ACTIVATING THE PATIENT'S IMMUNE SYSTEM TO FIGHT CANCER

4Q & full year 2021 report

17 February 2022

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OSE:
TRVX

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This report contains certain forward-looking statements based on uncertainty, since they relate to events and depend on circumstances that will occur in future and which, by their nature, will have an impact on the results of operations and the financial condition of Targovax. Such forward-looking statements reflect the current views of Targovax and are based on the information currently available to the company. Targovax cannot give any assurance as to the correctness of such statements.

There are a number of factors that could cause actual results and developments to differ materially from those expressed or implied in these forward-looking statements. These factors include, among other things, risks or uncertainties associated with the success of future clinical trials; risks relating to personal injury or death in connection with clinical trials or following commercialization of the company's products, and liability in connection therewith; risks relating to the company's freedom to operate (competitors patents) in respect of the products it develops; risks of non-approval of patents not yet granted and the company's ability to adequately protect its intellectual property and know-how; risks relating to obtaining regulatory approval and other regulatory risks relating to the development and future commercialization of the company's products; risks that research and development will not yield new products that achieve commercial success; risks relating to the company's ability to successfully commercialize and gain market acceptance for Targovax' products; risks relating to the future development of the pricing environment and/or regulations for pharmaceutical products; risks relating to the company's ability to secure additional financing in the future, which may not be available on favorable terms or at all; risks relating to currency fluctuations; risks associated with technological development, growth management, general economic and business conditions; risks relating to the company's ability to retain key personnel; and risks relating to the impact of competition.

4Q & FULL YEAR 2021 HIGHLIGHTS

ONCOS-102	• Reported class-leading ORR of 35% for ONCOS-102 in PD1-refractory melanoma, associated with broad and powerful immune activation in responding tumors • Reported 25.0 months median Overall Survival (mOS) for ONCOS-102 combined with chemotherapy in first line mesothelioma • Granted two Fast-Track designations for ONCOS-102 by the US FDA, for both PD1-refractory melanoma and malignant pleural mesothelioma
NextGen circRNA ONCOS vectors	• Expanded the pipeline programs into circular RNA delivery • Appointed Dr. Erik Digman Wiklund as CEO, previous Targovax CBO and CFO and circRNA co-discoverer • Appointed circRNA co-discoverer Dr. Thomas B Hansen as VP of Research to lead the NextGen circRNA ONCOS pipeline program • Announced a research collaboration with Prof. Michael Uhlin at Karolinska Institutet in Stockholm for development and characterization of NextGen ONCOS viruses
Mutant KRAS	• Awarded two prestigious research grants towards the TG mut KRAS vaccine program totaling NOK 18m over four years; NOK 9.8m from the Research Council of Norway and NOK 8.2m from Innovation Norway
Corporate	• Completed a rights issue raising gross proceeds of NOK 175m

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4Q OPEX IN LINE WITH PREVIOUS QUARTERS

NOK m	4Q20	1Q21	2Q21	3Q21	4Q21
Total revenue	**0**	**0**	**0**	**0**	**0**
R&D expenses[1]	-8	-9	-9	-10	-10
Payroll and related expenses	-12	-11	-13	-11	-13
Other operating expenses[2]	-3	-2	-3	-2	-2
Total operating expenses	**-23**	**-23**	**-25**	**-23**	**-26**
Operating loss	-23	-23	-25	-23	-26
Net financial items	-3	1	-1	-1	-1
Loss before income tax	-26	-22	-26	-23	-27
Net change in cash	45	-27	-24	-17	128
Net cash EOP	**122**	**95**	**71**	**54**	**182**

1 Including patent cost
2 Including depreciation

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4Q FINANCIAL SNAPSHOT

Key figures

Net cash flow in 4Q

128 / 14.5

NOK million **USD million**

NOK 175m Rights Issue executed December 2021/4Q

Cash at end of 4Q

182 / 20.1

NOK million **USD million**

Market cap

331 / 38

NOK million **USD million**

Daily value traded

Average last 12 months

2.7 / 0.3

NOK million **USD million**

Shareholder base

	Estimated ownership[1]	
Shareholder	**Shares million**	**Ownership**
Avanza Bank AB (nom.)	16.7	8.9 %
HealthCap	12.4	6.6 %
FJARDE AP-FONDEN	8.7	4.6 %
ABN Amro Global (nom.)	6.0	3.2 %
Goldman Sachs & Co (nom.)	5.2	2.8 %
Nordea	4.5	2.4 %
RadForsk	4.4	2.4 %
Bækkelaget Holding	4.2	2.3 %
Danske Bank (nom.)	2.6	1.4 %
Thorendahl Invest	2.0	1.1 %
10 largest shareholders	**66.8**	**35.5 %**
Other shareholders (5 002)	121.5	64.5 %
Total shareholders	**188.3**	**100.0 %**

1 As per 7 February 2022

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THE TARGOVAX OPPORTUNITY - HIGH AND GROWING MEDICAL NEED FOR IMMUNE ACTIVATORS

CPIs are revolutionizing cancer therapy…

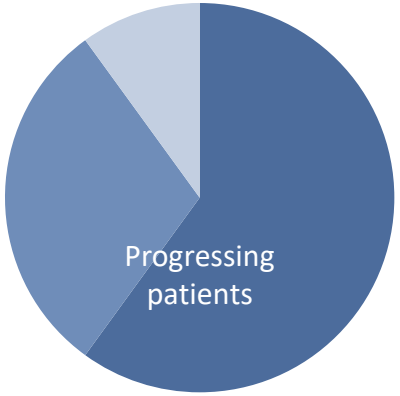
$25bn

Global CPI market

44%

Patients eligible for CPI[2]:

