

OSE IMMUNO
THERAPEUTICS



CANCER AND
AUTOIMMUNE DISEASES

**WE ARE ARMED
TO FIGHT!**

April 5, 2018



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FIRST-IN-CLASS PORTFOLIO IN IMMUNO-ONCOLOGY AND AUTO-IMMUNE

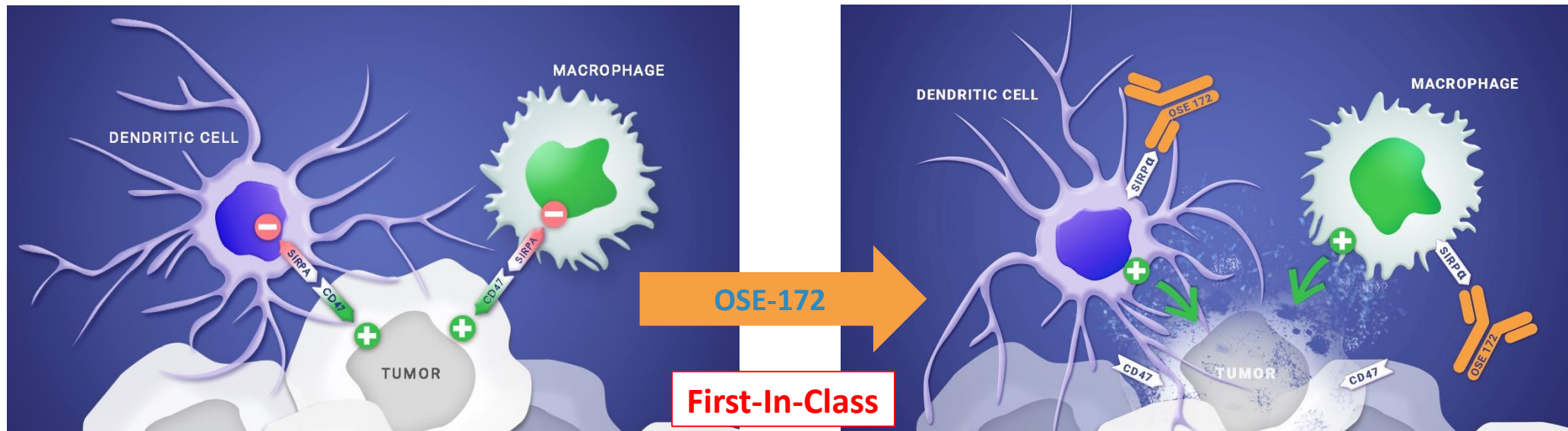
PROGRAM	Indication	Humanized lead	Pre-Clinical POC	Phase 1	Phase 2	Phase 3
IMMUNO-ONCOLOGY						
Tedopi®	NSCLC					EU-US-Isr
Tedopi®	Advanced pancreatic				2018 Combo with PD1	
OSE-172 ✨	Various cancers			2018	 Boehringer Ingelheim	
OSE-703 ✨	Various cancers		2018	 Memorial Sloan Kettering Cancer Center.		
AUTO-IMMUNE DISEASES						
FR104 ✨	Rheumatoid arthritis				2018	
OSE-127 ✨	UC Sjögren			2018		

✨ First-in-class products



OSE-172: TACKLES MYELOID SUPPRESSIVE CELLS (MDSC, TAM)

ACTIVATES ANTI-TUMOR MACROPHAGES AND DENDRITIC CELLS FUNCTION



**OSE IMMUNOTHERAPEUTICS DISCOVERY: SIRPA IS EXPRESSED BY MDSC AND TAMs AND CONTROLS THEIR DIFFERENTIATION
STRONG PATENT POSITION 2014-2015-2016-2017**

OSE-172 (antagonist of SIRP α) inhibits MDSC and macrophages M2 pro-tumorigenic cells and increases M1 anti-tumorigenic cells. In addition, OSE-172 is not binding human T-cells, allowing strong T-cells proliferation.

