



ACTIVATING THE PATIENT'S IMMUNE SYSTEM TO FIGHT CANCER

3Q 2021 Presentation

4 November 2021



targovax

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Introduction and highlights

2. ONCOS-102 melanoma data
3. NextGen ONCOS vectors
4. Strategy

TARGOVAX AT A GLANCE

ONCOS-102 is the best validated immune activator in aPD1 refractory melanoma

ONCOS-102: Novel immune activator with clinical efficacy in several solid tumors in monotherapy and in combination with anti-PD1 and chemotherapy

MoA confirmed in multiple indications: Broad local and systemic immune activation associated with clinical outcome

Preparing a platform trial based on class-leading responses: 35% ORR in anti-PD1 refractory melanoma and 24-month mOS in mesothelioma

Market Exclusivity: ONCOS-102 is protected by composition of matter and method of use patents until 2037, 3 orphan and 2 fast track FDA designations

Innovative pipeline: Expanding the ONCOS platform to deliver highly targeted payloads and novel RNA concepts, and a clinical stage mutRAS program

3Q 2021 HIGHLIGHTS

Scientific

- Poster presentation at the European Society for Medical Oncology (ESMO) annual meeting in September
- Two posters accepted for presentation at the Society for Immunotherapy of Cancer (SITC) annual meeting in November

Patent

- Received grant of European Patent for ONCOS-102 in combination with chemotherapy

People

- Dr Lone Ottesen appointed as Chief Development Officer and Ola Melin appointed as Head of Manufacturing

Post-period

- In October, Dr. Erik Digman Wiklund was appointed as new CEO, having previously served as CFO and CBO of Targovax

THIRD QUARTER OPEX – CONTINUED LOW CASH BURN RATE

NOK m	3Q20	4Q20	1Q21	2Q21	3Q21
Total revenue	0	0	0	0	0
External R&D expenses	-9	-8	-9	-9	-10
Payroll and related expenses	-9	-12	-11	-13	-11
Other operating expenses	-4	-3	-2	-3	-2
Total operating expenses	-22	-23	-23	-25	-23
Operating loss	-22	-23	-23	-25	-23
Net financial items	-1	-3	1	-1	-1
Loss before income tax	-23	-26	-22	-26	-23
Net change in cash	-24	45	-27	-24	-17
Net cash EOP	78	122	95	71	54

1 Including patent cost

2 Including depreciation

3Q FINANCIAL SNAPSHOT

Key figures

Net cash flow in 3Q

-17 / -2.0

NOK million

USD million

Cash at end of 3Q

54 / 6.4

NOK million

USD million

Market cap

500 / 60

NOK million

USD million

Daily value traded

Average last 12 months

2.4 / 0.3

NOK million

USD million

Shareholder base¹

Ownership by professional institutions, e.g.

- *HealthCap, Nordea, Radforsk, AP4, MP Pension*

30%

Largest shareholder

- *HealthCap*

14%

Ownership by top 20 shareholders

48%

No of shareholders (approx.)

