

ACTIVATING THE PATIENT'S IMMUNE SYSTEM TO FIGHT CANCER

Investor presentation

October 2020

targovax

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TARGOVAX AT A GLANCE

Immune activation

- Addressing high medical need for **immune activators** like oncolytic viruses to enhance cancer immunotherapies

Leader in the field

- ONCOS-102 is one of the **most promising** oncolytic viruses with >200 patients treated
- Encouraging **clinical and immune data** in monotherapy and chemo and checkpoint combos

Value creating opportunities

- Mesothelioma as lead indication in collaboration with Merck
- Potential to enter registrational program in melanoma and colorectal
- Innovative uses of ONCOS backbone as **vector** for delivering transgenes and novel payloads
- Program to fight **mutRAS** cancers through novel oncolytic and vaccination concepts

Rich near term news flow

- Three ongoing combination trials with readouts next 6-12 months
- Pipeline initiatives with possible news the coming 6-12 months

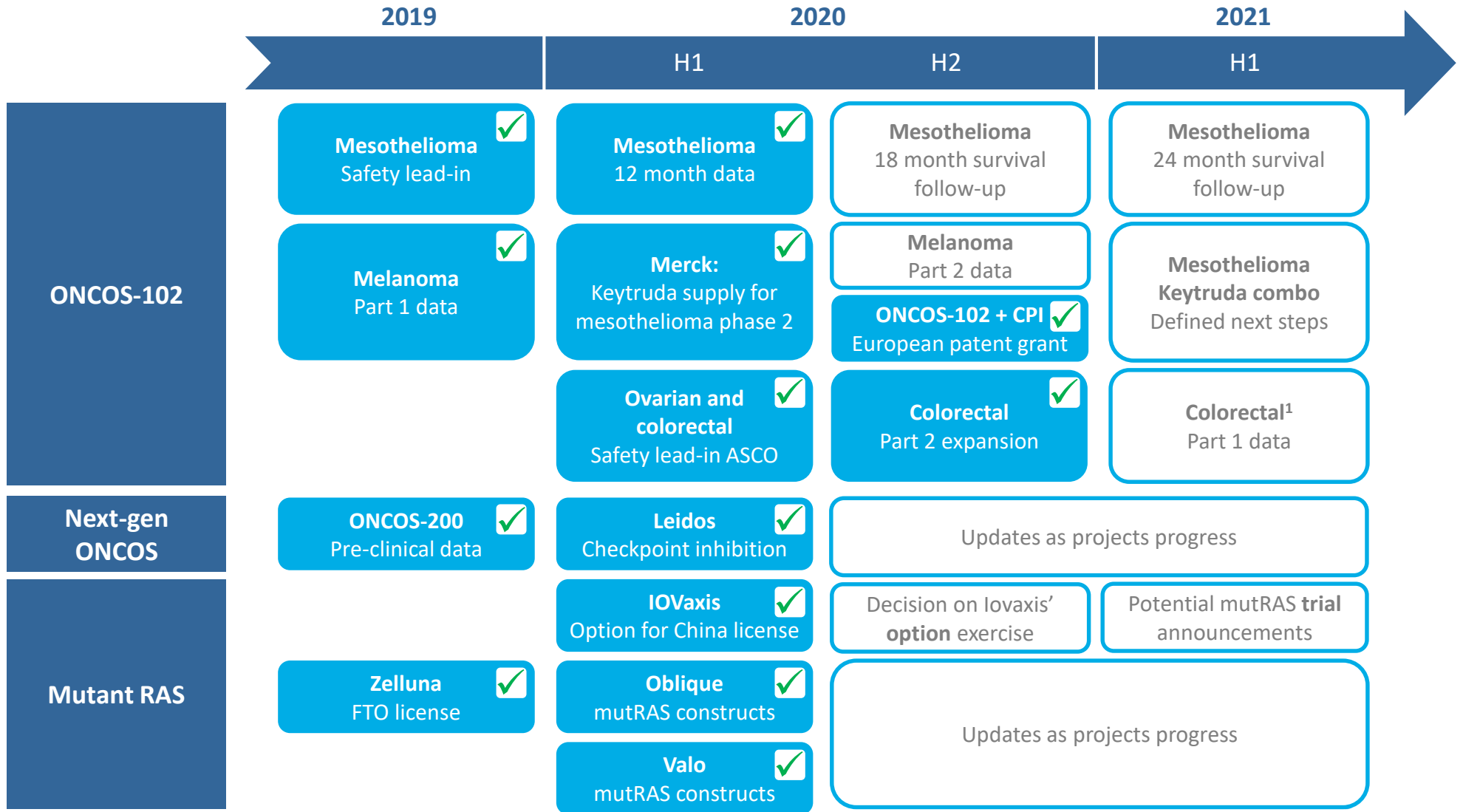
Robust Team

- Seasoned management team with a **track record of success**
- Listed on the Oslo Stock exchange with a market cap of approx. USD 55 million



targovax

TRACK RECORD OF STRONG EXECUTION WITH MULTIPLE UPCOMING VALUE INFLECTION POINTS



GROWING NEED FOR IMMUNE ACTIVATORS

Checkpoint inhibitors are revolutionizing cancer therapy...

...but minority of patients respond...

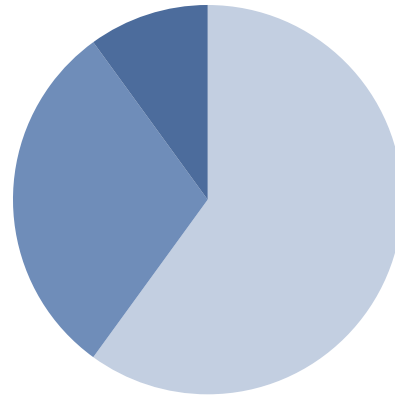
...leading to a high medical need for immune activators

22 bn USD

Global CPI market¹

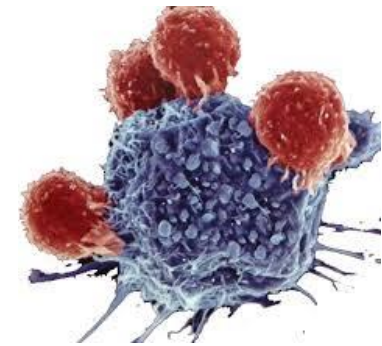
44 %

Patients eligible for CPI²:



