



ACTIVATING THE PATIENT'S IMMUNE SYSTEM TO FIGHT CANCER

Company presentation
ABGSC Life Science Summit

May 26, 2020



targovax

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Intro

2. Mesothelioma
3. Melanoma
4. Peritoneal malignancies
5. Newsflow

GROWING NEED FOR IMMUNE ACTIVATORS

CPIs are revolutionizing cancer treatment...

...but not all patients respond to CPIs...

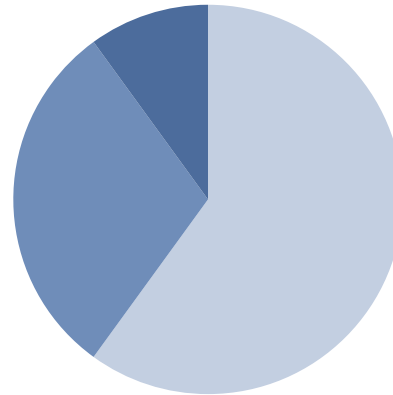
...leading to high medical need for immune activators

22 bn USD

Global CPI market¹

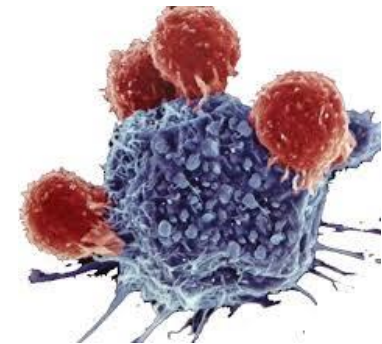
44 %

Patients eligible for CPI²:



10 - 40 %

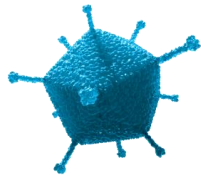
Responders



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.

ACTIVATING THE IMMUNE SYSTEM TO FIGHT CANCER



ONCOS-102 lead clinical asset

- ONCOS oncolytic adenovirus platform targets hard-to-treat **solid tumors**
- One of the **furthest developed** OV's with >180 patients treated to date
- Ongoing combination trials ensuring **rich news flow** in 2020



Encouraging clinical efficacy demonstrated

- Strong **single agent** immune activation and clinical data
- **33% ORR** in anti PD-1 refractory melanoma in combination with Keytruda
- Encouraging first set of **clinical and immune data in mesothelioma**

IMMUNE ACTIVATION AND ANTIGEN RELEASE

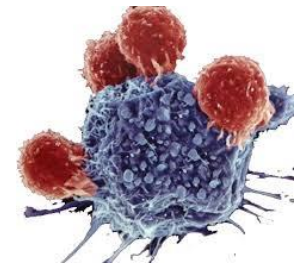
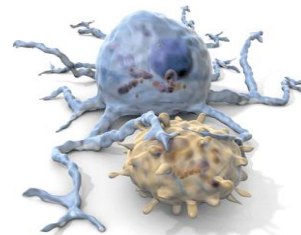
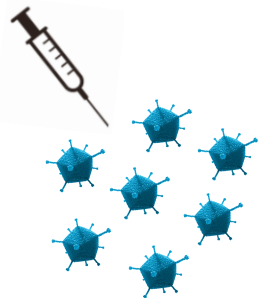
STIMULATE T-CELLS THAT MAY RECOGNIZE AND KILL CANCER

1 Virus injection
Local delivery

2 Oncolysis
Immune activation

3 Antigen processing
T-cell activation

4 T-cell response
Anti-tumor immunity



- Intratumoral or intra-peritoneal injection
- Tumor cell infection




- Lysis of tumor cells
- Inflammatory response
- Tumor antigen release

- Antigen processing
- T-cell activation in lymph nodes

- T-cell tumor infiltration
- Tumor antigen recognition
- CPIs “releasing brakes”