24th Molecular Medicine TRI-CONFERENCE, Feb 2017

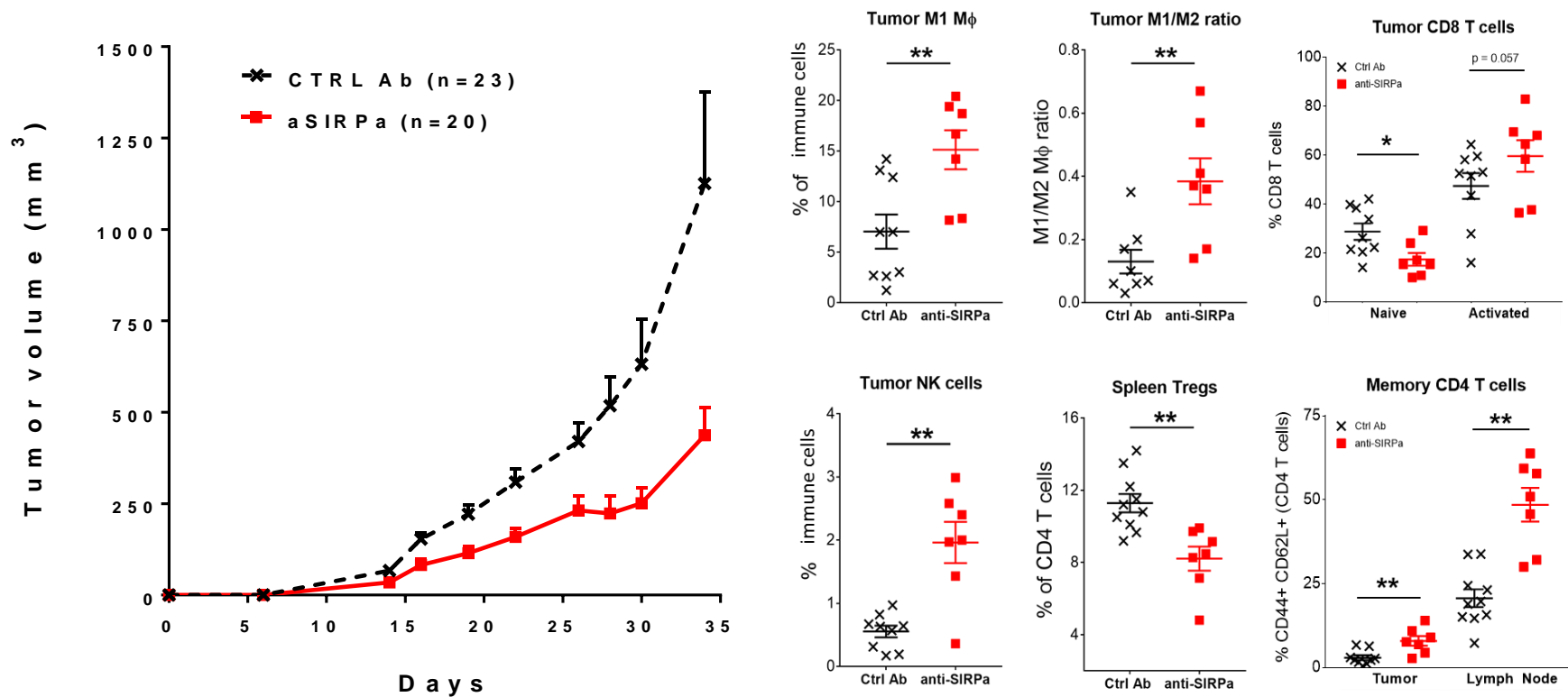


OSE-172: INHIBITS CANCER GROWTH

BREAST TRIPLE NEGATIVE MODEL – MDSC/TAM INVOLVEMENT IN BREAST CANCER*

OSE-172 has demonstrated its impact on the Tumor Micro-Environment by switching M2 pro-tumorigenic macrophages into M1 anti-tumorigenic macrophages whilst increasing effector memory CD8 T cells

ORTHOTOPIC 4T1 MOUSE BREAST CANCER MODEL**



*Tumor-associated macrophages: unwitting accomplices in breast cancer malignancy
[Carly Bess Williams et al.](#); *npj Breast Cancer* (2016)