10 - 40 %











Responders



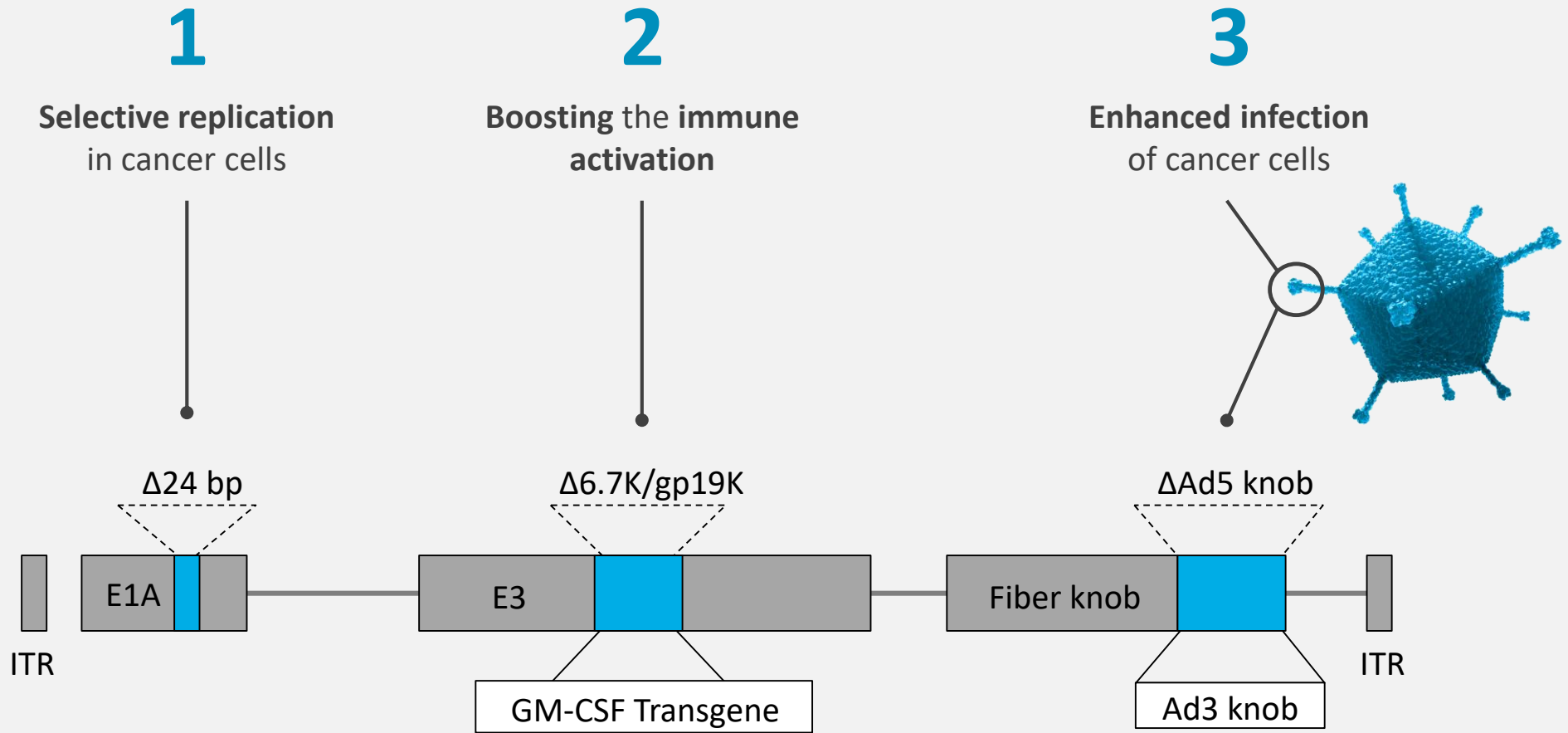
¹ Immune Checkpoint Inhibitors Markets Report, 2020 January, ResearchAndMarkets.com

² Estimation of the Percentage of US Patients With Cancer Who Are Eligible for and Respond to Checkpoint Inhibitor Immunotherapy Drugs, JAMA Netw Open. 2019 May; 2(5), Haslam A., Prasad V.

SEVERAL SIGNIFICANT ONCOLYTIC VIRUS TRANSACTIONS

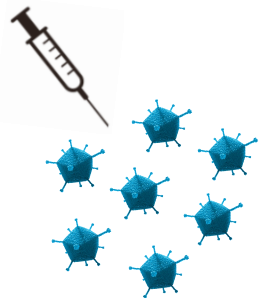
Acquirer	Target	Type of deal	Deal value
		Strategic collaboration Co-development of multiple vaccinia viruses, Pre-clinical	USD 120m near-term USD >900m total value
		M&A RNA virus, Phase II	USD 400m cash acquisition
		M&A Herpes virus, Pre-clinical	USD 140m up-front USD 1b total value
		M&A VSV virus, Pre-clinical	USD 250m cash acquisition
		R&D partnership Co-development of novel vaccinia viruses, Pre-clinical	USD 10m up-front Unknown total value

ONCOS-102 IS AN ONCOLYTIC ADENOVIRUS SEROTYPE 5 ARMED WITH AN IMMUNE ACTIVATING TRANSGENE



ONCOS-102 DRIVES A STRONG IMMUNE RESPONSE TRIGGERING ANTI-TUMOR IMMUNITY

1 Virus injection



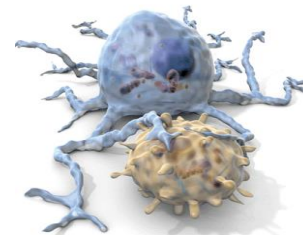
- Intratumoral or intra-peritoneal injection
- Tumor cell infection

2 Immune activation



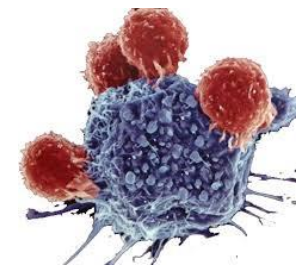
- Oncolysis of tumor cells
- Inflammatory response by TLR-9 and other pathways
- Tumor antigen release

3 T-cell generation



- Antigen processing stimulated by GM-CSF
- T-cell activation in lymph nodes

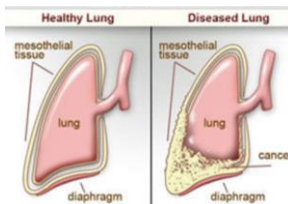
4 Anti-tumor immunity



- T-cell tumor infiltration
- Tumor cell killing
- Synergy with checkpoint inhibitors

ONCOS-102 DEVELOPMENT STRATEGY IS CENTERED AROUND CHECKPOINT INHIBITOR COMBINATIONS

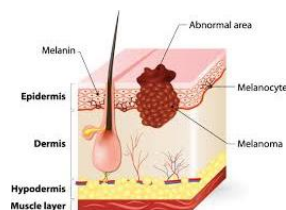
1 Establish path-to-market



Mesothelioma

- ~15.000 patients
- Niche indication, potential for first line

2 Activate refractory tumors



Anti-PD1 refractory melanoma

- Few alternatives for ~50.000 patients
- Competitive indication, serving as benchmarking arena for immune activators