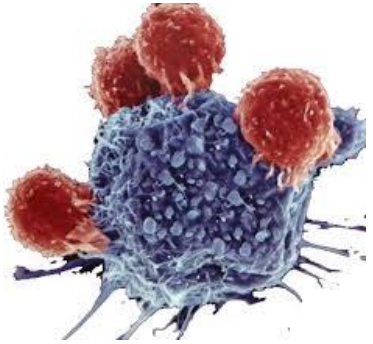
…but most patients do not respond…



60 - 90%

Non-responders

…leading to a high medical need for immune activators



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

2 Estimation of the Percentage of U.S. 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.

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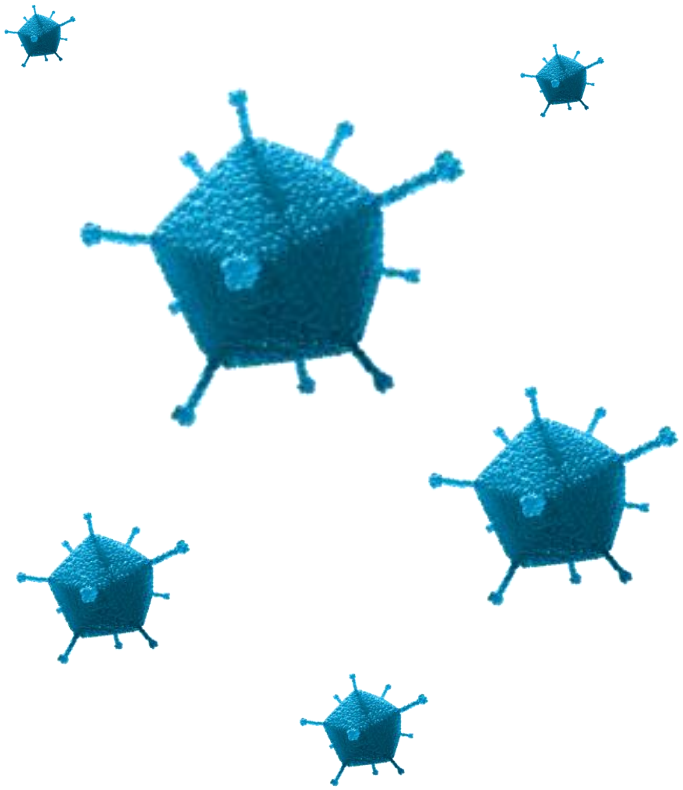
THE ONCOS PLATFORM: IMMUNE ACTIVATING ONCOLYTIC DELIVERY SYSTEM



Unblinds the tumor to the immune system

Primes the patient´s T-cells to target cancer cells

Reverses immunosuppressive defence mechanisms in the tumor

Delivers immune stimulatory payloads

TARGOVAX IS CENTERED AROUND FOUR CORE IMMUNE ACTIVATOR DEVELOPMENT PROJECTS

1

ONCOS-102 local delivery

Clinical phase 2

- Efficacy and mechanism-of-action confirmed in multiple settings
- Class-leading data in PD1 refractory melanoma

2

ONCOS-102 systemic delivery

Pre-clinical in vitro / in vivo

- Technology evaluation to enable virus “stealthing” in circulation ongoing
- Broaden opportunity to deep / metastatic tumors

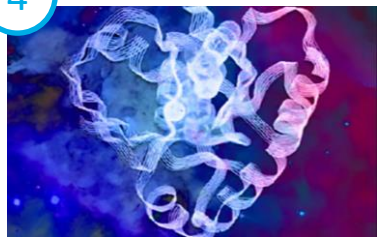
3

ONCOS circRNA delivery platform

Discovery / in vitro PoC

- Build ONCOS vector platform for circRNA delivery
- Develop multi-functional vectors with coding and non-coding payloads

4



mutant KRAS immunotherapy

Clinical phase 1

- Clinical stage polyvalent mutKRAS vaccine
- Exploring novel KRAS IO concepts

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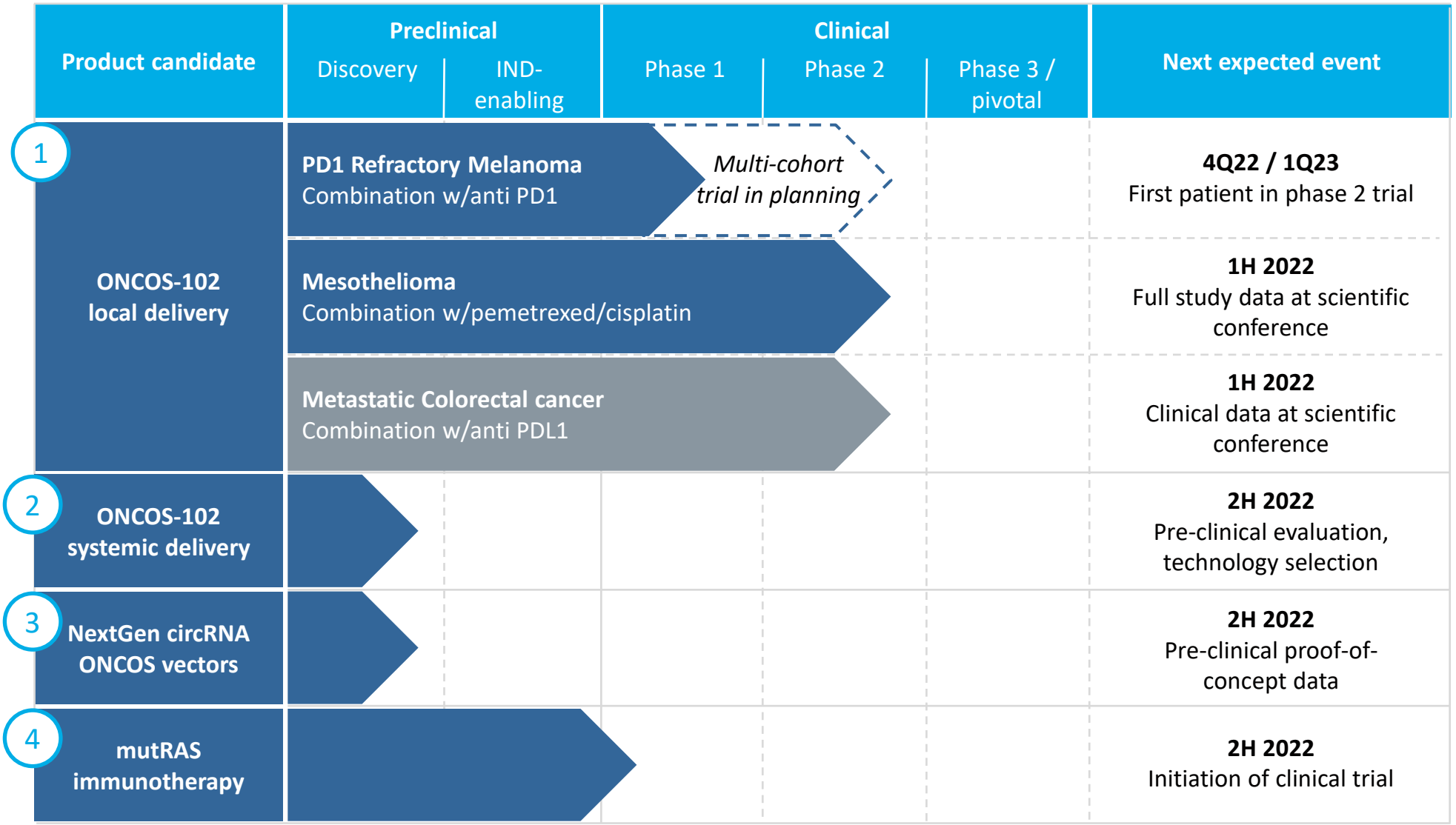
TARGOVAX DEVELOPMENT PIPELINE



Trial run by collaboration consortium

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TARGOVAX DEVELOPMENT PIPELINE

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	Discovery	IND-enabling	Phase 1	Phase 2	Phase 3 / pivotal	
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NextGen circRNA ONCOS vectors						**2H 2022** Pre-clinical proof-of-concept data
mutRAS immunotherapy						**2H 2022** Initiation of clinical trial