ONCOS-102 IS ONE OF THE FURTHEST DEVELOPED VIRUSES

OVERVIEW OF MOST RELEVANT ONCOLYTIC VIRUSES IN DEVELOPMENT

Company		Asset/ Program	MoA	Highest Phase
	H	Imlygic	HSV with GM-CSF transgene, IT only	Approved 2015 as mono Phase III PD1 combo
	R	Cavatak	Coxsackievirus, non gene modified, IT focus, IV and IP trial ongoing	Phase II
	A	DNX-2401	Chimeric Ad5/3, no transgene, IT and intra-arterial	Phase II
	A	ONCOS-102	Chimeric Ad5/3 with GM-CSF transgene, IT and IP administration	Phase II
	A	CG0070	Ad5 with GM-CSF transgene, intravesical	Phase II
	R	Reolysin	Reovirus, non gene modified, IV only	Phase II
	A	Enadenotucirev	Chimeric Ad5, no transgene, IV only	Phase I/II
	H	RP1	HSV with GM-CSF, GALV, and ipilimumab transgenes, IT only	Phase I/II
	A	LOAd703	Chimeric Ad5/35 with TMZ-CD40L and 4-1BBL transgenes, IT only	Phase I/II
	R	Voyager V1	VSV virus with NIS and human interferon beta transgenes, IV only	Phase I
	R	Ad-MAGEA3	Maraba virus with MAGEA3 transgene, IV and IT	Phase I
	R	VSV-GP	Chimeric VSV virus, IV only	Pre-clinical
	V	RIVAL	Maraba and Vaccinia viruses armed with multiple transgenes, IV only	Pre-clinical
	V	Invir.IO	Vaccinia virus platform armed with CTLA-4 ++, solid tumors	Pre-clinical
	H	oHSV	Herpes virus with multiple transgenes (PD1, CTLA4 ++), IT only	Pre-clinical

A Adenovirus

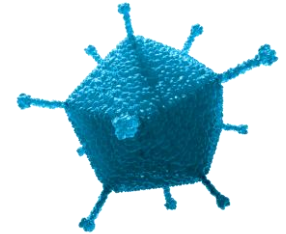
H Herpes virus

V Vaccinia virus

R RNA virus



BENEFITS OF ONCOS-102 ADENOVIRUS



Highly immunogenic, TLR-9 agonist, stimulates inflammation













Well-characterized, well-tolerated and few safety concerns



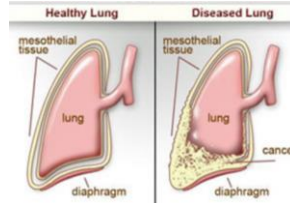
Versatile DNA backbone, ability to carry multiple transgenes

SEVERAL SIGNIFICANT BD TRANSACTIONS IN THE ONCOLYTIC VIRUS SPACE IN 2018-2019

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
	 <small>Developers of Oncolytic Immunotherapies</small>	M&A RNA virus, Phase II	USD 400m cash acquisition
 <small>PHARMACEUTICAL COMPANIES OF Johnson & Johnson</small>		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

DEVELOPMENT STRATEGY WITH CPI COMBINATIONS

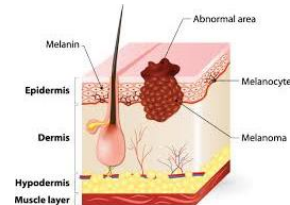
1 Establish path-to-market



Mesothelioma

- ~15.000 patients
- Potential for first line, limited competition

2 Activate refractory tumors



Anti-PD1 refractory melanoma

- Few alternatives for ~50.000 patients
- Benchmarking arena for immune activators

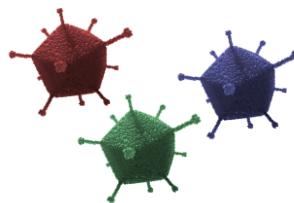
3 Expand CPI indications



Peritoneal malignancies

- Metastases from ovarian and colorectal cancers
- >100.000 patients not responding to CPIs