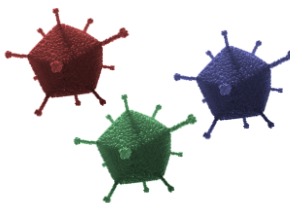
3 Expand CPI indications



Colorectal

- Metastases to the peritoneum
- Up to 100.000 patients not responding to CPIs








4 Expand platform



Next generation oncolytic viruses

- Double transgenes
- Novel targets and modes of action

DEVELOPMENT PROGRAM FOCUSED ON STRATEGIC THERAPEUTIC COMBINATIONS AND PARTNERSHIPS

Product candidate	Preclinical	Phase I	Phase II	Collaborator	Next expected event
ONCOS-102	Mesothelioma Combination w/ pemetrexed/cisplatin			 MERCK	2H 2020 Survival data
	Melanoma Combination w/Keytruda				2H 2020 Part 2 clinical data
	Colorectal Combination w/Imfinzi			 AstraZeneca  CANCER RESEARCH INSTITUTE	Update by collaborator
	Prostate Combination w/DCvac			 Sotio	Update by collaborator
ONCOS-200 series	Next Gen viruses			 leidos	Updates at conferences
Novel mutRAS concepts				 VALO THERAPEUTICS  OBLIQUE THERAPEUTICS	

Product candidate	Preclinical	Phase I	Phase II	Collaborator	Next expected event
ONCOS-102	Mesothelioma Combination w/ pemetrexed/cisplatin				
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	Colorectal Combination w/Imfinzi				
	Prostate Combination w/DCvac				
ONCOS-200 series	Next Gen viruses				
Novel mutRAS concepts					

HIGH NEED FOR NEW TREATMENT APPROACHES IN MALIGNANT PLEURAL MESOTHELIOMA

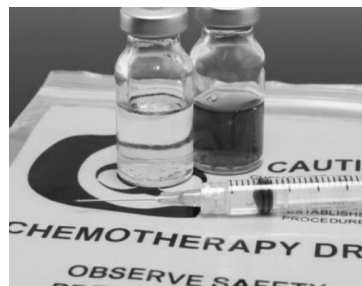


Surgery

Only 10% of patients suitable for resection

Often diagnosed too late for surgery

Technically challenging



Chemotherapy

Standard of care (SoC) with limited efficacy

Only approved option is pemetrexed/cisplatin

6 months mPFS and 12 months mOS in 1st line

Radiotherapy

Rarely effective due to tumor shape and location

Hard to focus radiation

Mainly palliative care

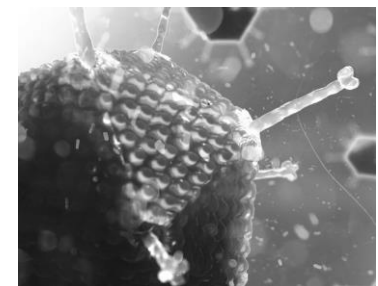


Immunotherapy

Mixed signals from early CPI trials

CPIs included in NCCN guidelines as 2nd line option

FDA approval of ipi/nivo in first line October 2020



ONCOS-102 MESOTHELIOMA PHASE I/II COMBINATION WITH SOC CHEMO

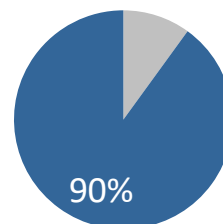
ENCOURAGING CLINICAL OUTCOMES IN FIRST LINE

Trial design

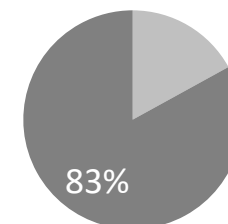
- First and second (or later) line
- ONCOS-102: 6 intra-tumoral injections
- Standard of Care (SoC) Chemo: Pemetrexed and cisplatin, 6 cycles

N=31	Experimental n = 20	Control n = 11
First line	11	6
Second (or later) line	9	5

Disease control rate



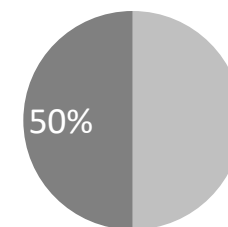
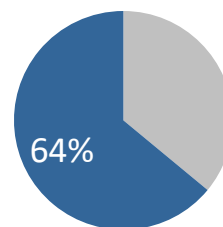
Experimental Control



Median PFS, months

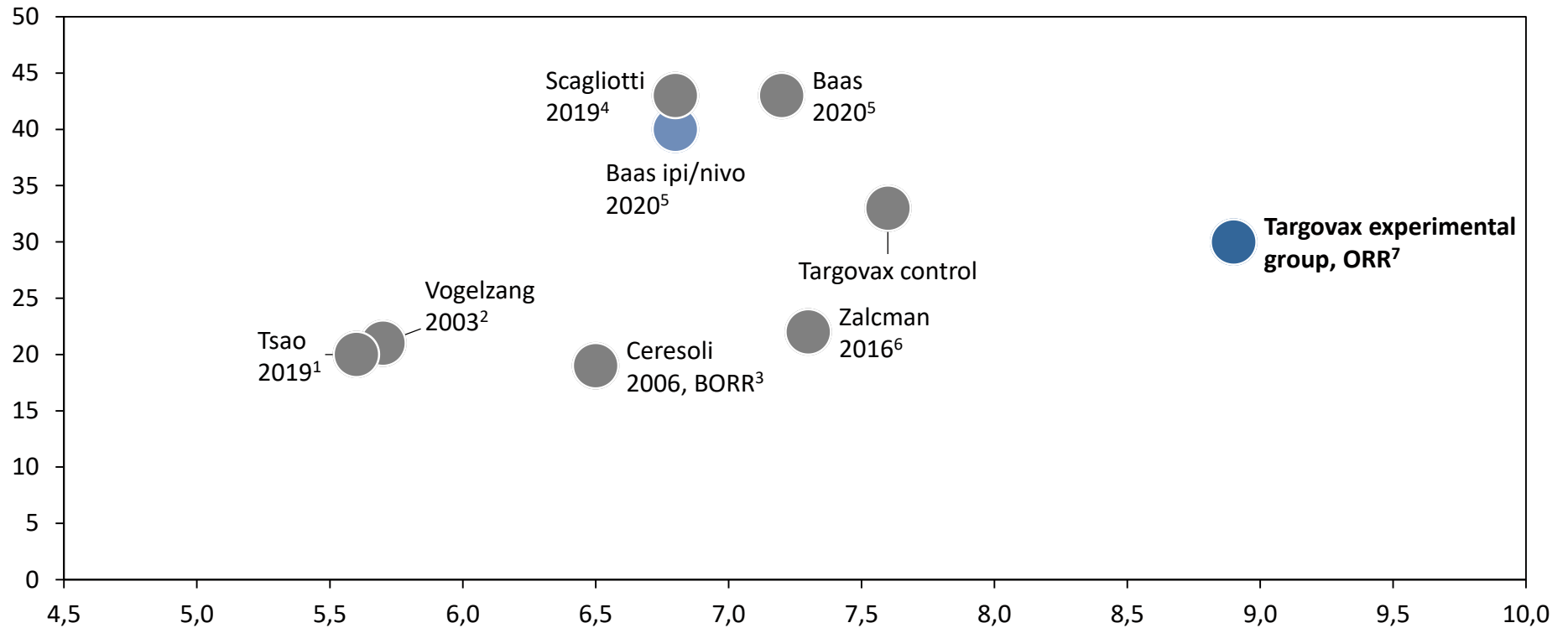


12-month survival rate



FIRST LINE ORR AND PFS DATA COMPARE FAVORABLY TO HISTORICAL CONTROL

ORR / BORR



1 Tsao 2019 (JCO) compared cediranib + pem/cis vs pem/cis; data from pem/cis arm presented on plot

2 Vogelzang 2003 was the basis for FDA approval of pemetrexed. FDA review disputed originally reported data, reducing confirmed BORR to 21% (Hazariika 2005)

