

## A COMPREHENSIVE IMMUNOTHERAPEUTIC PLATFORM

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> **NANOBODIES** LIBRARY

- Synthetic humanized nanobodies library
- Screening and selection of nanobodies in less than 6 months
- Engineering of the biochemical properties including affinity and stability to:
- Generate proprietary receptors for CAR & TCR-based therapies
- Identify checkpoint inhibitors
- Screen tumor antigens
- Low molecular weight compatible with a vectorization within lentiviral vectors

#### LENTIVIRAL VECTORS

- Optimized for DC stimulation
- Deliver multiple & complex antigenic proteins
- Allow Prime & Boost
- Demonstrated human safety
- Demonstrated human immunogenicity: induction of an intense, broad & longlasting immune response
- Applicable to Oncology & Infectious Diseases

## CAR | TCR

- Lentiviral vectors: tools of reference for T-cell & NK-cell transduction
- Optimized & patented promoter for better receptor expression
- Reversible (ON/OFF) technology
- Clinical scale automated and sterile cell processing system
- GMP premises for patient cell-processing

# MANUFACTURING & QUALITY **CONTROL**

- facilities

- On-site Fill & Finish including vector lyophilization
- Up to 24 active batches per year, operated in-house

# **GMP**

- Biosafety level 3 GMP production

- Serum-free stable packaging cell line

- Single-use process equipments including up to 1000 L bioreactors

- Fully-internalized quality controls

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### ONGOING CLINICAL DEVELOPMENTS

Due to the flexibility of its core lentiviral-vector platform, THERAVECTYS has initiated in 2014 an ambitious R&D program to develop a number of therapeutic vaccine candidates against cancers and major global infectious diseases.

INFECTIOUS DISEASES	Pre- clinical	Phase I	Phase II
Therapeutic anti-HIV			
Therapeutic MDR Tuberculosis			
Therapeutic anti-HBV			

OTHER IMMUNOTHERAPIES	Pre- clinical	Phase I
CAR: CLL & ALL (CD19)		
CAR: AML (CD33-CD123)		
Anti-checkpoint: PD1, PDL1, CTLA4		

ONCOLOGY	Pre- clinical	Phase I	Tumors	Synergies
HTLV-1 virally-induced Leukemia (ATLL)		-*	liquid	
HPV virally-induced cancer (ENT & cervix)			solid	anti-checkpoint
EBV virally-induced cancer (NPC)			liquid & solid	
Bladder cancer			solid	anti-checkpoint
Renal cell carcinoma (RCC)			solid	anti-checkpoint
Prostate cancer			solid	anti-checkpoint
Melanoma			solid	anti-checkpoint
Ovarian cancer			solid	anti-checkpoint
Breast Cancer	*		solid	anti-checkpoint
Glioblastoma multiform (GBM)			solid	anti-checkpoint
Mutliple myeloma			liquid	anti-checkpoint
Hepatocellular carcinoma (HCC)			solid	anti-checkpoint
Colorectal cancer			solid	anti-checkpoint

## NEXT STEPS

THERAVECTYS has recently achieved the human proof-of-concept of its lentiviralvector technology with a recently completed phase I/II study of a therapeutic vaccine against HIV.

The company is now advancing further therapeutic vaccine candidates into the clinics, both in oncology & infection diseases.

THERAVECTYS first oncology clinical trial will target Adult T-cell Leukemia/ Lymphoma virally-induced by HTLV-1 and will enter the clinics in 2015.

This program will be closely followed by a number of the rapeutic vaccine candidates in a variety of virally-induced, liquid and solid forms of cancers, including at least one candidate based on the company's proprietary inducible CAR technology.