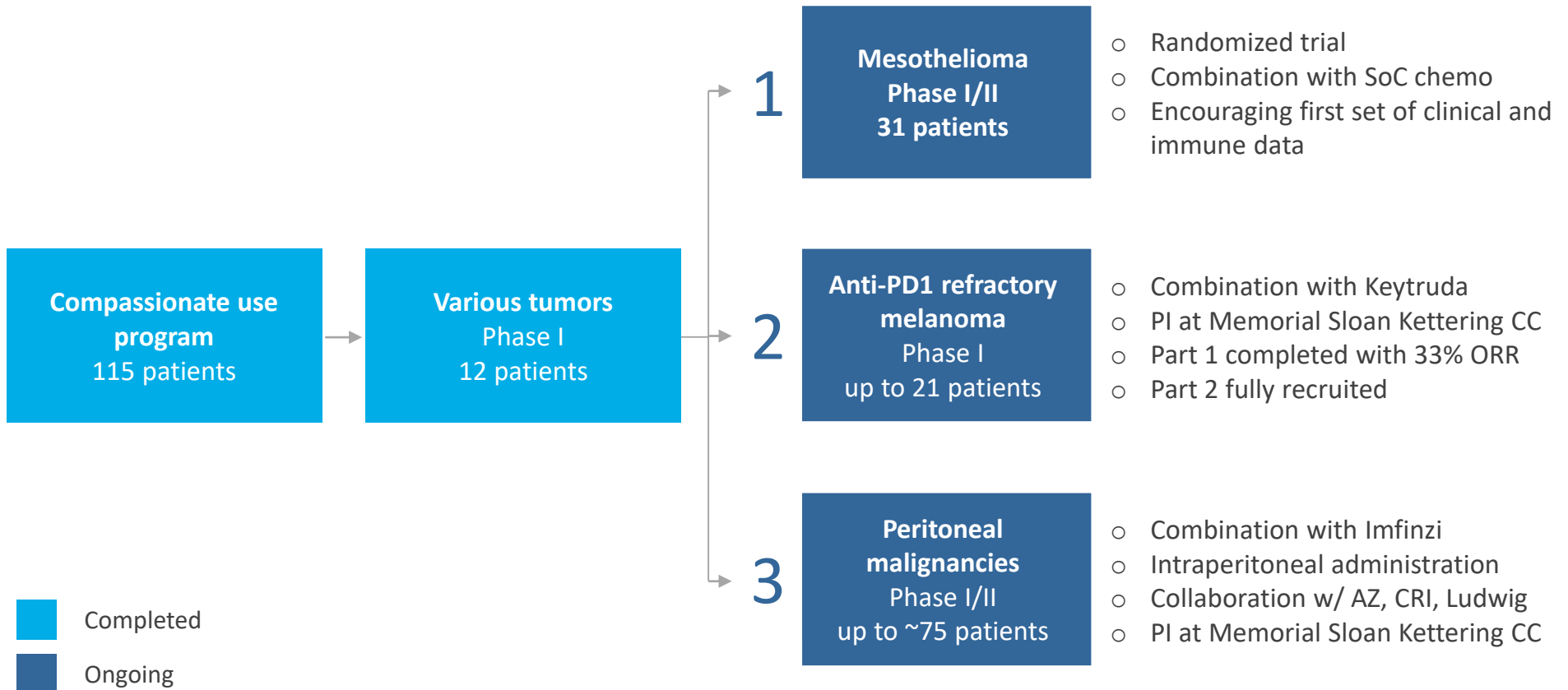
4 Expand platform



Next generation oncolytic viruses

- Double transgenes
- Novel targets and modes of action

CLINICAL DEVELOPMENT PROGRAM



2

Mesothelioma

3. Melanoma
4. Peritoneal malignancies
5. Newsflow

HIGH NEED FOR NEW TREATMENT APPROACHES IN MALIGNANT PLEURAL MESOTHELIOMA



Surgery

Only 10% of patients suitable for resection

Often diagnosed too late for surgery

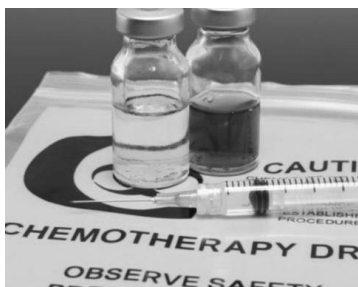
Technically challenging

Radiotherapy

Rarely effective due to tumor shape

Hard to focus radiation

Mainly palliative care



Chemotherapy

Standard of care (SoC) with limited efficacy

Only approved option is pemetrexed/cisplatin

6 month PFS and 12 month median OS in 1st line

Immunotherapy

Mixed signals from early CPI trials

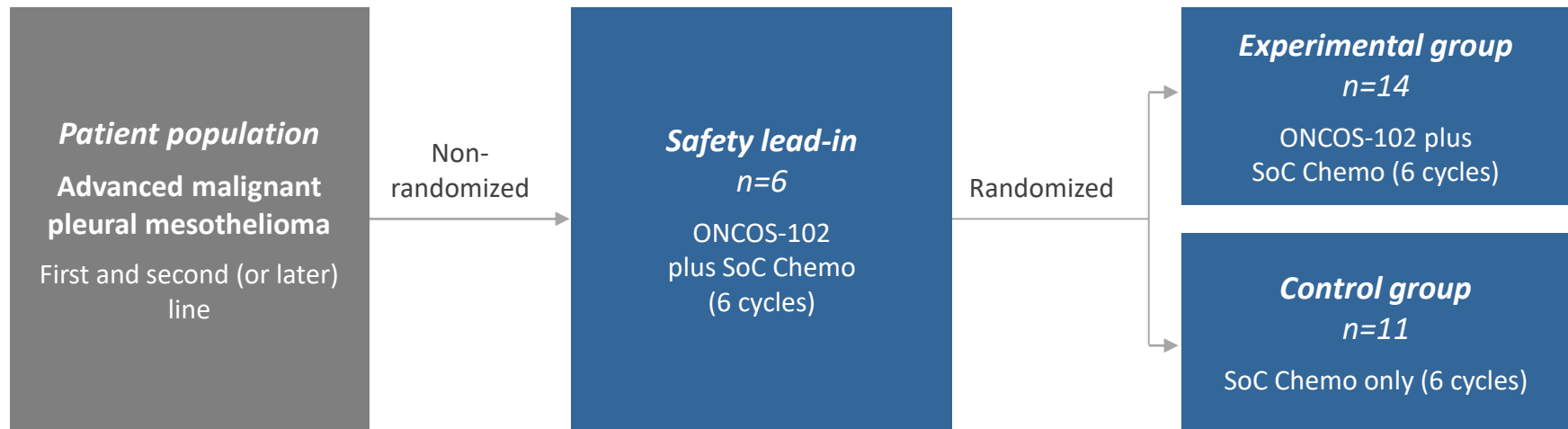
CPIs included in NCCN guidelines as 2nd line option