3 Pemetrexed plus carboplatin

4 Scagliotti 2019 (Lancet) compared nintedanib + pem/cis vs pem/cis; data from pem/cis arm presented on plot

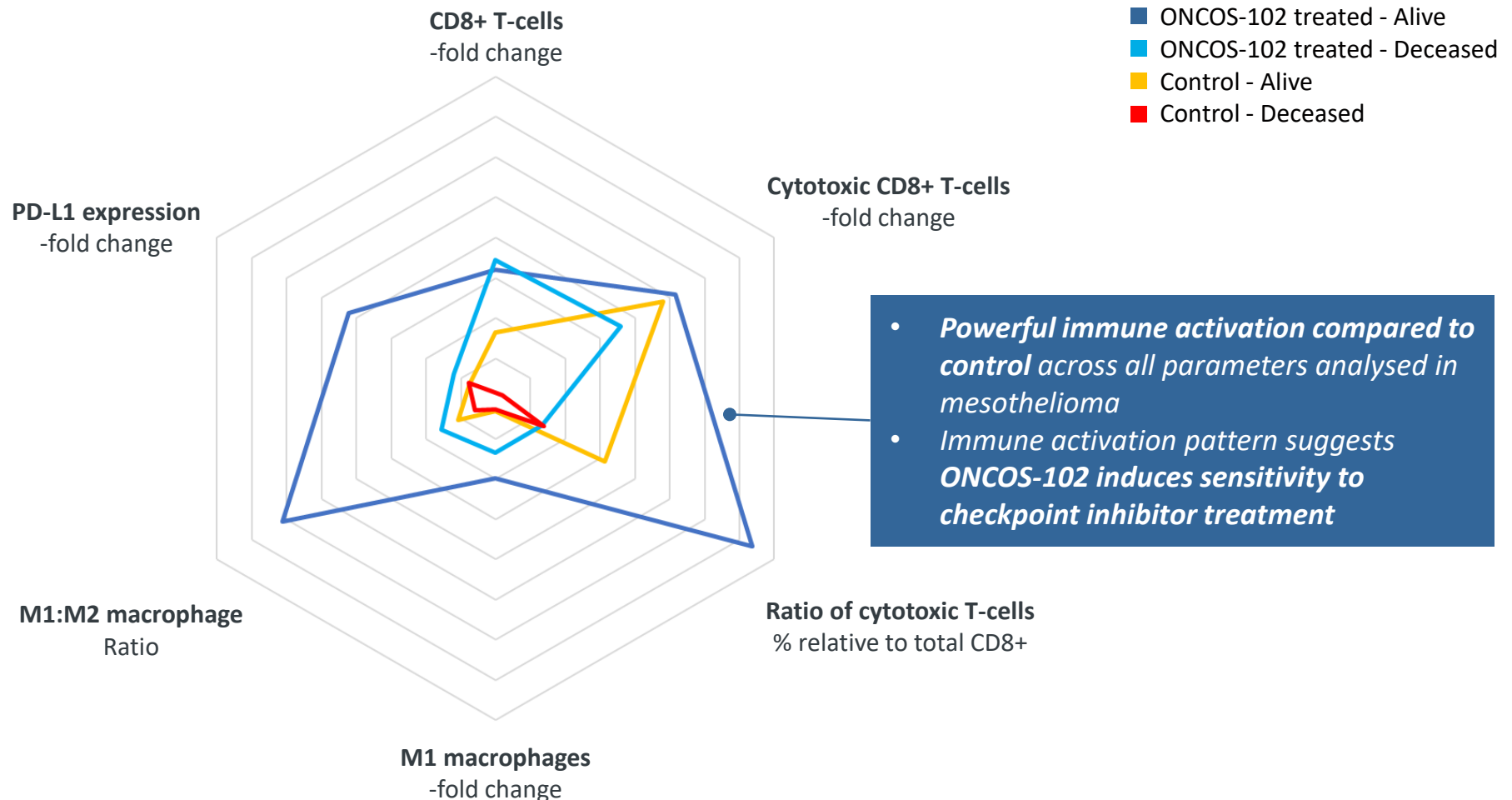
5 Baas 2020 CheckMate 743. Nivolumab + ipilimumab for two years vs pem/cis (or carboplatin). Ipi/nivo was approved in first line by FDA on October 2, 2020.

6 Zalcman 2016 (Lancet) compared bevacizumab + pem/cis vs pem/cis; data from pem/cis arm presented on plot. Not specified if ORR or BORR.

7 mPFS may change: Experimental group 11 patients (3 censored)

mPFS

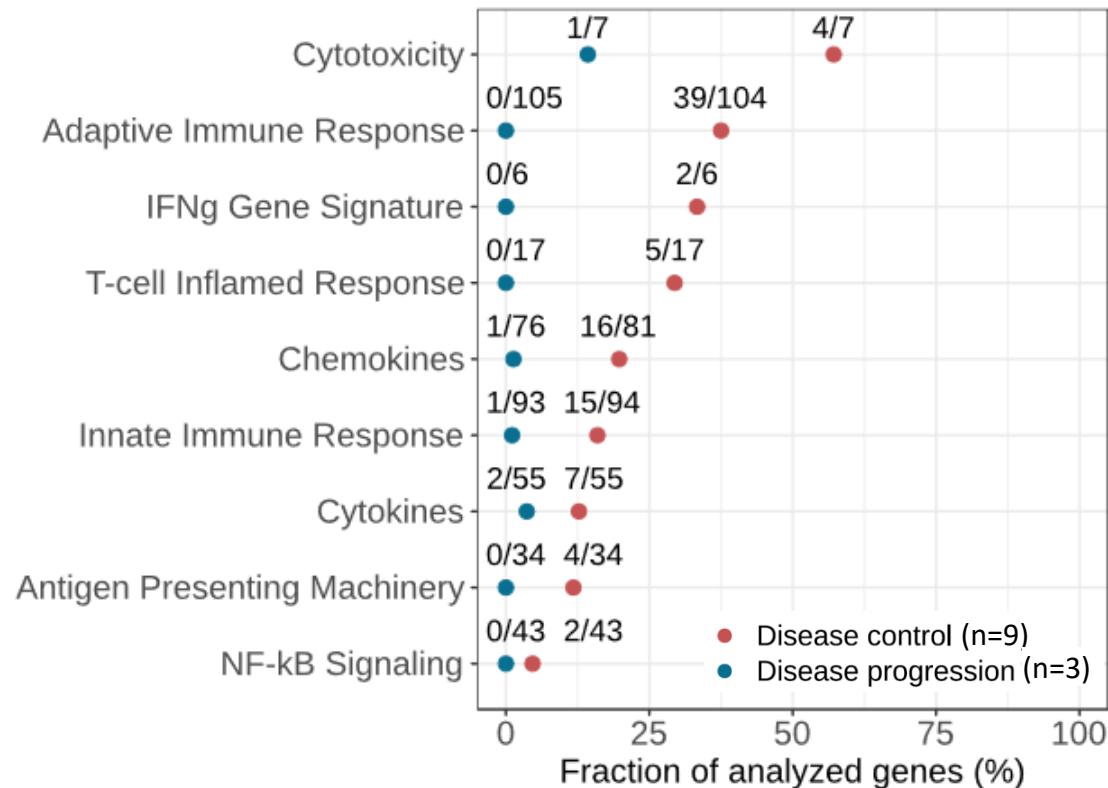
A BROAD AND POWERFUL IMMUNE ACTIVATION PATTERN CONFIRMS ONCOS-102 MODE OF ACTION