5600

CLINICAL AND PRECLINICAL PIPELINE

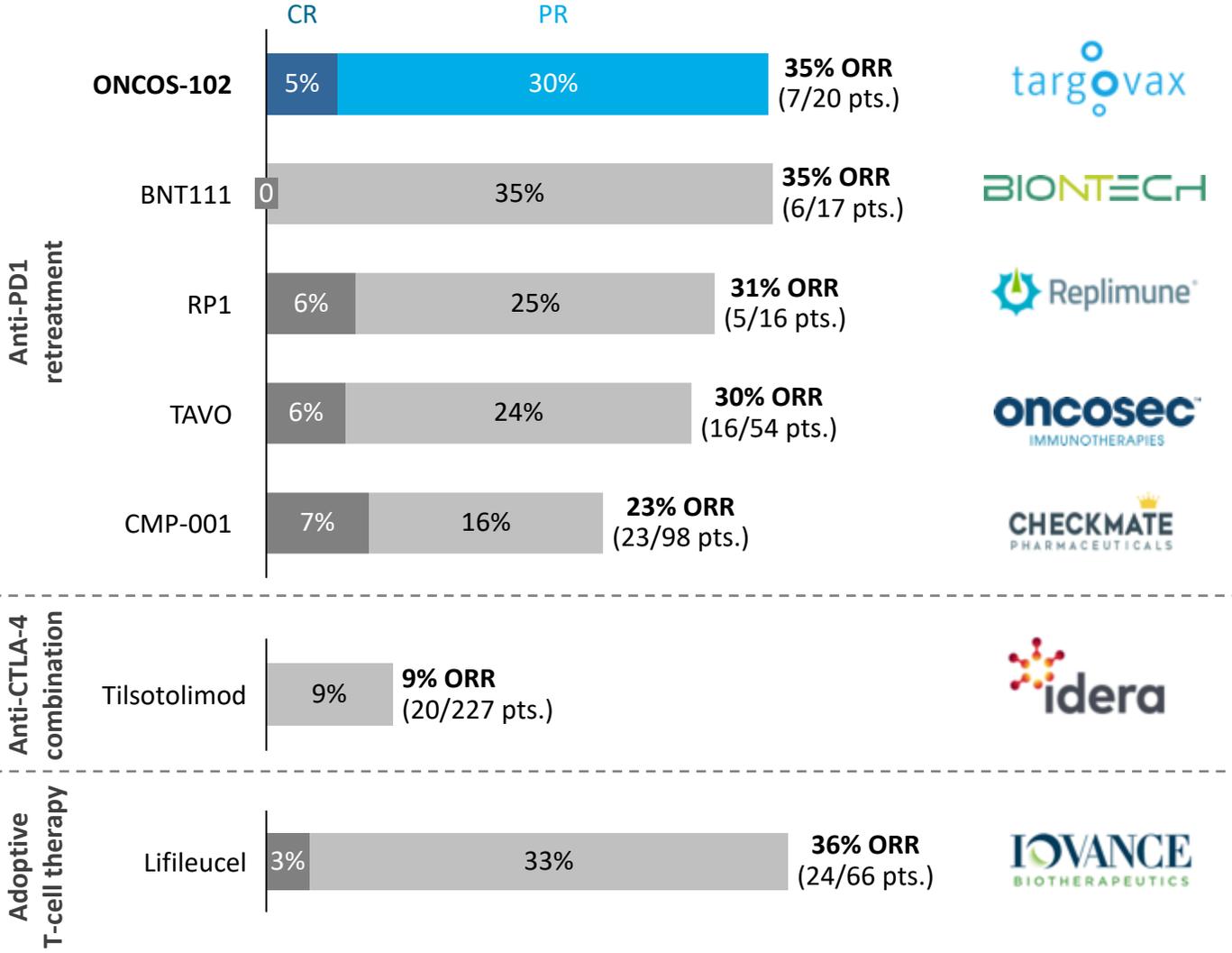
Product candidate	Preclinical	Phase 1	Phase 2	Phase 3	Next expected event
ONCOS-102	Refractory Melanoma Platform IO combination trial				2022 First patient
	Mesothelioma Combination w/pemetrexed/cisplatin				2H 2021 Survival update
	Metastatic Colorectal cancer Combination w/anti PDL1				1H 2022 Clinical data
NextGen ONCOS vectors					<i>Preclinical data and selection of candidates</i>
Novel mutRAS concepts					<i>Preclinical data and selection of candidates</i>

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ONCOS-102 melanoma data

3. NextGen ONCOS vectors
4. Strategy

ONCOS-102 HAS DEMONSTRATED CLASS-LEADING EFFICACY IN PD1-REFRACTORY MELANOMA



CASE EXAMPLE: PATIENT WITH COMPLETE RESPONSE

Tumor response, 1 of 1 injected lesion

Baseline

Week 3

Week 9

Week 18

Week 27 (EoS)



Progression on pembrolizumab



3x ONCOS-102 only
(no pembrolizumab)



