GSK)



#### Therapeutics

JNJ-678 (Janssen)  
ALS-8176 (Janssen)  
GS-5806 (GILEAD)  
ALX-0171 (Ablynx)

# An Innovative Approach Based on Three Key Pillars



- **Target host cell rather than viral determinants**

Limitation of viral resistance (more conserved targets)

Suitable for acute infections

Broad spectrum antiviral potential



- **Global gene expression profiling**

Infection / treatment associated transcriptomic signatures

De-risking vs. host pathway redundancy/unknowledge

Insights on new potential MoA

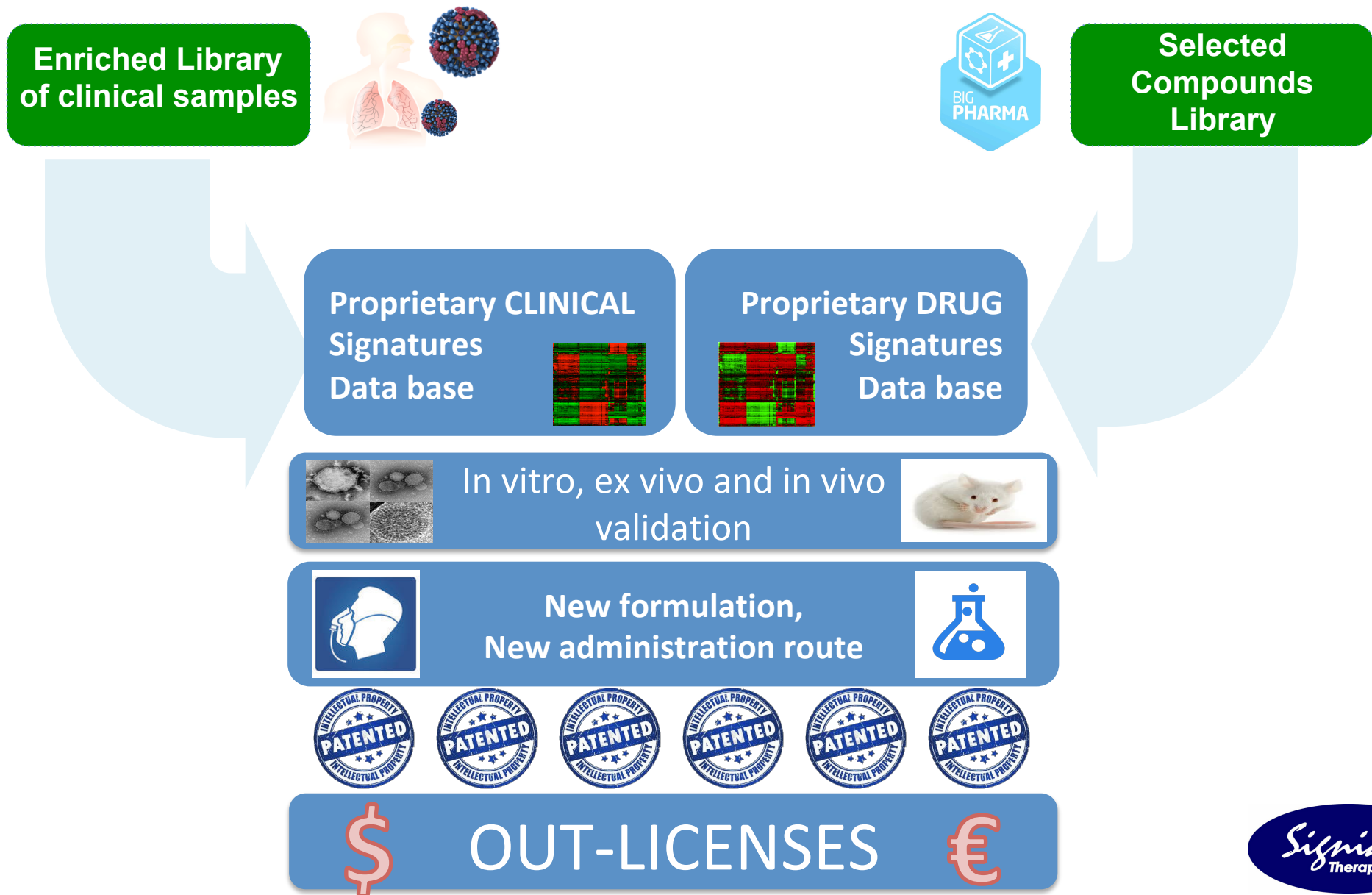


- **Drug repurposing/Recycling**

Polypharmacology: “One-drug-multiple-targets”

New life for existing drugs !

# Development process and value creation





# Signia Therapeutics portfolio

Molecule	Pat. Nr.	Indication	Dev. Stage
Diltiazem	WO2016/146836	Flu (*)	Clinical Ph II (oral)
Etilefrine	WO2016/146836	Flu (*)	Preclinical (mice)
Roxithromycine	WO2017/174593	Flu (*)	Invitro/exvivo validation
Sulfa(di)methoxine	WO2017/174593	Flu (*)	Invitro/exvivo validation
Apigenine	WO2018/073549	MERS-CoV (*)	Invitro/exvivo validation
Berberine	WO2018/073549	MERS-CoV (*)	Invitro/exvivo validation
Diltiazem	FR 18 54307	RSV	Invitro/exvivo validation
Diltiazem	FR 18 54307	hMPV	Invitro/exvivo validation

(\*) patent covers veterinary indications as well



# Signia Therapeutics Team



**Michel Cousineau** (MBA) – **PRESIDENT** - has over 35 years of experience in corporate and business development in the health care sector for emerging companies as well as with subsidiaries of large international biopharmaceutical companies. He brings a vast network of contacts throughout the industry at various level of management and with investment groups.



**Philippe Personne** (Pharm. D) – **C.E.O.** - after more than 20 years in medical and pharmaceutical industry, he recently joined Signia Therapeutics to drive the company into its next stages of development



**Andrés Pizzorno** (Ph.D.) – **PROJECT MANAGER** – after successfully contributed to Signia Therapeutics creation and initial development, as well as establishment of evaluation protocols, he is now fully part of the team in charge of all scientific activities



**Claire Nicolas de Lamballerie** (Ph.D.) – bio data analyst (from March '19)



**Blandine Padey** (R&D engineer) - Ph.D. student



# Conclusion

- Signia Therapeutics proposes an unique, innovative, systemic and validated approach to reposition drugs in new indications
- Indications concentrated on infectious diseases (mostly viral infections), for which very few medical options are available
- As of today, Signia Therapeutics presents :
  - Portfolio of 8 validated molecules in various infectious diseases
  - 4 patents filed
  - 1 ongoing clinical trial Phase IIb

# Conclusion

- Signia Therapeutics has recently signed major agreement with Sanofi :
  - to analyse more than 100 molecules from their portfolio
  - that reached developement stages up to clinical Phase III
  - but never commercialized
- Signia Therapeutics is actively continuing enrichment of portfolio in a low-risk / high-return strategy,
- And looking for business partners in pharma industry