THIS POWERFUL IMMUNE ACTIVATION IS ASSOCIATED WITH IMPROVED CLINICAL OUTCOME

ONCOS-102 treated patients with disease control (SD/PR) vs progression (PD)

Fraction of modulated genes¹, Day 36 vs Baseline (%)



- **Broad immune activation** observed in patients with **disease control**
- **Low immune activation** in patients with **progression**
- Local, **cytotoxic Th1 type** immune response, **associated with clinical benefit**
- **No immune activation** in **control group (chemo only)**

CLINICAL AND IMMUNE DATA SUPPORT TRIPLE COMBINATION WITH CHECKPOINT INHIBITOR



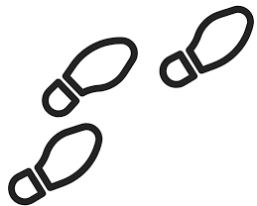
Excellent safety profile confirmed

- ONCOS-102 and SoC chemotherapy **combination is well-tolerated**



Clear clinical activity

- **Favorable mPFS of 8.9 months** in first line ONCOS-102 treated patients
- ONCOS-102 **mode-of-action confirmed** in mesothelioma
- **Powerful immune activation** associated with **clinical benefit**
- Remodeling of the tumor microenvironment indicates that **ONCOS-102 may induce sensitivity to checkpoint inhibition**



Next steps

- **First line** identified as **target population** for further development
- Strong rationale for **combination with anti-PD1 checkpoint inhibitor and SoC chemotherapy**
- **Secured** collaboration with Merck, discussing trial design

Product candidate	Preclinical	Phase I	Phase II	Collaborator	Next expected event
	Mesothelioma Combination w/ pemetrexed/cisplatin				
ONCOS-102	Melanoma Combination w/Keytruda				
	Colorectal Combination w/Imfinzi				
	Prostate Combination w/DCvac				
ONCOS-200 series	Next Gen viruses				
Novel mutRAS concepts					

ONCOS-102 ANTI-PD1 REFRACTORY MELANOMA PART 1

33% ORR AND ROBUST IMMUNE ACTIVATION

Patient population

- Advanced, unresectable **melanoma**
- Disease **progression** following prior treatment with anti-PD1
- Poor prognosis, with **few treatment alternatives**
- Part 1: 9 patients. Part 2: 12 patients (ongoing, fully recruited)

Treatment regime

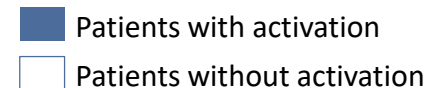
- **Part 1: 3 ONCOS-102 injections** followed by 5 months of Keytruda
- Part 2: 12 ONCOS-102 injections - priming and concomitantly

Clinical data




- Well tolerated, no safety concerns
- **33% ORR** by RECIST 1.1 and irRECIST
 - 1 Complete Response (CR)
 - 2 Partial Responses (PR)
- Robust systemic and local **immune activation**

PART 1

ROBUST LOCAL AND SYSTEMIC IMMUNE ACTIVATION






Inflammatory response and innate immune activation




- Pro-inflammatory cytokine increase: IL-6 and / or TNFa 
- Increase in systemic IFN γ expression 
- Fever/chills 

Adaptive immune activation

T-cell tumor infiltration

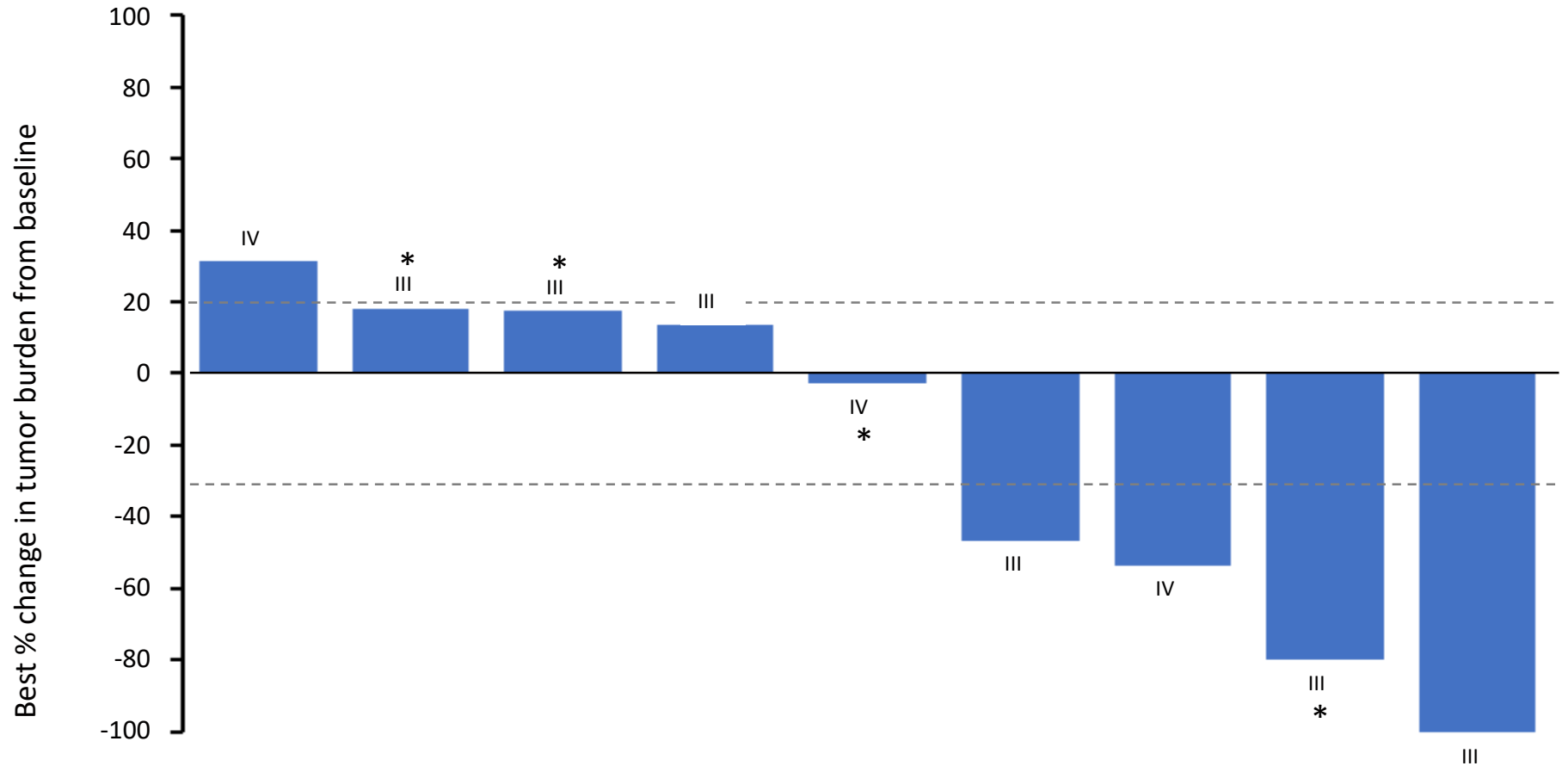
- Increase in CD8+ T-cell infiltration 
- Increase in cytotoxic CD8+ T-cells 
- Signs of abscopal immune effect 