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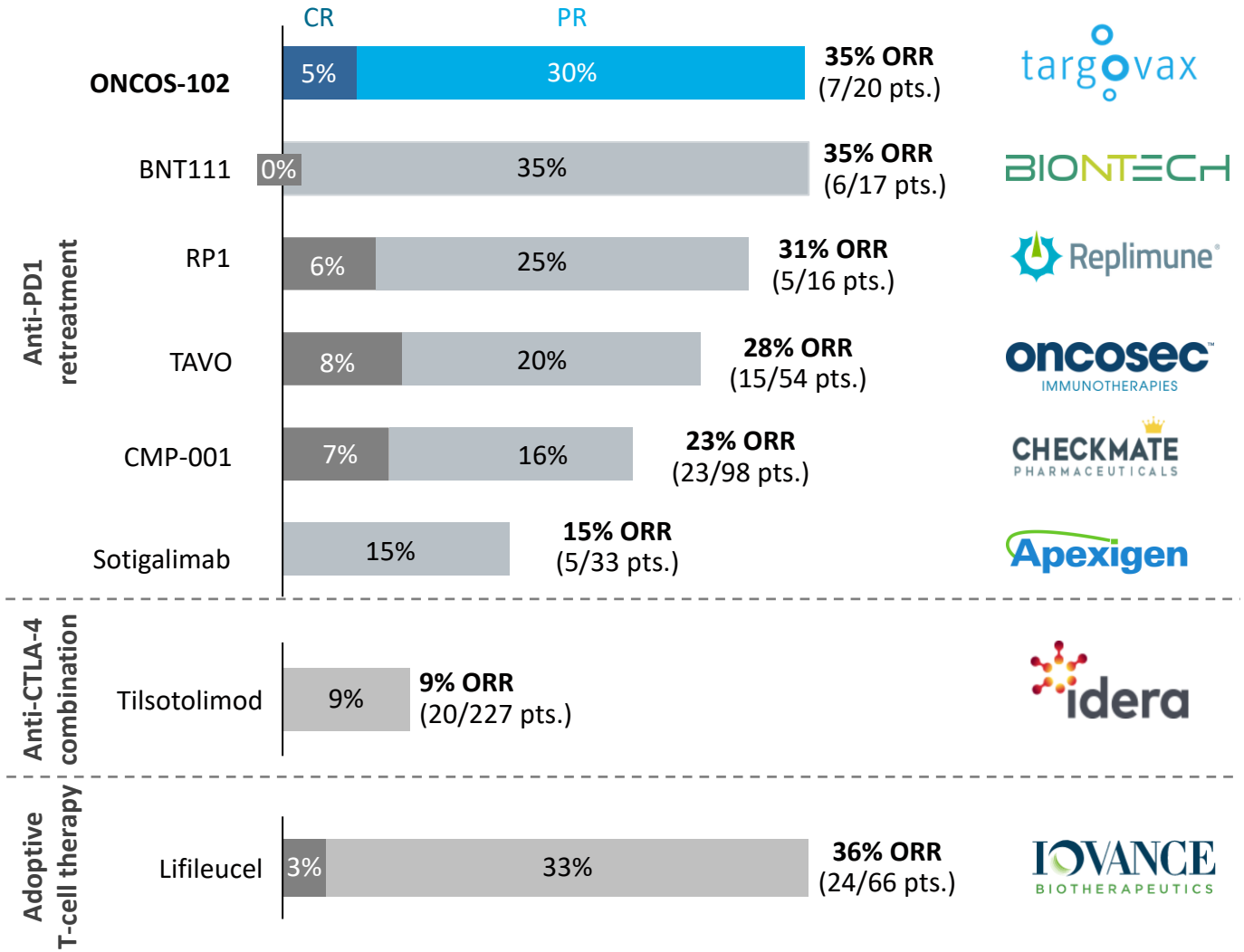
CLASS LEADING ORR OF 35% SHOWN IN PD1 REFRACTORY MELANOMA PHASE 1 STUDY