3x ONCOS-102 &
2x pembrolizumab



3x ONCOS-102 &
5x pembrolizumab



3x ONCOS-102 &
8x pembrolizumab

CASE EXAMPLE: PATIENT WITH COMPLETE RESPONSE TUMOR T-CELL INFILTRATION

T-cell infiltrate, 1 of 1 injected lesion

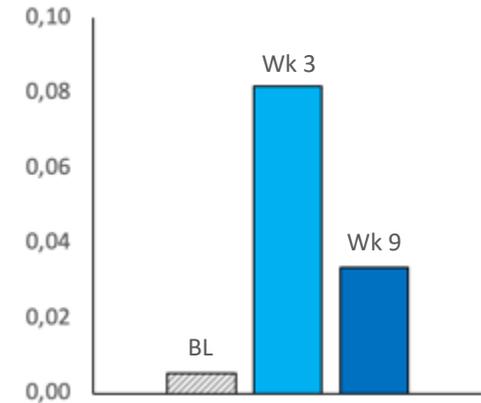
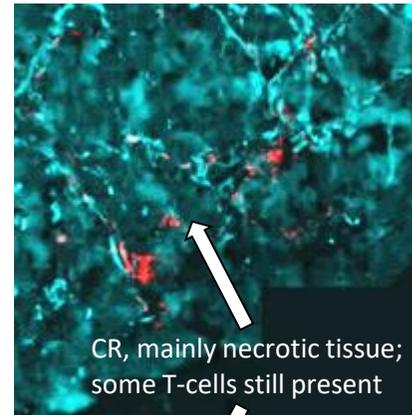
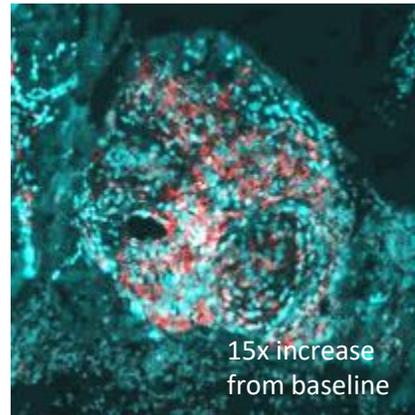
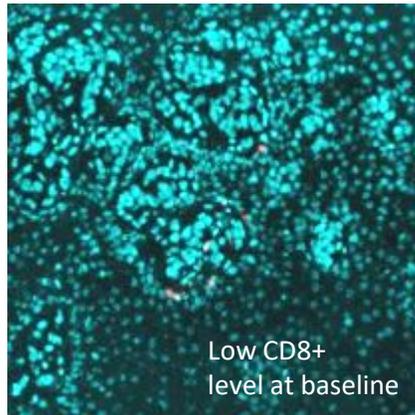
Baseline

Week 3

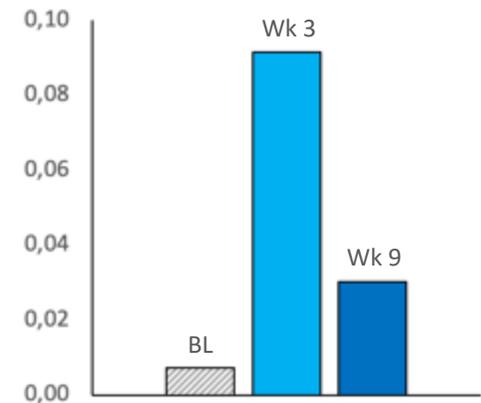
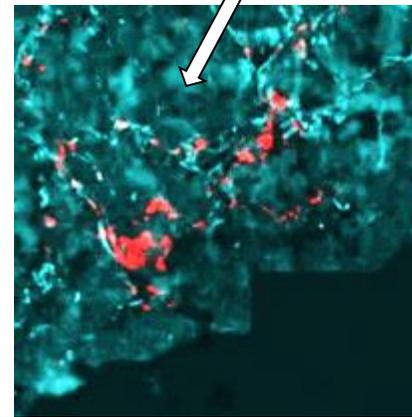
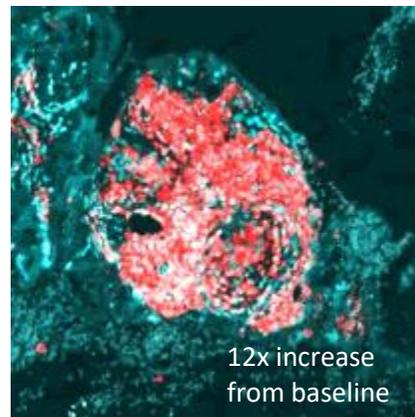
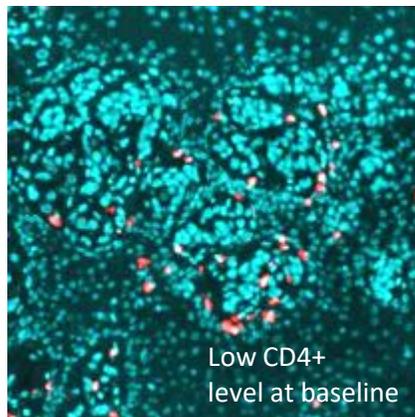
Week 9