Tumor specific activation

- Systemic increase in tumor specific T-cells NY-ESO-1 and/or MAGE-A1 
- Increase in PD-L1 expression in tumor 
- Melanoma specific cancer markers reduced 

TUMOR REGRESSION OBSERVED IN PD1-REFRACTORY PATIENTS

BEST PERCENT CHANGE IN TARGET LESIONS



* Progressive Disease due to non target progression

Letters and numbers indicating disease stage

Preliminary data

PART 1

CASE EXAMPLE: EARLY AND DURABLE COMPLETE RESPONSE

Tumor response, 1 of 1 injected lesion

Baseline

Week 3

Week 9

Week 18

Week 27 (EoS)



Progression on Keytruda



3x ONCOS-102 only



3x ONCOS-102 & 2x Keytruda



3x ONCOS-102 & 5x Keytruda



3x ONCOS-102 & 8x Keytruda

Patient characteristics

Tumor stage at enrolment:

IIIb
T4a, N2b, M0

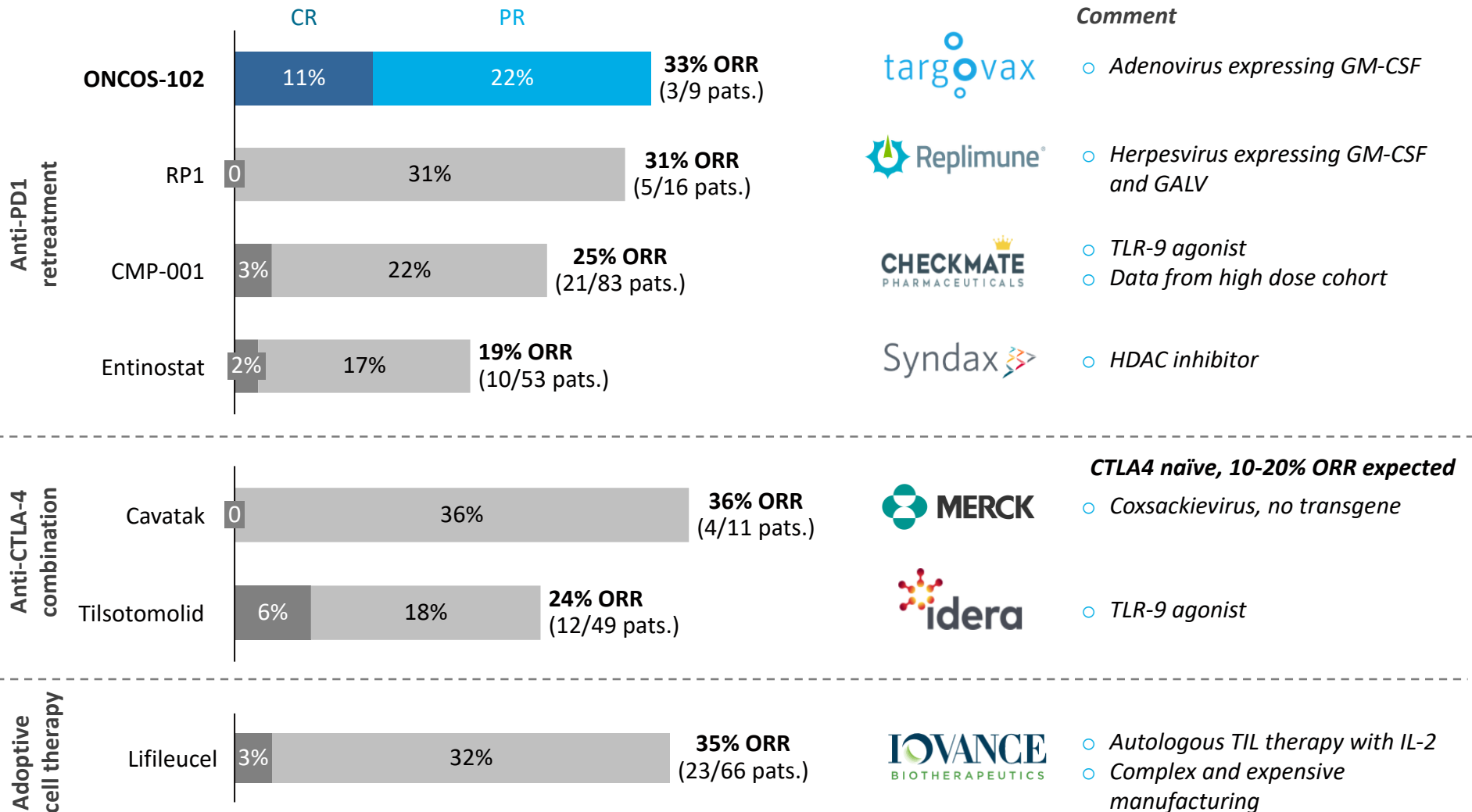
Prior therapies:

Surgery (x3)
Ipilimumab
Dabrafenib + Trametinib
Keytruda

RECIST 1.1:

CR, week 9-27

ONCOS-102 HAS PRODUCED EFFICACY DATA COMPETITIVE TO LEADING DRUG CANDIDATES IN PD1 REFRACTORY MELANOMA



Product candidate	Preclinical	Phase I	Phase II	Collaborator	Next expected event
	Mesothelioma Combination w/ pemetrexed/cisplatin				
	Melanoma Combination w/Keytruda				
ONCOS-102	Colorectal Combination w/Imfinzi				
	Prostate Combination w/DCvac				
ONCOS-200 series	Next Gen viruses				
Novel mutRAS concepts					

STRONG COLLABORATION IN COLORECTAL CANCER WITH PHASE I/II TRIAL COMBINING ONCOS-102 AND IMFINZI

Collaboration

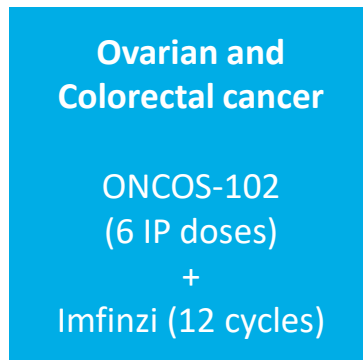


Patient population

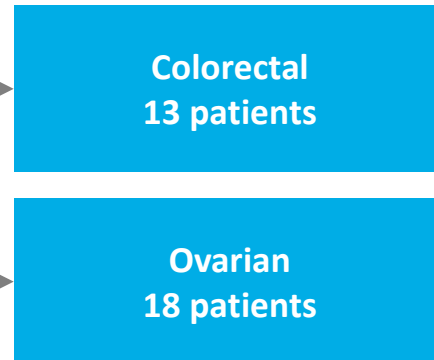
- Primary ovarian or colorectal cancer with peritoneal metastases
- Refractory to standard-of-care platinum chemotherapy
- Intraperitoneal admin of ONCOS-102