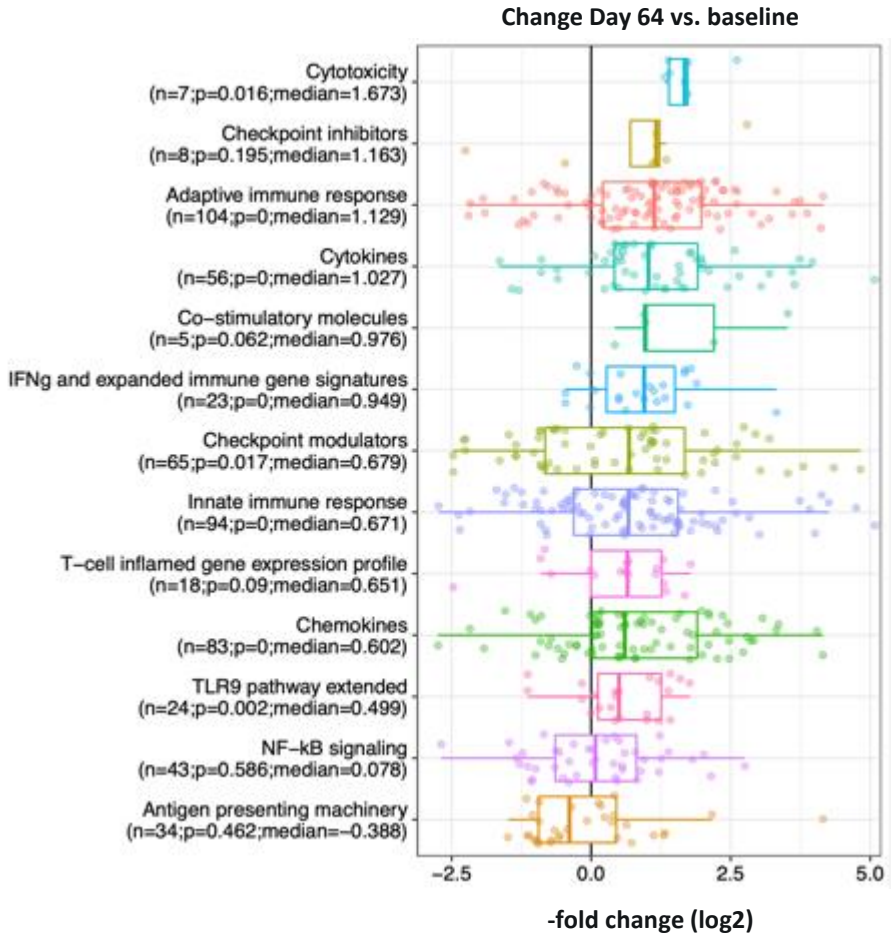


Targovax market analysis, November 2021

GENE EXPRESSION DATA SHOWS BROAD, PRO-INFLAMMATORY TUMOR RE-PROGRAMING

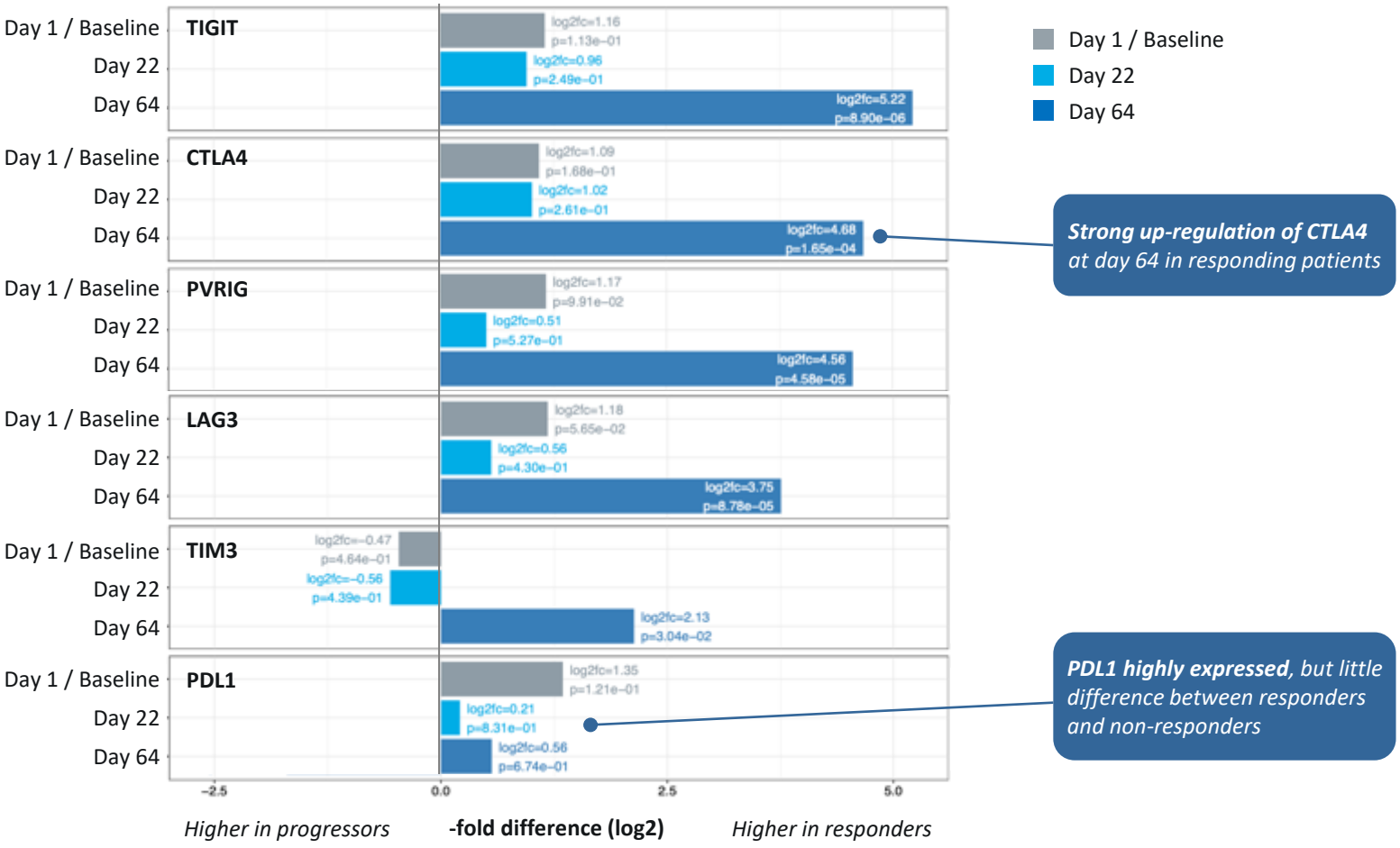
RNAseq gene expression provides further insights:

- **Pro-inflammatory "hot" tumor remodeling** through multiple molecular pathways
- **"Hot" tumor remodeling persists** at least until Day 64, following 6 ONCOS-102 administrations and 3 weeks post previous ONCOS-102 injection
- Increased expression of chemokines and cytokines **explain higher immune cell infiltrate**
- Strong upregulation of cytotoxic machinery **explains tumor shrinkage**
- Upregulation of immunomodulatory receptors present **opportunities for additional targets for novel combinations beyond anti-PD1**



ONCOS-102 DRIVES ROBUST UPREGULATION OF IMMUNE CHECKPOINT INHIBITORS, PARTICULARLY IN RESPONDERS

Expression of immune checkpoint inhibtors, tumor biopsy RNAseq, difference PR vs. PD patients



Strong up-regulation of CTLA4 *at day 64 in responding patients*

PDL1 highly expressed*, but little difference between responders and non-responders*

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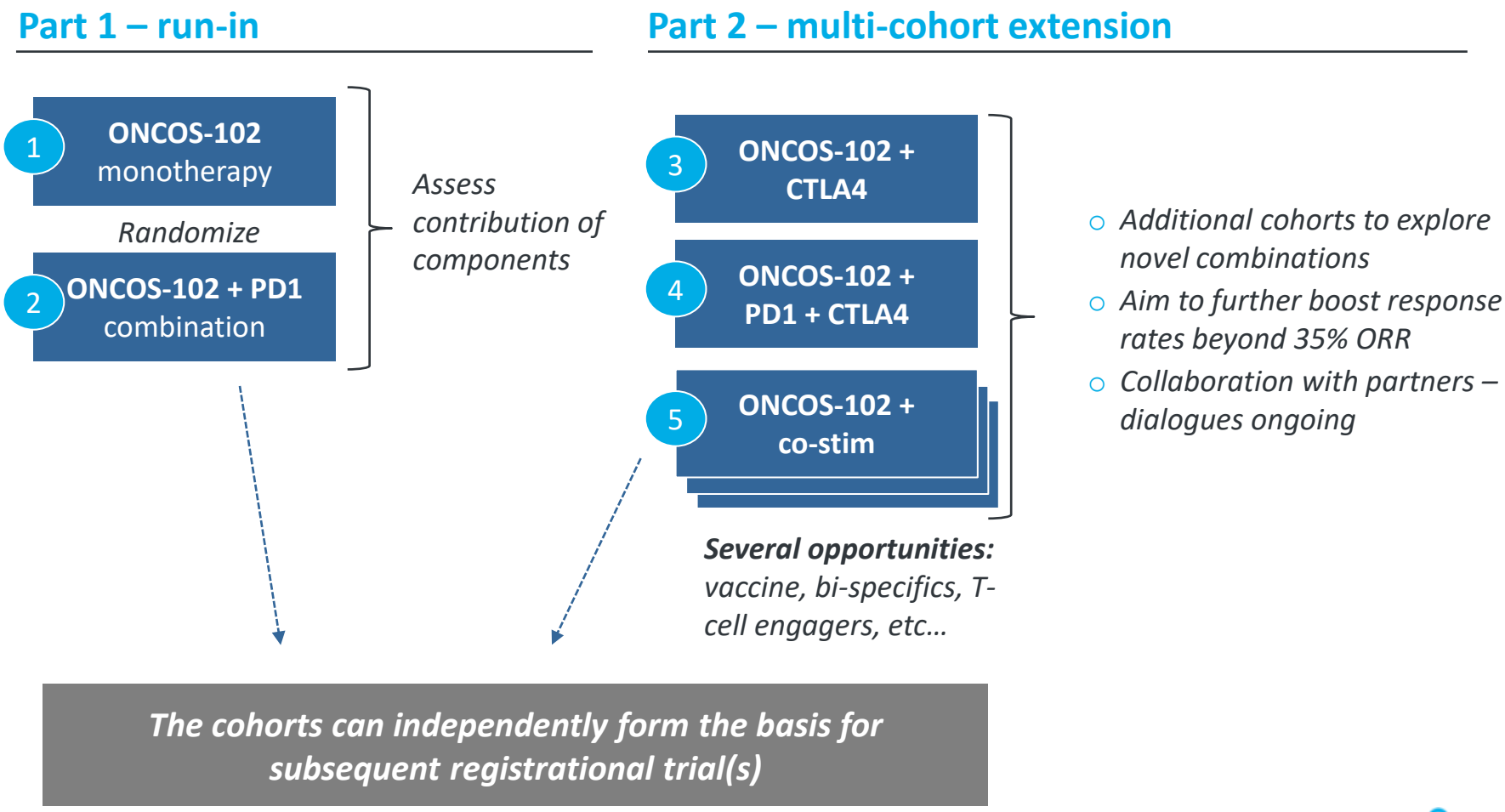
NEXT STEP: MULTI-COHORT PHASE 2 TRIAL TO IDENTIFY BEST COMBINATION PARTNER FOR REGISTRATIONAL TRIAL(S)