Possible frontline therapy with orphan drug designation

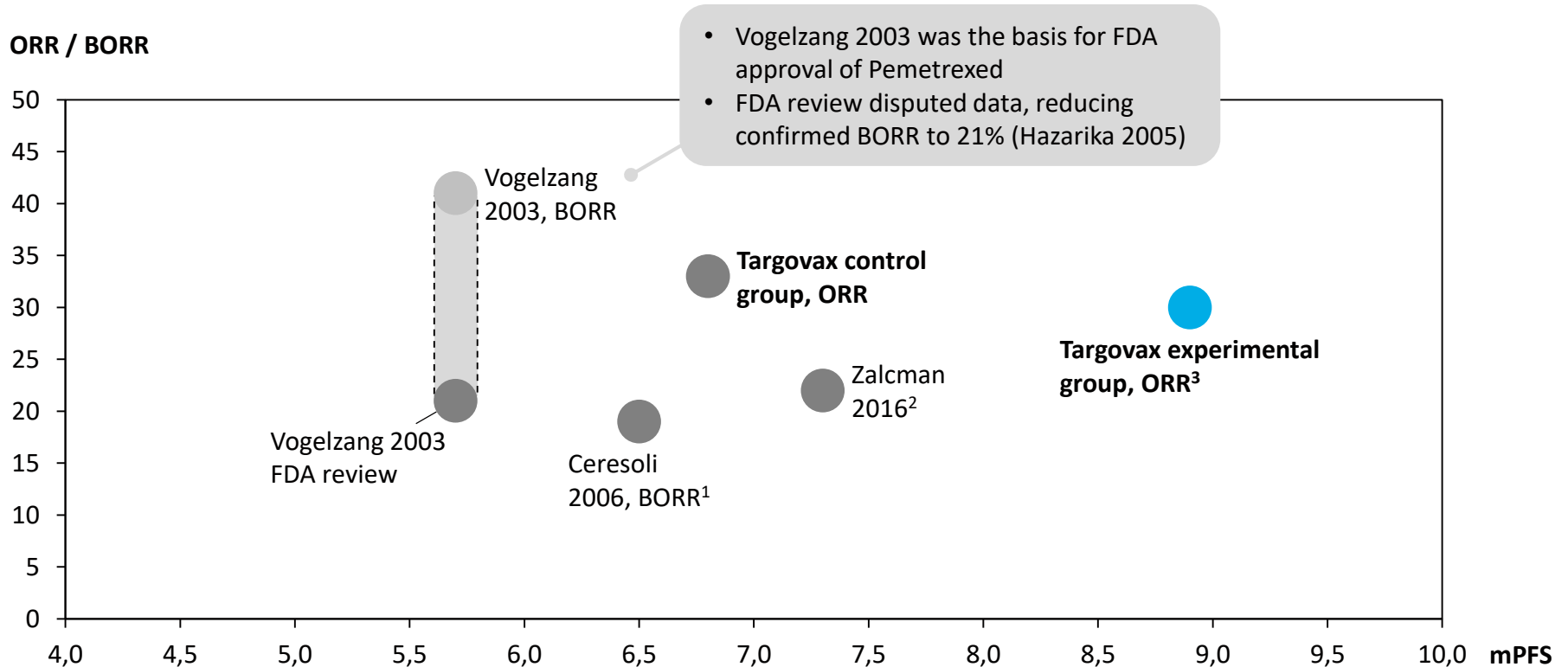


MESOTHELIOMA PHASE I/II TRIAL IN COMBINATION WITH CHEMO

STUDY DESIGN



FIRST LINE ORR AND EARLY PFS DATA COMPARE FAVORABLY TO HISTORICAL CONTROL



1 Pemetrexed plus carboplatin

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

3 mPFS in Targovax trial is early (at 6 months) and will change: Control group 6 patients (3 censored), Experimental group 11 patients (7 censored)