Dose escalation

Safety lead-in

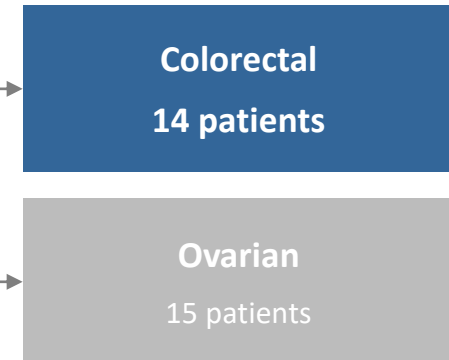


Part I



Expansion

Part II



DCR met in 1 of 13
Simon's two-stage design

DCR not met in 5 of 18

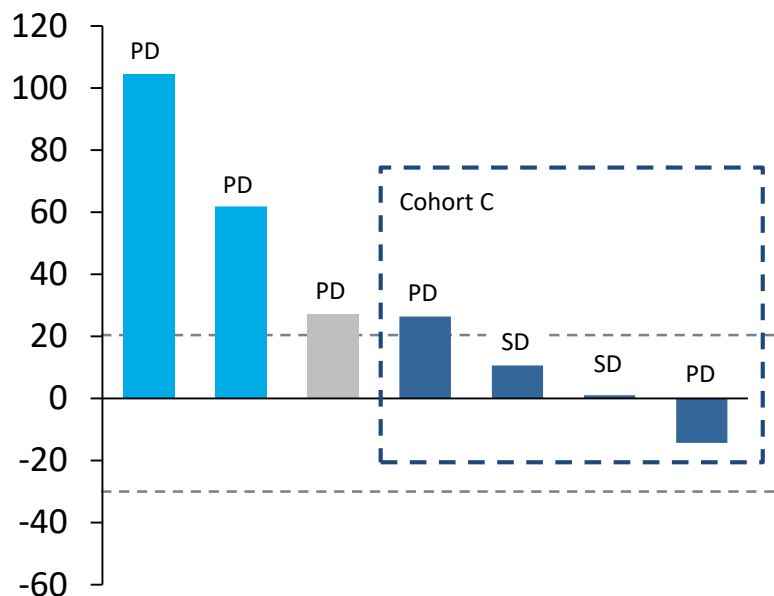
ASCO 2020: Dose Escalation part presented showing clinical activity as well as immune activation, and acceptable safety profile with no DLTs observed

TUMOR CHANGE AND RESPONSES IN SAFETY LEAD-IN

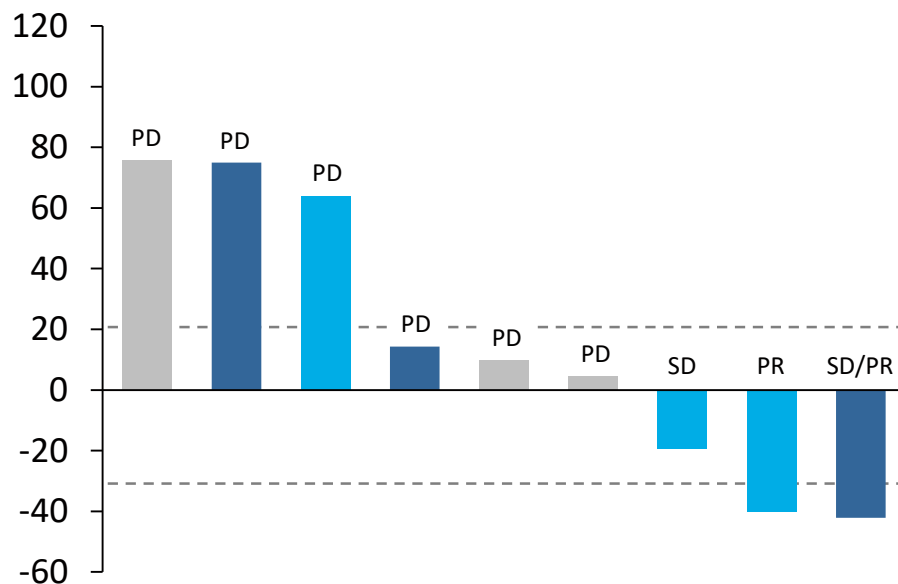
CPI MONOTHERAPY HAS SHOWN RESPONSES <5%¹

Tumor change² and best overall response

Colorectal³ (CRC)



Ovarian (OC)



Dosing

Cohort A – Low dose ONCOS-102 then Imfinzi

Cohort B – Low dose ONCOS-102 + Imfinzi

Cohort C – Standard dose ONCOS-102 + Imfinzi

Disease control rate (best response)