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TARGOVAX DEVELOPMENT PIPELINE

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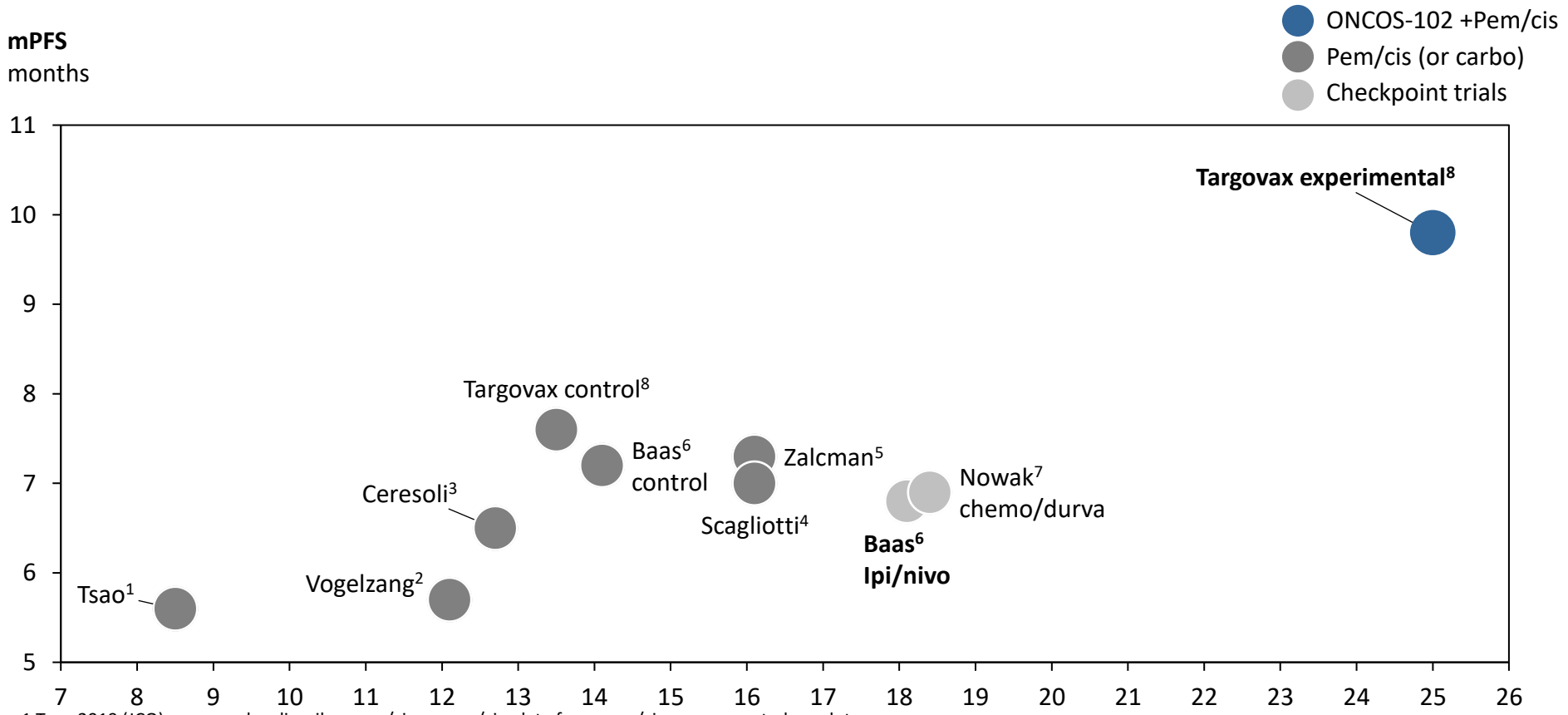
ONCOS-102 HAS SHOWN 25.0 MONTHS mOS IN 1L MESOTHELIOMA, WHICH IS THE BEST SURVIVAL DATA REPORTED IN THIS POPULATION