Total level of T-cells

CD8+ T-cells



CD4+ T-cells



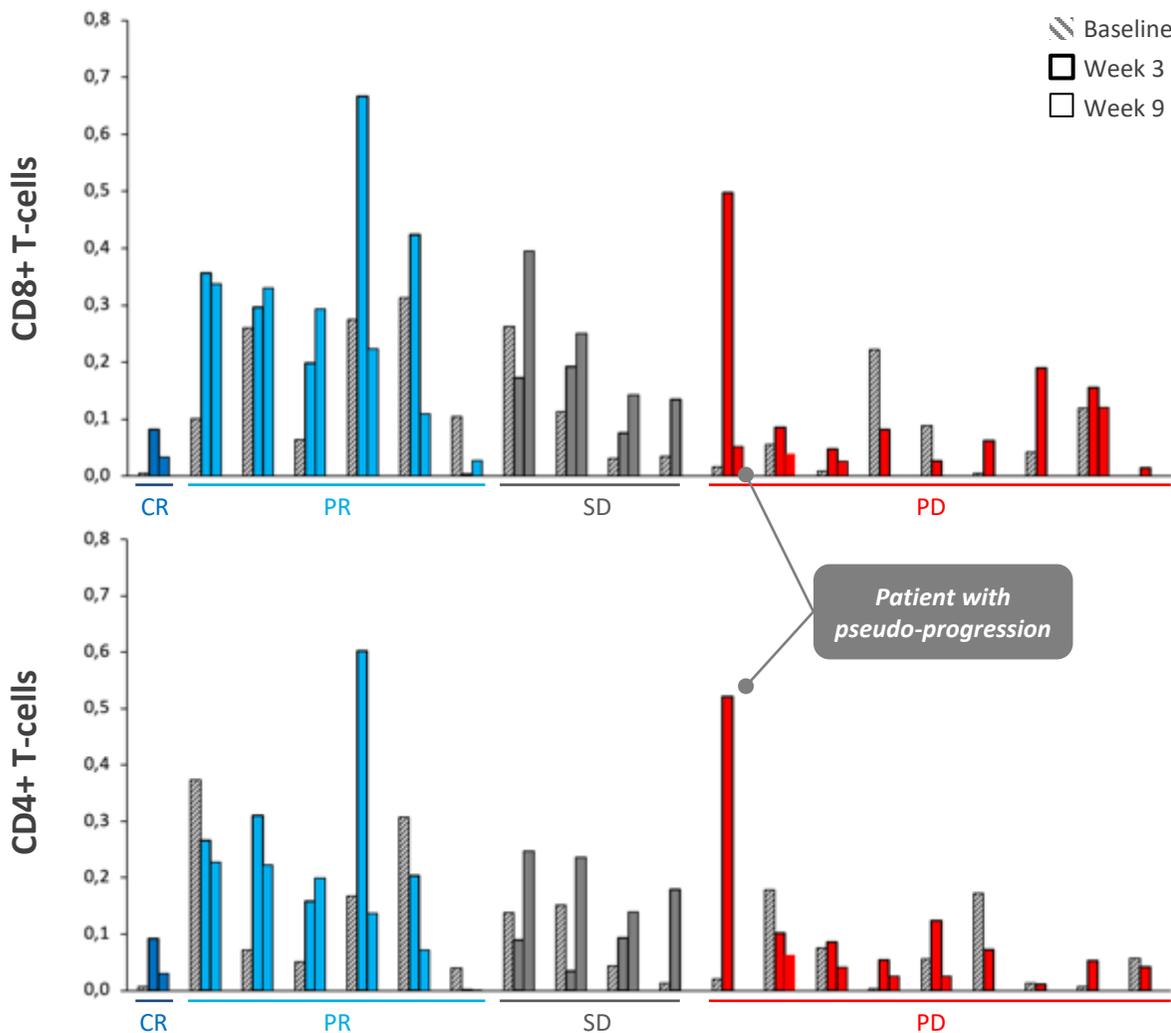
Progression on pembrolizumab

3x ONCOS-102 only

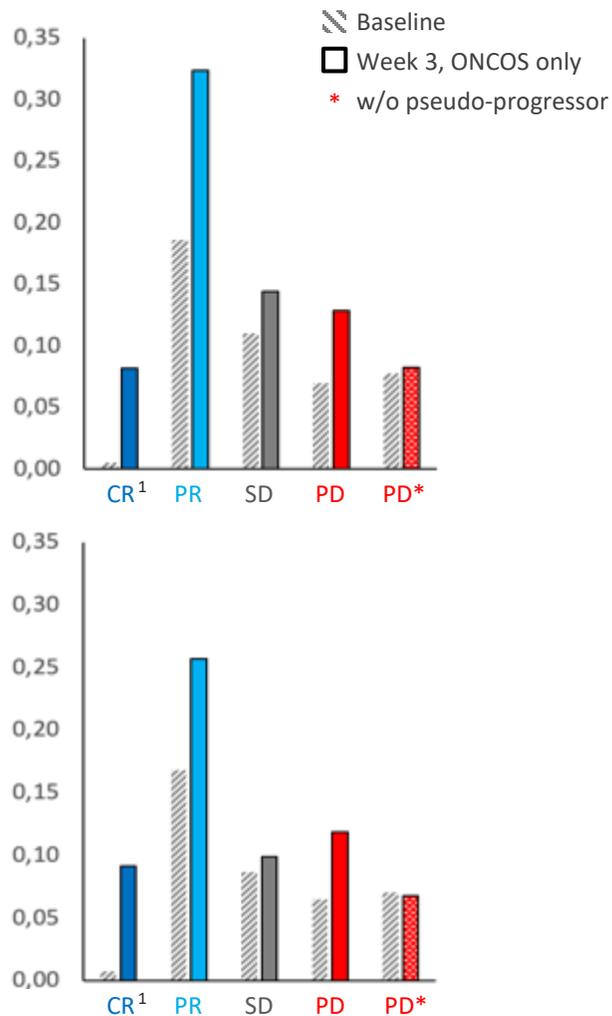
3x ONCOS-102 & 2x pembrolizumab