ONCOS-102 MESOTHELIOMA PHASE I/II TRIAL

6-MONTHS DATA AND NEXT STEPS



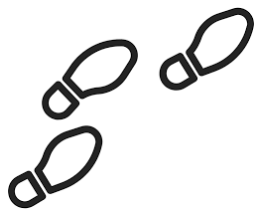
Excellent safety profile confirmed

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



Clinical activity observed

- mPFS of 8.9 months in first line suggest **benefit** for ONCOS-102 treated patients and **compares favorably** to historical control of 5.7-7.3 months
- Increased **T-cell infiltration** and **PD-L1 expression**
- Robust immune activation **associated with clinical benefit**



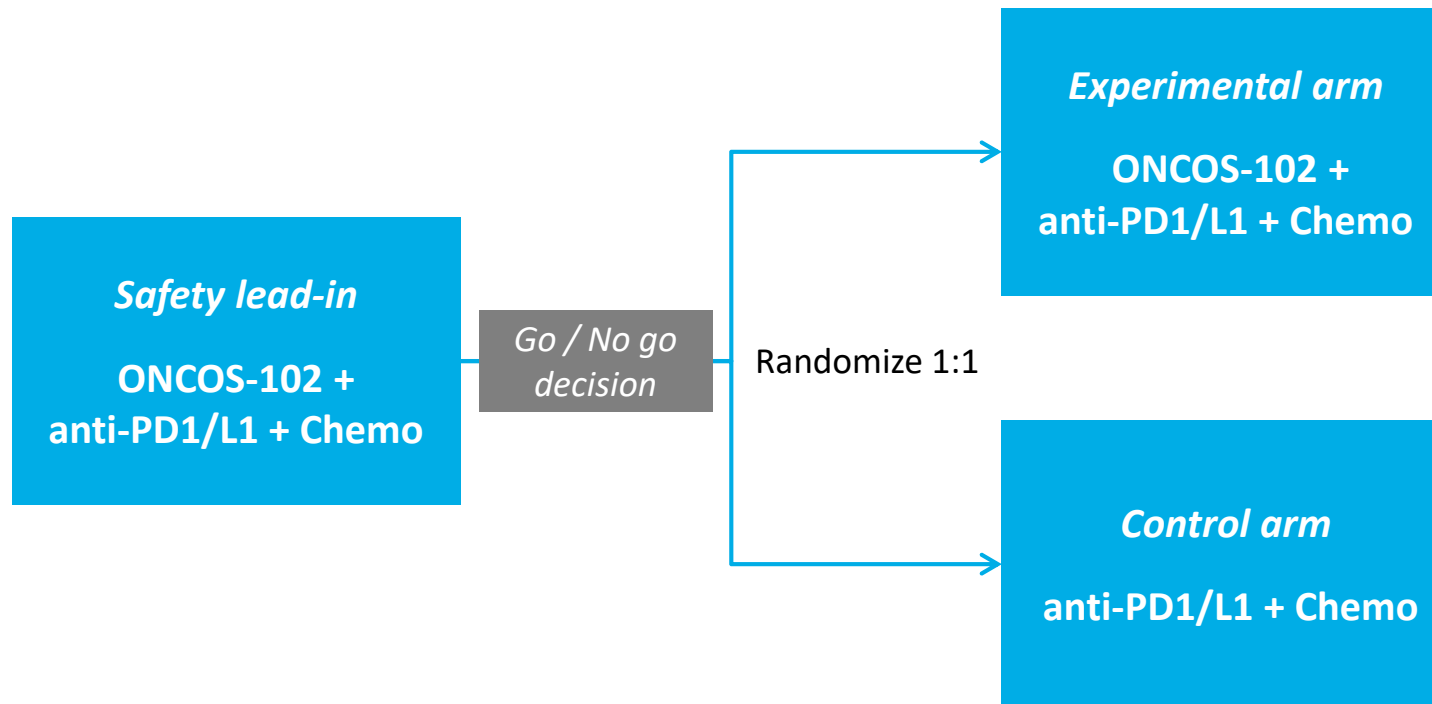
Next steps defined

- 12-months data expected during summer
- **First line** identified as **target population** for follow-up trial
- Strong rationale for combination with **anti-PD1/L1 CPI**. Discussions with **pharma partner** for trial collaboration