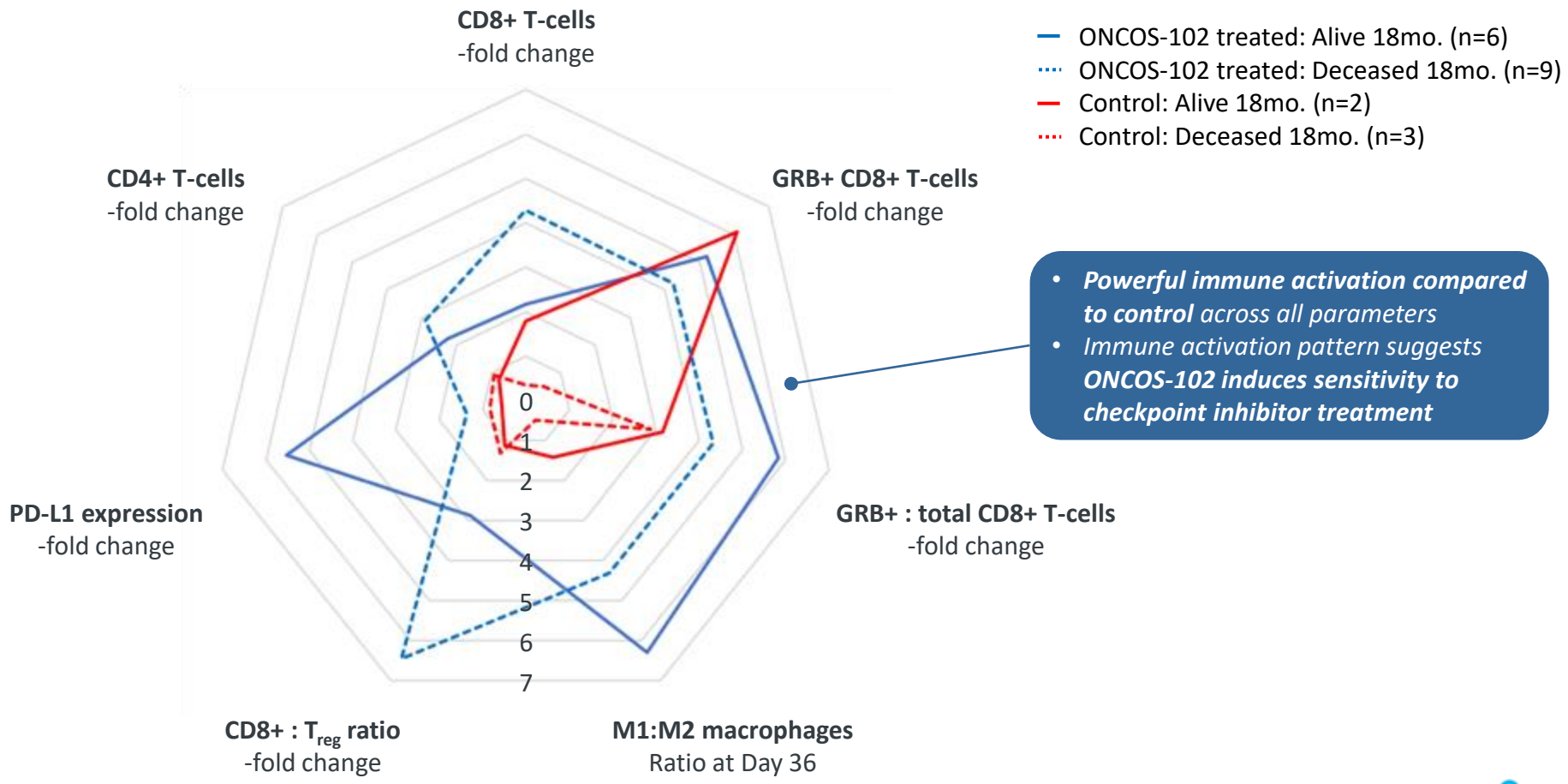


1 Tsao 2019 (JCO) compared cediranib + pem/cis vs pem/cis; data from pem/cis arm presented on plot
2 Vogelzang 2003 was the basis for FDA approval of pemetrexed.
3 Ceresoli 2006, Pemetrexed plus carboplatin
4 Scagliotti 2019 (Lancet) compared nintedanib + pem/cis vs pem/cis; data from pem/cis arm presented on plot
5 Zalcman 2016 (Lancet) compared bevacizumab + pem/cis vs pem/cis; data from pem/cis arm presented on plot.
6 Baas 2021 (The Lancet) 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.
7 Nowak 2020 (Lancet Oncology) Pem / cis (6 cycles) + durvalumab (12 months)
8 1L randomized patients mOS not final: Experimental group, 8 patients (3 censored). Control group, 6 patients (0 censored)

mOS: median Overall Survival. mPFS: median Progression Free Survival

IMPROVED SURVIVAL OUTCOME IS ASSOCIATED WITH POWERFUL ONCOS-102 INDUCED IMMUNE ACTIVATION

Immuno-modulation in tumor tissue; mIHC, Day 36 vs. baseline



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ONCOS-102 LOCAL DELIVERY: A CLINICALLY VALIDATED ONCOLYTIC IMMUNE ACTIVATOR

Tested in several treatment **refractory** and immunologically **cold** solid tumors

Treatment-resistant patients

Demonstrated ability both to **shrink tumors** and improve **survival** outcomes

Clinical activity

Drives inflammatory response and **immunological remodelling**, associated with clinical outcome

Validated mode-of-action

Phase 2 multi-cohort trial in aPD1-refractory melanoma under planning, building on deep translational insights in phase 1

Novel combinations to enhance efficacy

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TARGOVAX DEVELOPMENT PIPELINE

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THE NEXT FRONTIER – ENABLING SYSTEMIC DELIVERY OF ONCOLYTIC VIRUSES

Unlikely to work

IV infusion of "naked" OVs

- Short half-life
- Liver filtration
- Formation of NAbs

Ongoing pre-clinical activity

Packaging / coating of OV in inert particles

- Extend half-life
- Prevent NAb formation
- Additional formulation / CMC step

"Stealthing" OV by capsid modification

- Genetic modification to enable stealth mode whilst in circulation
- Spends payload capacity

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TARGOVAX DEVELOPMENT PIPELINE

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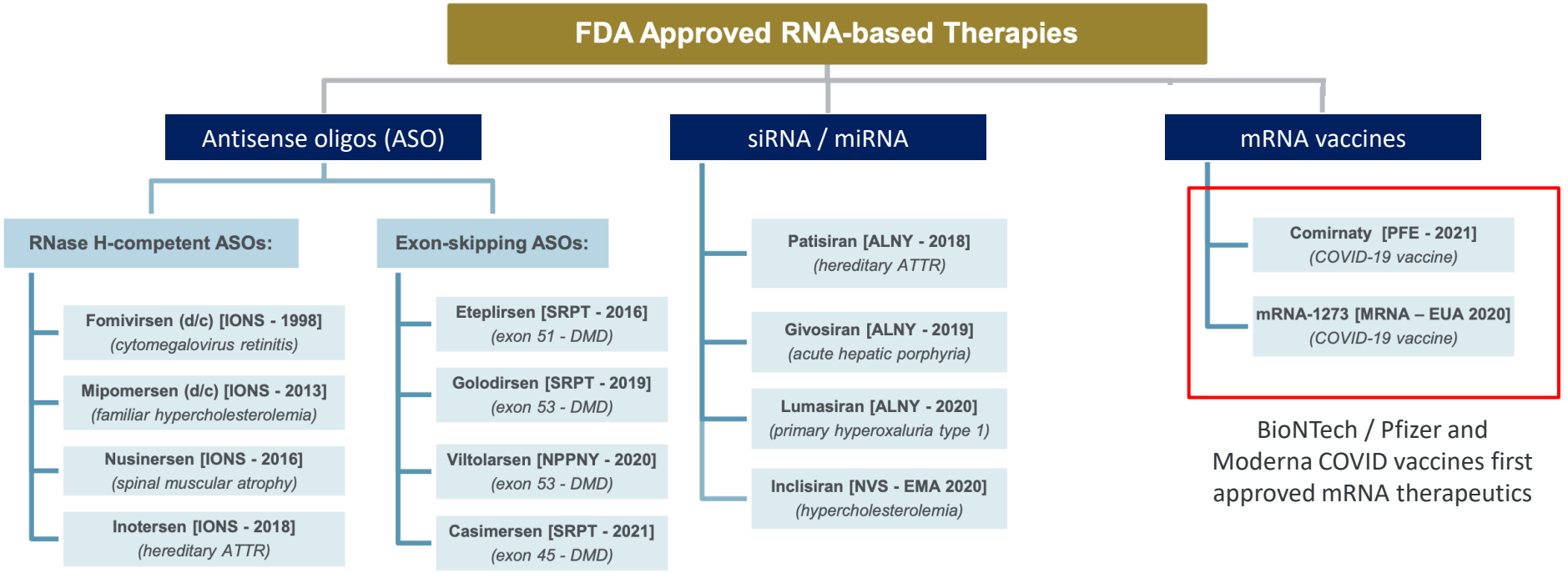
RNA: EMERGING THERAPEUTIC CLASS, DRIVEN BY STRONG RECENT SUCCESS IN COVID mRNA VACCINES