HIGHEST INCREASE IN TUMOR T-CELL INFILTRATES OBSERVED IN MELANOMA RESPONDERS

T-cell infiltrate (TIL) for individual patients; tumor mIHC, relative level



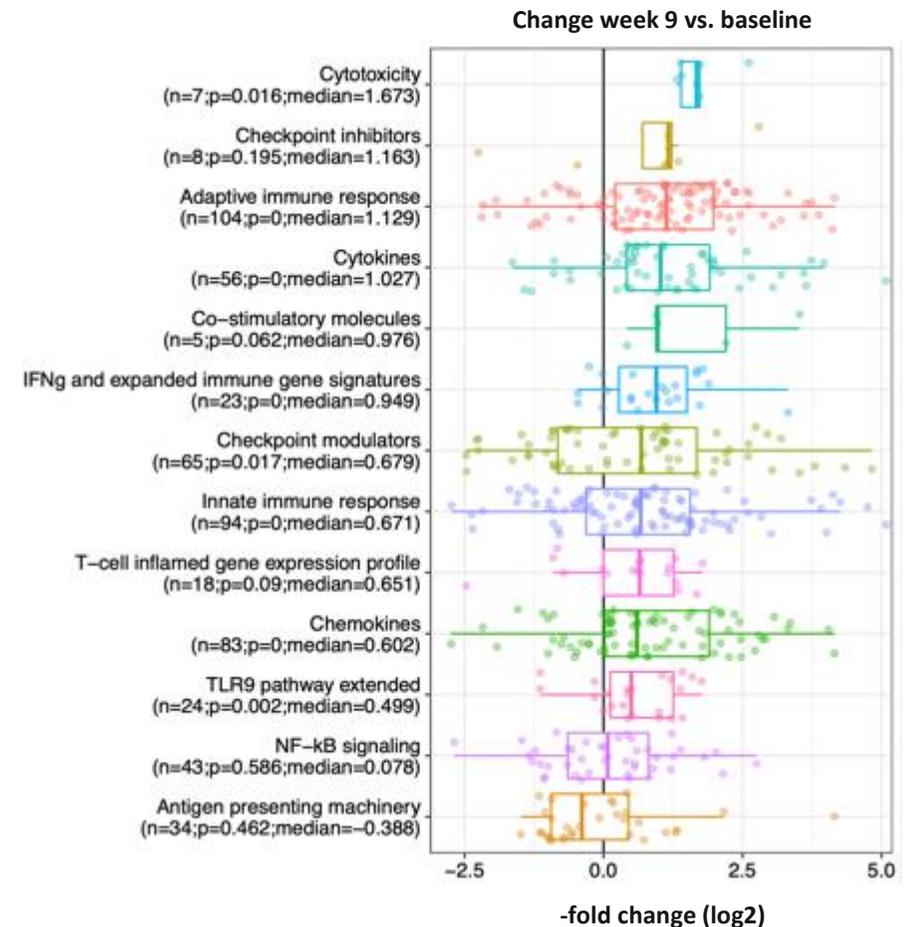