**AACR 2018 Poster Durand J, Gauttier V et al.



OSE-172: PRODUCT CHARACTERISTICS

CLINICAL PHASE 1/2 PLANNED IN 2018

Lead proprietary Product description

Humanized IgG4 mAb against CD172a (SIRPa) a CKI targeting myeloid cells

Key results from preclinical studies indicated that OSE-172 significantly

- Reversed in vivo tumor immuno-suppressive microenvironment and decreased tumor growth in a Triple Negative Breast Cancer (TNBC) model;
- Inhibited metastasis spread in a TNBC model;
- Synergized survival when combined with PD-1/ PD-L1 blockade in a HepatoCellular Carcinoma (HCC) model, reinforcing the rationale for combination treatment;
- Induced potent memory anti-tumor immune responses when combined;
- Reduced immunosuppressive myeloid cells function from human ovarian cancer ascites in an ex vivo model;
- Bound selectively to SIRPa but does not bind to SIRPy, a human costimulatory receptor required for human T-cell responses;
- Potentiated dendritic cell tumor antigen cross-presentation increasing T-Cell specific activation.

EFFI-CLIN, a collaborative program to evaluate the safety and the clinical efficacy of OSE-172 as a monotherapy and in combination

- **Grant from Bpifrance** to fund this program
- **OSE, leader of the consortium** also including (CESTI), a public organization based in Nantes (France) and HISTALIM, a SME based in Montpellier (France)



A STRATEGIC PARTNER OF CHOICE FOR OSE-172 



**Boehringer
Ingelheim**

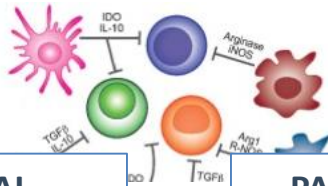
Sales > 16B€

R&D > 3B€

“The objective for the next wave of cancer immunology therapeutics is to alert the immune system (...)”

Jonathon Sedgwick, VP & Global Head, Cancer Immunology Boehringer Ingelheim

COMBINATION POTENTIAL



INTERNAL

Anti-PD1
Anti LAG 3
SMAC mimetics
IL23-i

PARTNERSHIPS

Vira Therapeutics
(*oncolytic viruses*)
CureVac
(*mRNA vaccines*)

GLOBAL EXECUTION CAPABILITIES



GLOBAL FOOTPRINT

Europe
Americas
Asia

COLLABORATION

Sarah Cannon RI
(57 sites in the US)

“We are excited to partner with OSE Immunotherapeutics to develop this promising, novel cancer immunotherapy (...)”