BioNTech / Pfizer and Moderna COVID vaccines first approved mRNA therapeutics

No circRNA therapeutic candidates are approved or in clinical stage development

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RNA-BASED THERAPEUTICS FACE SEVERAL CHALLENGES

Challenges for RNA-based therapies

RNA is chemically unstable

Efficient delivery of RNA drugs remains a major obstacle

Challenging to achieve sufficient spread and penetration into tumors

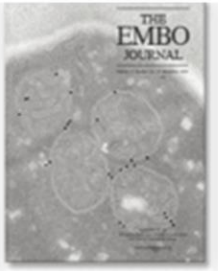
ONCOS solves these issues through a clinically validated DNA based delivery system that ensures local RNA expression and persistence in the tumor micro-environment

RNA EXISTS NATURALLY IN CIRCULAR FORM AND CAN BE ENGINEERED FOR PROTEIN TRANSLATION

Article | 30 September 2011 | FREE ACCESS

miRNA-dependent gene silencing involving Ago2-mediated cleavage of a circular antisense RNA

Thomas B Hansen,Erik D Wiklund,Jesper B Bran
Jørgen Kjems



About the cover

Volume 30
Issue 21
2 November 2011

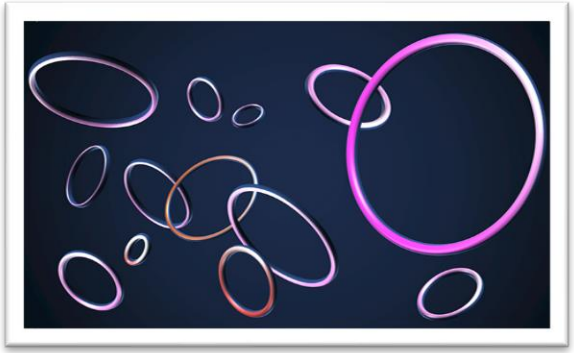
IN THIS ISSUE

768 citations

circRNA discoverers are in the Targovax team

Thomas B. Hansen

Erik D. Wiklund



nature

Explore content

nature > letters > article

Published: 27 February 2013

Natural RNA circles function as efficient microRNA sponges

Thomas B. Hansen, Trine I. Jensen, Bettina H. Clausen, Jesp
K. Damgaard & Jørgen Kjems

Nature 495, 384–388 (2013) | Cite this article

95k Accesses | 3825 Citations | 115 Altmetric | Metrics

nature communications

Article | Open Access | Published: 06 July 2018

Engineering circular RNA for potent and stable translation in eukaryotic cells

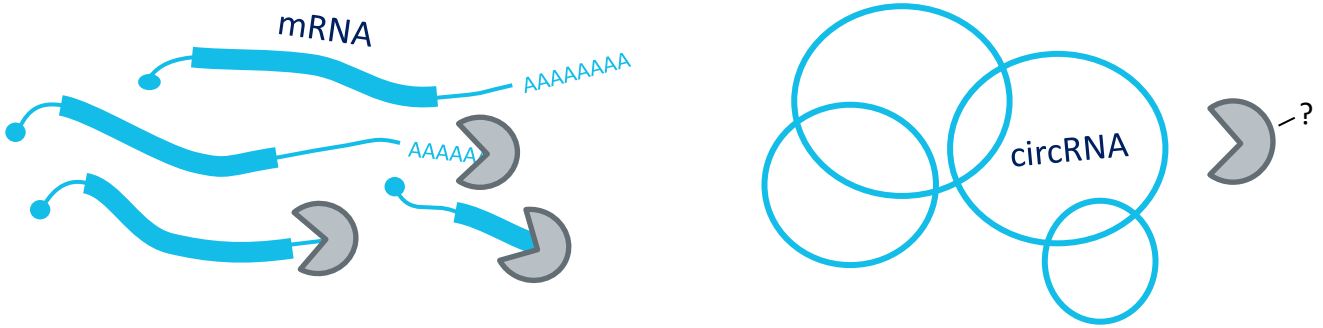
R. Alexander Wesselhoeft, Piotr S. Kowalski & Daniel G. Anderson

CIRCULAR RNA HAVE MULTIPLE ADVANTAGEOUS CHARACTERISTICS AS ANTI-CANCER THERAPEUTICS

Sponging *of oncogenic microRNAs*

Translation for local ***gene therapy***

Circular RNA is resistant to exonuclease degradation



Immunological activation *through pattern recognition receptors (PRR)*

Transcriptional regulation *of target genes*

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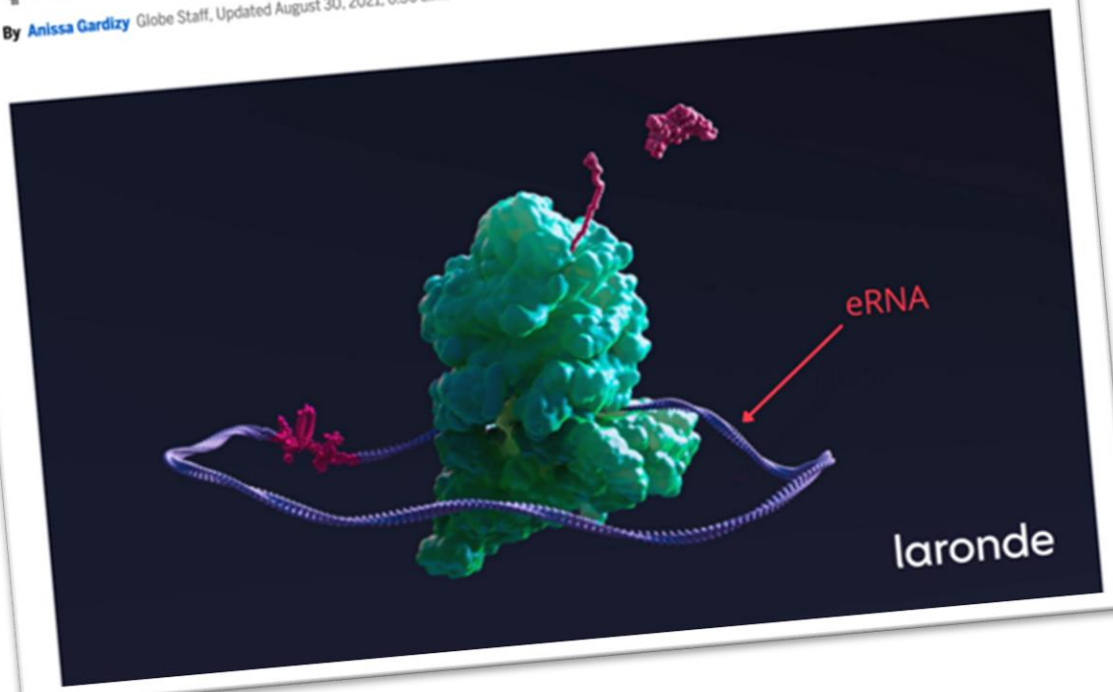
RECENT LAUNCHES OF CIRCULAR RNA GENE THERAPY BIOTECHS HAVE ATTRACTED MEGA SERIES A ROUNDS