CRC: 0/2 OC: 0/2

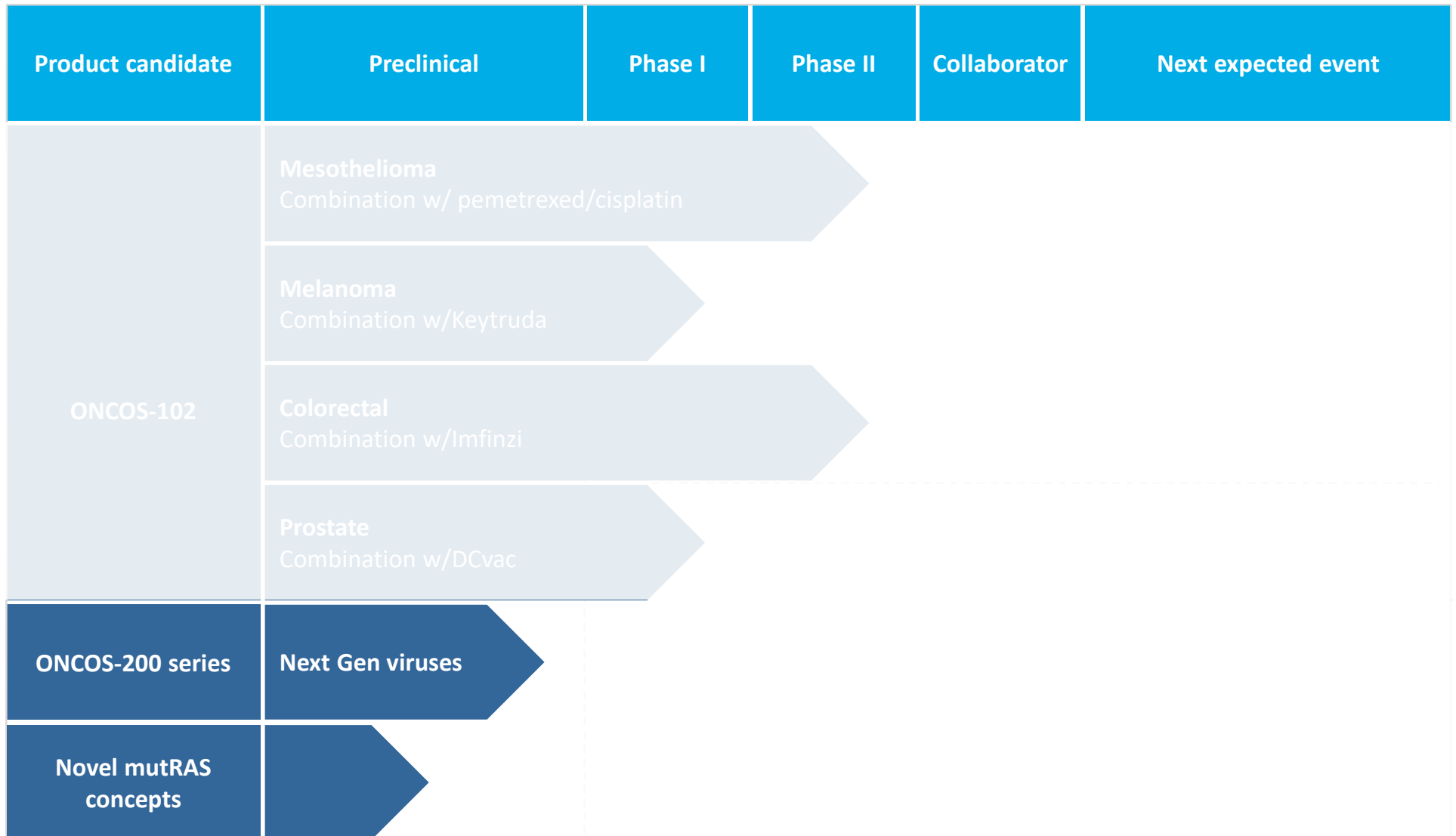
CRC: 0/2 OC: 2/3

CRC: 2/5 OC: 1/3

¹ Gonzales-Martin, Cancer 2019; W Hammond, Ther Adv Med Oncol 2016; Le et al, Keynote-016

² Tumor change is based on the patient's best overall response or first indication of progression (if PD was the best response) by RECIST 1.1. % change = $\left[\frac{\text{Sum of diameters at best response or first indication of PD} - \text{Sum of diameters at baseline}}{\text{Sum of diameters at baseline}} \right] \times 100$

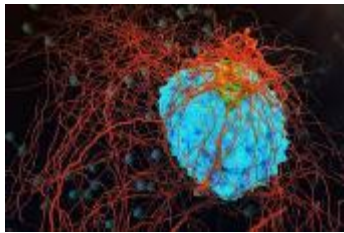
³ One patient with CRC in Cohort C is not in waterfall plot, as RECIST data are not available; clinical PD was documented.



NEXT GENERATION ONCOS VIRUSES HAVE DOUBLE TRANSGENES AND DISTINCT MODES OF ACTION

Mode of action

Target tumors

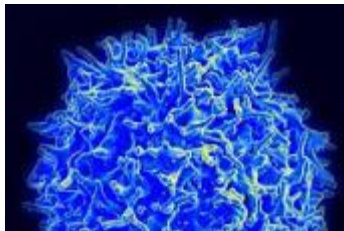


ONCOS-210 & -212

Inhibition of tumor growth and vascularization

- Interfere with tumor's ability to break down surrounding tissue
- Induce cell cycle arrest
- Inhibit angiogenesis

- Highly invasive or metabolic tumors

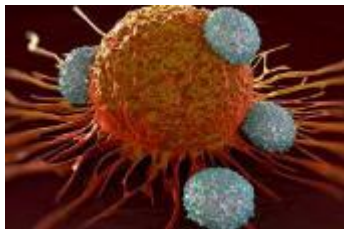


ONCOS-211

Counteract immune-suppressive tumor microenvironment

- Remove inhibitory molecules from tumor microenvironment
- Activate T-cells

- "Cold" uninflamed tumors



ONCOS-214

Enhanced cell killing properties

- Induce immunogenic cell death
- Extend cell killing ability to neighboring non-infected cells

- High-stroma tumors

ESTABLISHING PIPELINE OF FIRST-IN-CLASS MUTANT RAS CONCEPTS THROUGH STRATEGIC PARTNERSHIPS

Targovax mutRAS immunotherapy strategy

Enhanced mutRAS vaccination
Clinical stage

- Enhanced versions of TG01/TG02 vaccines
- Novel therapeutic combination strategies
- Clinical collaborations

Next generation mutant RAS pipeline



Boost TG01/02 immunogenicity -
Next gen. adjuvants



Option to license TG01/02 vaccines
for Greater China and Singapore

Next generation mutRAS concepts
Pre-clinical discovery

- Innovative, first-in-class mutRAS IO concepts
- Leverage ONCOS platform
- Strategic R&D partnerships



Oncolytic virus w/ mutRAS vaccine coating - Coat ONCOS-102 with mutant RAS neoantigen PeptiCRAd peptides



Oncolytic virus w/ mutRAS antibody payload - Express AbiProt mutant RAS targeting antibodies from ONCOS backbone

SUFFICIENTLY FUNDED TO ADVANCE CLINICAL PROGRAM BEYOND VALUE INFLECTION POINTS

The company

Cash end of 2Q

101 / 11

NOK million USD million

Net cash flow - total 2Q

-34 / 4

NOK million USD million

Market cap

700 / 76

NOK million USD million

Analyst coverage

DNB, H.C. Wainwright, ABG Sundal Collier, Edison

The shareholders

Estimated ownership¹

Shareholder	Shares million	Ownership
HealthCap	12.4	16.3 %
RadForsk	4.4	5.8 %
Nordea	4.3	5.7 %
Fjarde AP-Fonden	3.0	3.9 %
Thorendahl Invest	1.5	2.0 %
Danske Bank (nom.)	1.2	1.6 %
Bækkelaget Holding	1.2	1.5 %
Morgan Stanley	1.1	1.5 %
Sundt AS	1.0	1.3 %
MP Pensjon	0.9	1.1 %
10 largest shareholders	31.0	40.7 %
Other shareholders (5 415)	45.1	59.3 %
Total shareholders	76.1	100.0 %

ACTIVATING THE PATIENT'S IMMUNE SYSTEM TO FIGHT CANCER

BEST-IN-CLASS IMMUNE ACTIVATION

ONCOS-102 has clinically demonstrated a broad and powerful immune activation, both as monotherapy and in combinations

ENCOURAGING CLINICAL EFFICACY

This powerful immune activation translates into clinical benefit for patients, in combination with both checkpoint inhibitors and chemotherapy

NEWS FLOW

Rich news flow 2020-21 from ongoing clinical program

Collaboration with Merck in mesothelioma

Pipeline of first-in-class mutant RAS IO concepts and next generation oncolytic viruses