Jonathon Sedgwick, VP & Global Head, Cancer Immunology Boehringer Ingelheim



OSE-172: JOINT DEVELOPMENT AGREEMENT



Global Immuno-oncology Partnership to develop OSE-172

€15 M upfront

*Upfront payment
April 2018*

Up to €15 M

*Short term payments
Initiation of Phase 1*

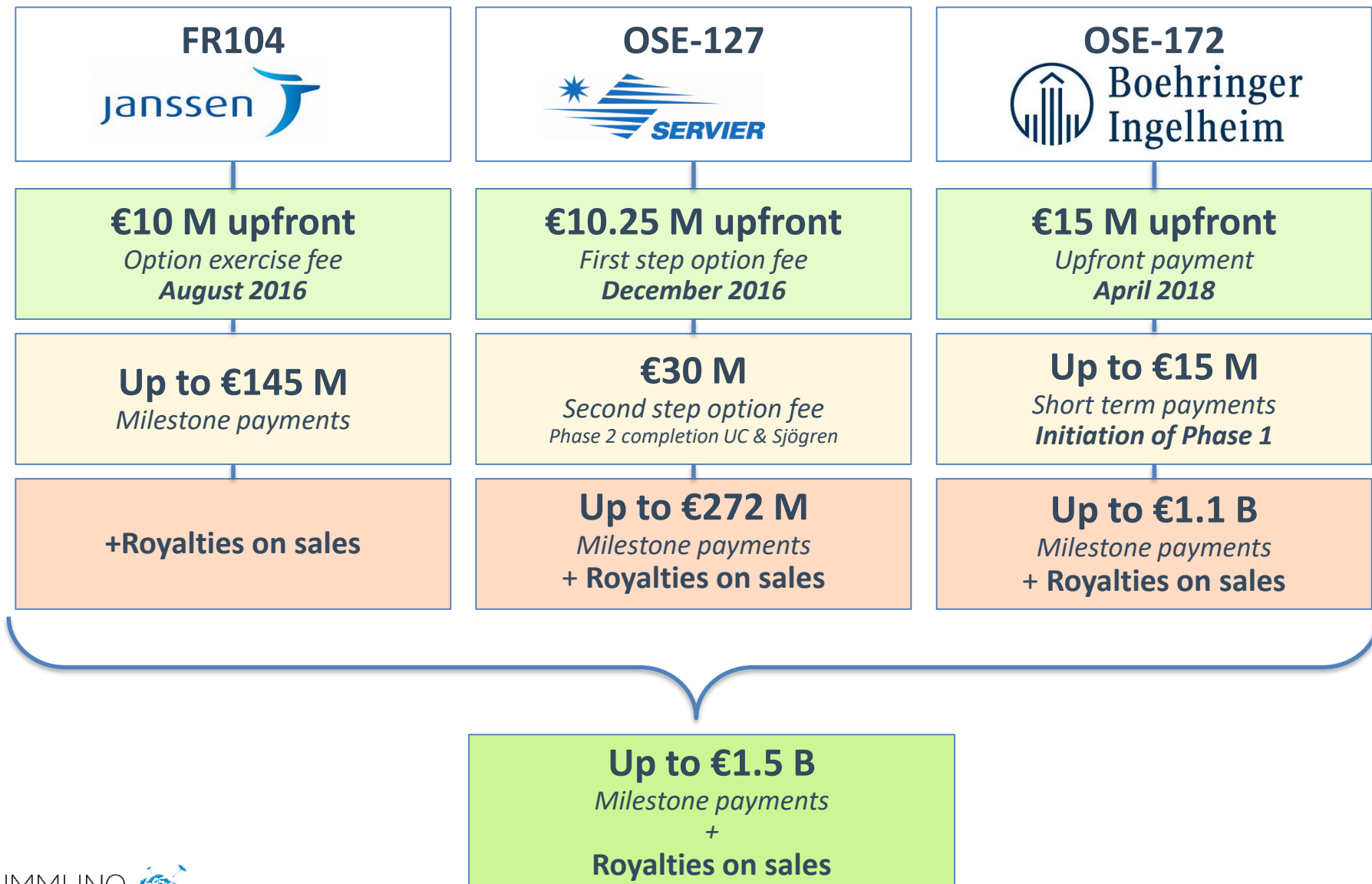
Up to €1.1 B

*Milestone payments
+ Royalties on sales*

Boehringer Ingelheim will bear all costs for this product development and has acquired the rights to develop, register and commercialize OSE-172.



CURRENT INDUSTRIAL PARTNERSHIPS: UP TO €1.5 B IN POTENTIAL MILESTONES + ROYALTIES





PROJECTED CATALYSTS TO DRIVE NEAR TERM VALUE: FOUR PRODUCTS IN CLINICAL PHASE BY END OF 2018

Q1 2018

Tedopi® Phase 3 trial EU- US – Initiation in Israel
Agreement from Agencies to Resume Accrual in Phase 3 Clinical Trial in Advanced NSCLC Patients Following ICI Treatment

Q2 2018

Tedopi® in combination with an ICI in pancreatic cancer
Phase 2 planned with clinical group research GERCOR

Q4 2018

OSE-172: Entry into clinical phase 1/2

Q4 2018

OSE-127: Entry into clinical phase 1
 Servier collaboration

Q4 2018

FR104: Entry into clinical phase 2
 Clinical development by Janssen Biotech

Progress of the portfolio

OSE-703 – MSKCC collaboration

R&D new targets



CANCER AND AUTOIMMUNE DISEASES

OUR AMBITION: TO GIVE YOU
THE POWER TO ACTIVATE
AND REGULATE YOUR OWN CELLS.

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