As RNA remains hot, Flagship's Laronde raises $440m for a new class of medicines

By Anissa Gardizy Globe Staff, Updated August 30, 2021, 6:30 a.m.



moderna

Flagship Pioneering

FIERCE Biotech

RESEARCH CRO MEDTECH TRENDING TOPIC

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Biotech

Orna Therapeutics debuts with $100M, engineered circular RNA treatments to rival cell therapies

nature biotechnology

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nature > nature biotechnology > news > article

News | Published: 02 September 2021

Startups set off new wave of mRNA therapeutics

Elie Dolgin

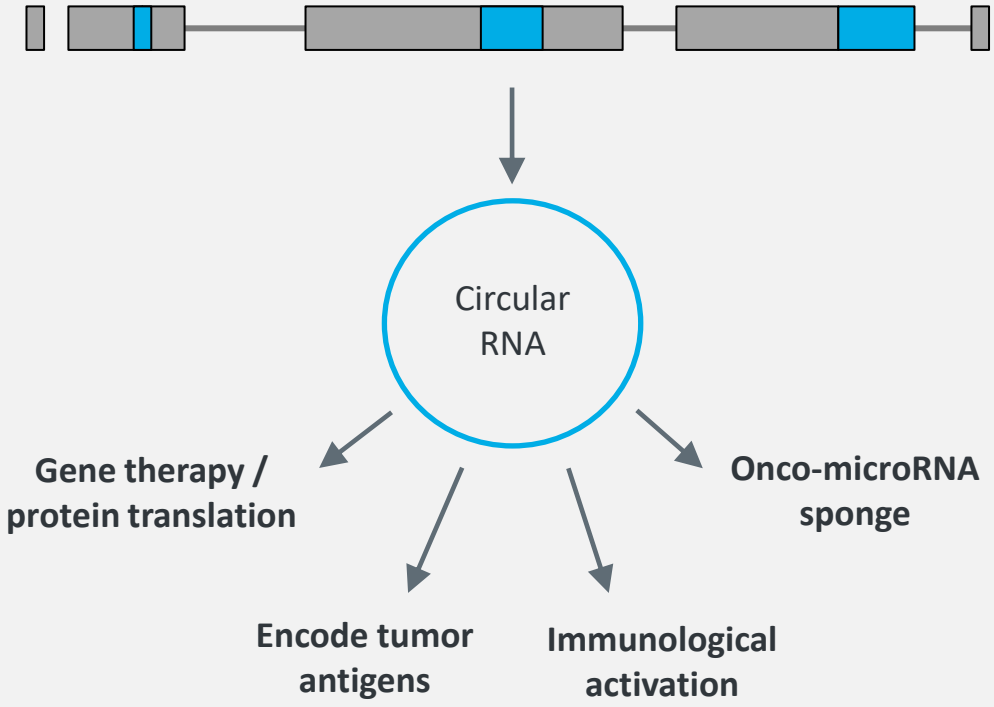
Nature Biotechnology **39**, 1029–1031 (2021) | Cite this article

13k Accesses | **155** Altmetric | Metrics

After the vaccine triumphs of Pfizer/BioNTech and Moderna, a raft of startups is developing mRNA, circular RNA and self-amplifying RNA therapeutics.

ONCOS PROVIDES AN IDEAL, CLINICALLY VALIDATED PLATFORM FOR CIRCULAR RNA

Novel ONCOS circRNA vectors



Highly verstaile delivery system

Aims of ONCOS circRNA program:

- Generate ***in vitro*** **proof-of-concept** data package by 2H 2022
- **Build technology platform** IP portfolio and know-how
- Construct **multi-functional novel circONCOS candidates** for in-house development
- **Establish collaborations** to generate circONCOS candidates encoding **partner´s payload of choice**

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BUILDING MUTANT KRAS IMMUNOTHERAPY PROGRAM THROUGH STRATEGIC PARTNERSHIPS

Targovax mutRAS immunotherapy strategy

Polyvalent mut KRAS cancer vaccine

Clinical stage

- Enhanced versions of TG vaccines and novel combination strategies
- NOK 18m in research grant funding

Next generation mutRAS concepts

Pre-clinical discovery

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

mutant KRAS immunotherapy pipeline

TG01 mutRAS vaccine – trial to launch in 2022 testing novel indications and IO combinations

IOVAXIS THERAPEUTICS

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

VALO THERAPEUTICS

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

OBLIQUE THERAPEUTICS

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

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DELIVERING ON THE CORE DEVELOPMENT PROJECTS

1

Local ONCOS-102 delivery melanoma

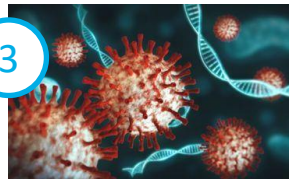
- *Execute multi-cohort trial in PD1 refractory melanoma*
- *Boost ORR by novel, data-driven IO combinations*
- *Expand in skin cancers and other injectable tumors*

2

ONCOS systemic delivery

- *Evaluate technologies to shield virus in circulation*
- *Establish in vivo proof-of-concept*
- *Expand into deeper / metastatic cancer indications*

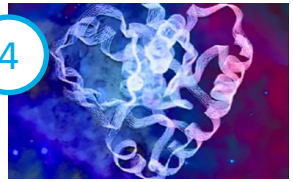
3



NextGen vectors for circRNA delivery

- *Validate concept and build circular RNA IP portfolio*
- *Add targeted, immune-stimulatory payloads*
- *Engineer-in novel regulatory functionality*

4



Mutant KRAS vaccine program

- *Assess new indications and IO combinations for TG vaccines through cost-efficient IIT studies*
- *Expand with novel mutRAS immunotherapy concepts*

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