NEXT TRIAL: ADDING CPI ON ONCOS-102 + CHEMO TRIPLE COMBINATION IN FIRST LINE MESOTHELIOMA

Study population – malignant pleural mesothelioma:

First line, unresectable, advanced and/or metastatic disease
ca. 100 patients



3

Melanoma

- 3. Peritoneal malignancies
- 4. Newsflow

ANTI-PD1 REFRACTORY MELANOMA
COMBINATION TRIAL – FULLY RECRUITED

	Part 1	Part 2
Patients	9	12
ONCOS-102 injections	3	12
Overall response rate (ORR)	33%	2H20

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**

Treatment regime

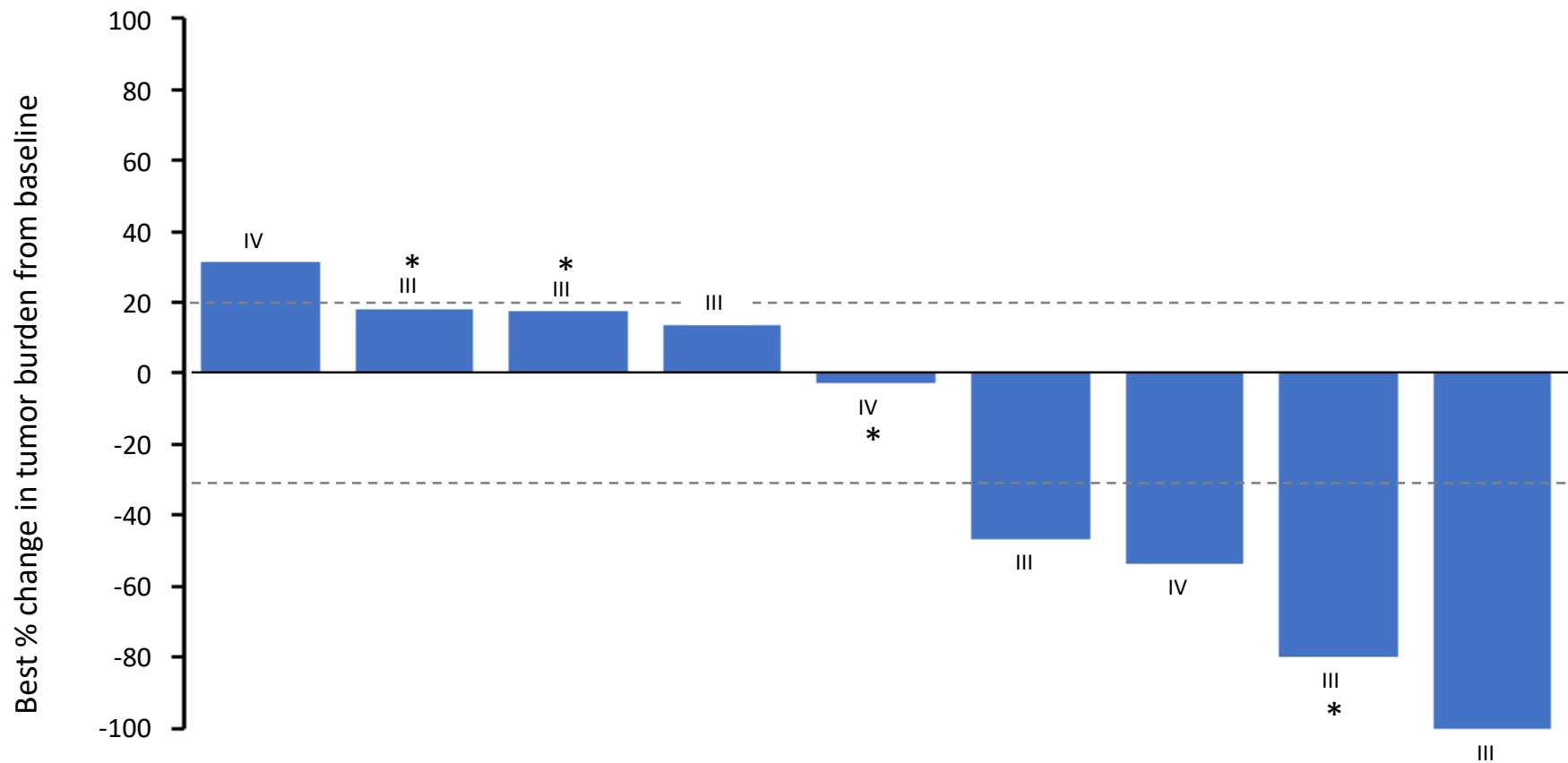
- **3 ONCOS-102 injections** followed by 5 months of Keytruda

Clinical data

- Well tolerated, no major 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

BEST PERCENTAGE 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 LASTING 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:

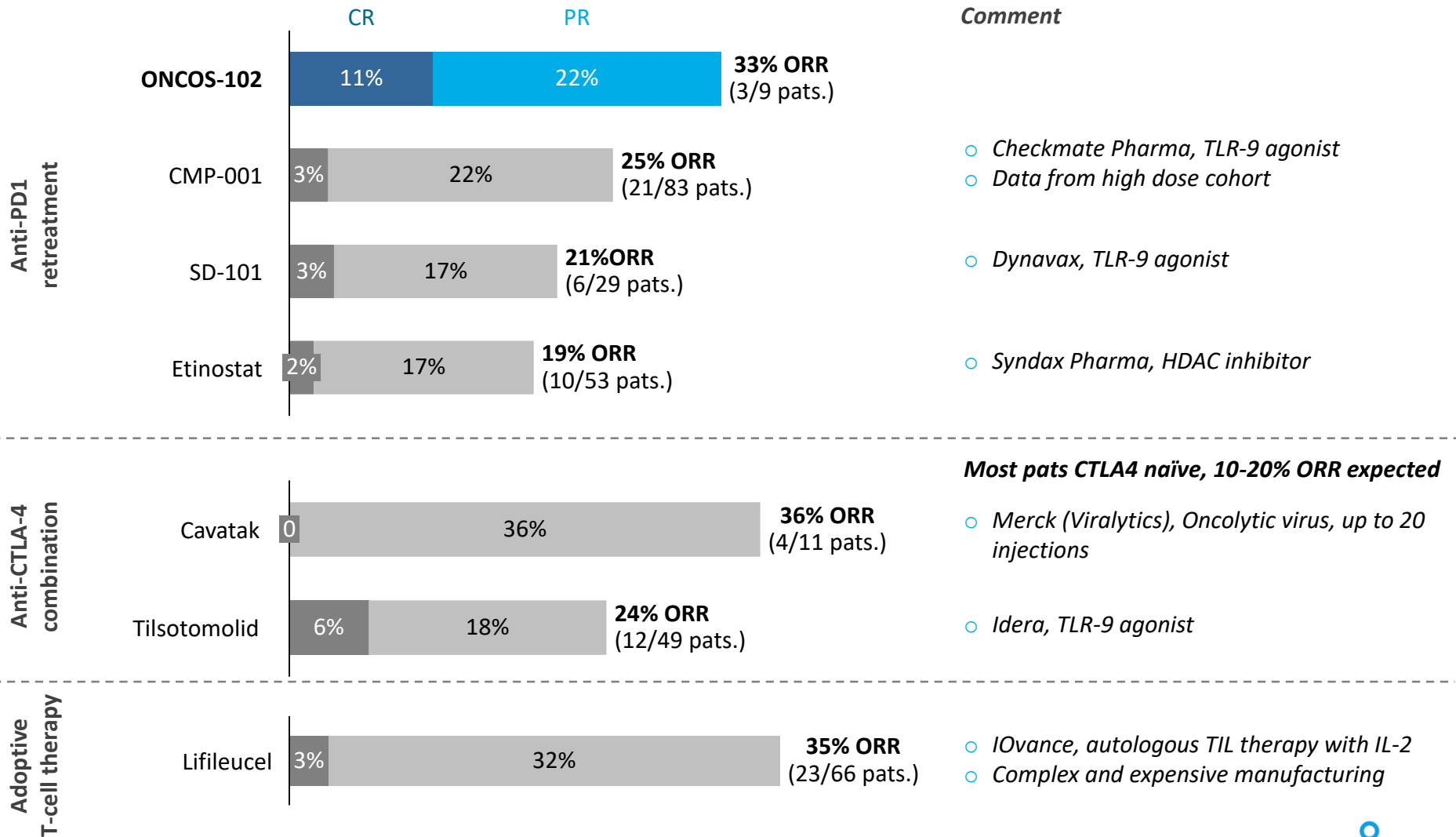
Surgery (x3)
Ipilimumab
Dabrafenib + Trametinib
Keytruda

RECIST 1.1:

CR, week 9-27

ONCOS-102 + KEYTRUDA DATA IN CONTEXT

ANTI-PD1 REFRACTORY MELANOMA BENCHMARK DATA



4

Peritoneal malignancies

5. Newsflow

STRONG COLLABORATION IN PERITONEAL MALIGNANCIES WITH PHASE I/II TRIAL COMBINING ONCOS-102 AND IMFINZI

Collaboration

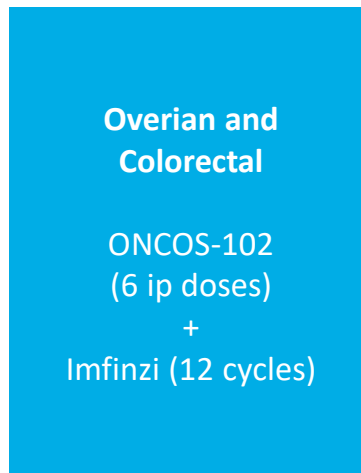


Patient population

- Platinum-resistant ovarian cancer or colorectal cancer
- Peritoneal disease who have failed prior standard chemotherapy

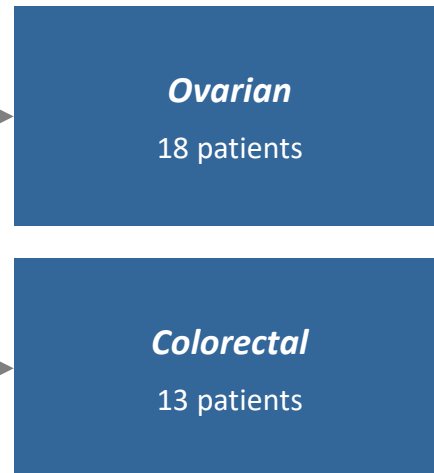
Dose escalation

Safety lead-in

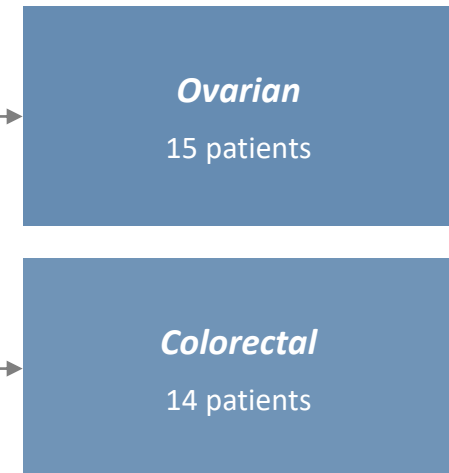


Expansion

Part I



Part II



DCR in
5 of 18

Simon
two-stage

DCR in
1 of 13

5

Newsflow

PIPELINE WITH RICH NEAR-TERM NEWS FLOW

Product candidate	Preclinical	Phase I	Phase II	Phase III	Next expected event
ONCOS-102	Mesothelioma Combination w/ pemetrexed/cisplatin				1H 2020 Updated clinical and immune data
	Melanoma Combination w/Keytruda				2H 2020 Clinical and immune activation data
	Peritoneal malignancies Collaborators: Ludwig, CRI & AstraZeneca Combination w/Imfinzi				1H 2020 Update at ASCO
	Prostate Collaborator: Sotio Combination w/DCvac				<i>Update by collaborator</i>
ONCOS-200 series	Next Gen viruses				Updates at conferences
Novel mutRAS concepts					

SUFFICIENTLY FUNDED TO ADVANCE CLINICAL PROGRAM BEYOND VALUE INFLECTION POINTS

The company

Cash end of 1Q

135 / 13

NOK million

USD million

OPEX - total 1Q

- 30 / 3

NOK million

USD million

Market cap

690 / 66

NOK million

USD million

Analyst coverage

DNB, H.C. Wainwright, Arctic, ABG Sundal Collier, Redeye, 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 %
Morgan Stanley	1.1	1.5 %
Bækkelaget Holding	1.1	1.4 %
MP Pensjon	1.0	1.4 %
Sundt AS	1.0	1.3 %
10 largest shareholders	31.1	40.8 %
Other shareholders (5 179)	45.0	59.2 %
Total shareholders	76.1	100.0 %



ACTIVATING THE IMMUNE SYSTEM TO FIGHT CANCER

CLINICALLY PROVEN

One of the furthest developed
oncolytic viruses

Strong single agent data

Activation of anti-PD1
refractory tumors

INNOVATIVE PIPELINE

Next generation
virus platform in
pre-clinical testing

Exploring novel mutant RAS
concepts

RICH NEWS FLOW

Clinical and immune activation
from mesothelioma and
melanoma trials

Readout from peritoneal trial