Average T-cell level per group



GENE EXPRESSION DATA CONFIRMS IHC OBSERVATIONS AND DETAILS BROAD PRO-INFLAMMATORY TUMOR RE-PROGRAMING

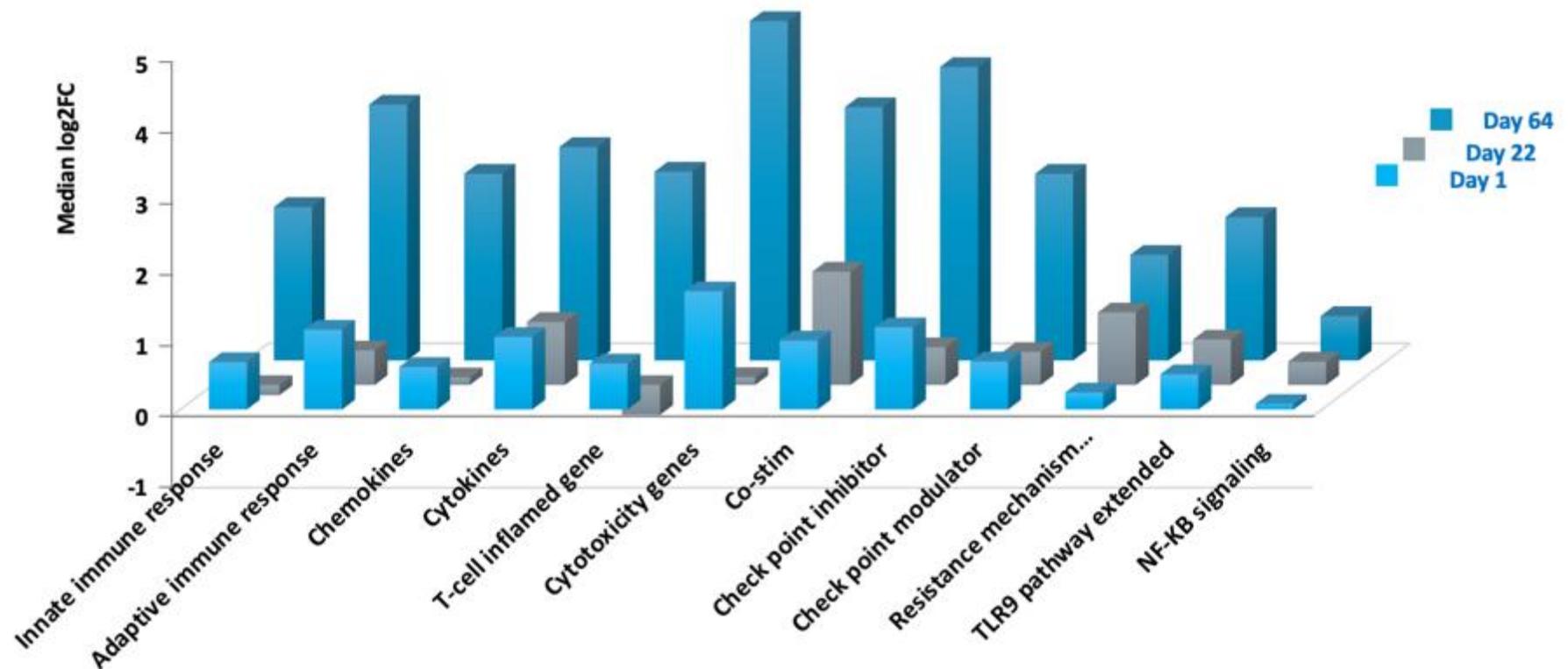
RNAseq gene expression provides further insights:

- **Pro-inflammatory “hot” tumor remodelling** through multiple pathways and molecular mechanisms
- **“Hot” tumor remodelling persists** at least until Day 64, following 6 ONCOS-102 IT 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 molecules present **targets for novel combinations beyond anti-PD1**



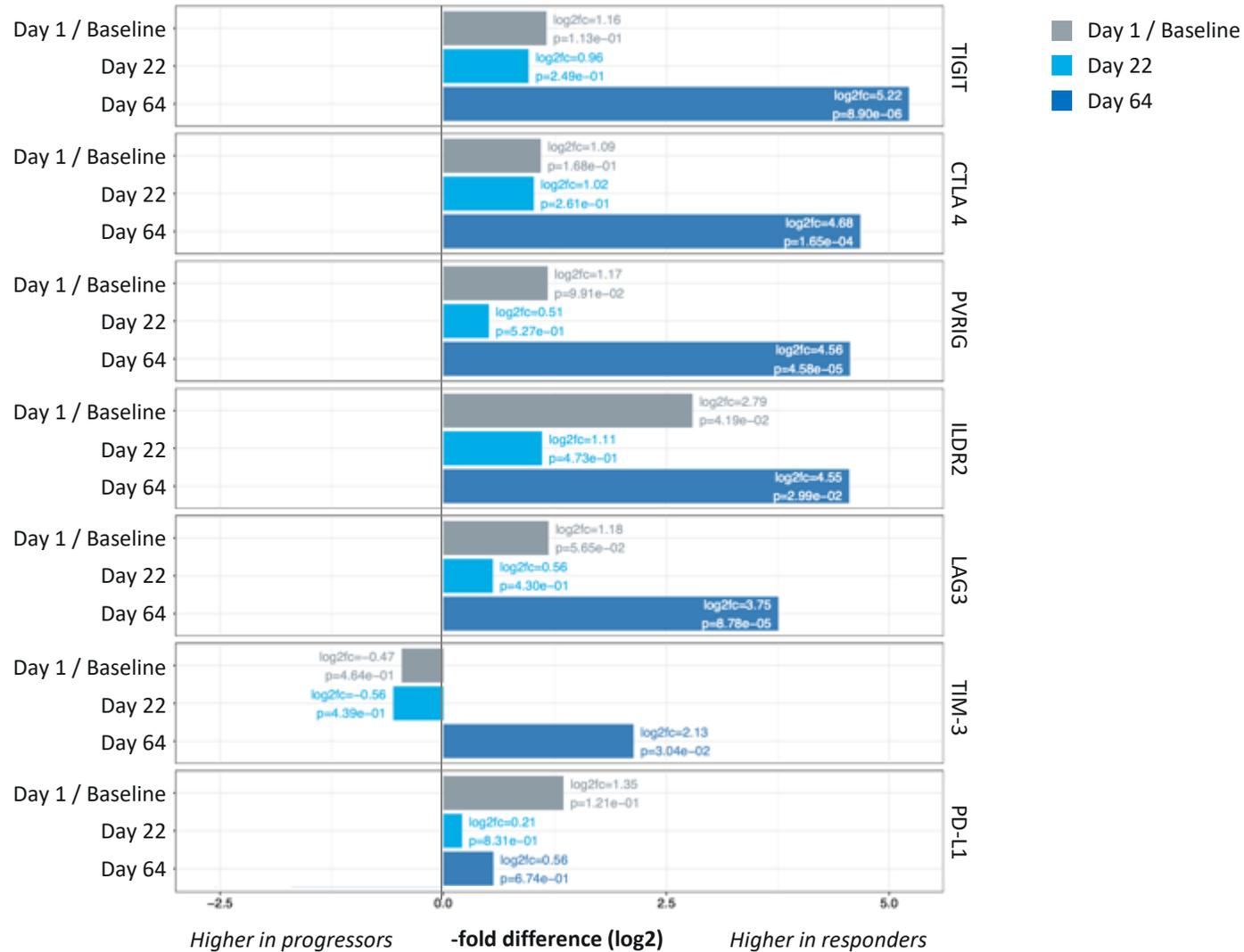
MORE SUBSTANTIAL AND SUSTAINED PRO-INFLAMMATORY TUMOR RE-PROGRAMMING IN RESPONDERS

Gene expression of immune related signatures, responders vs. non-responders, log(2) -fold difference



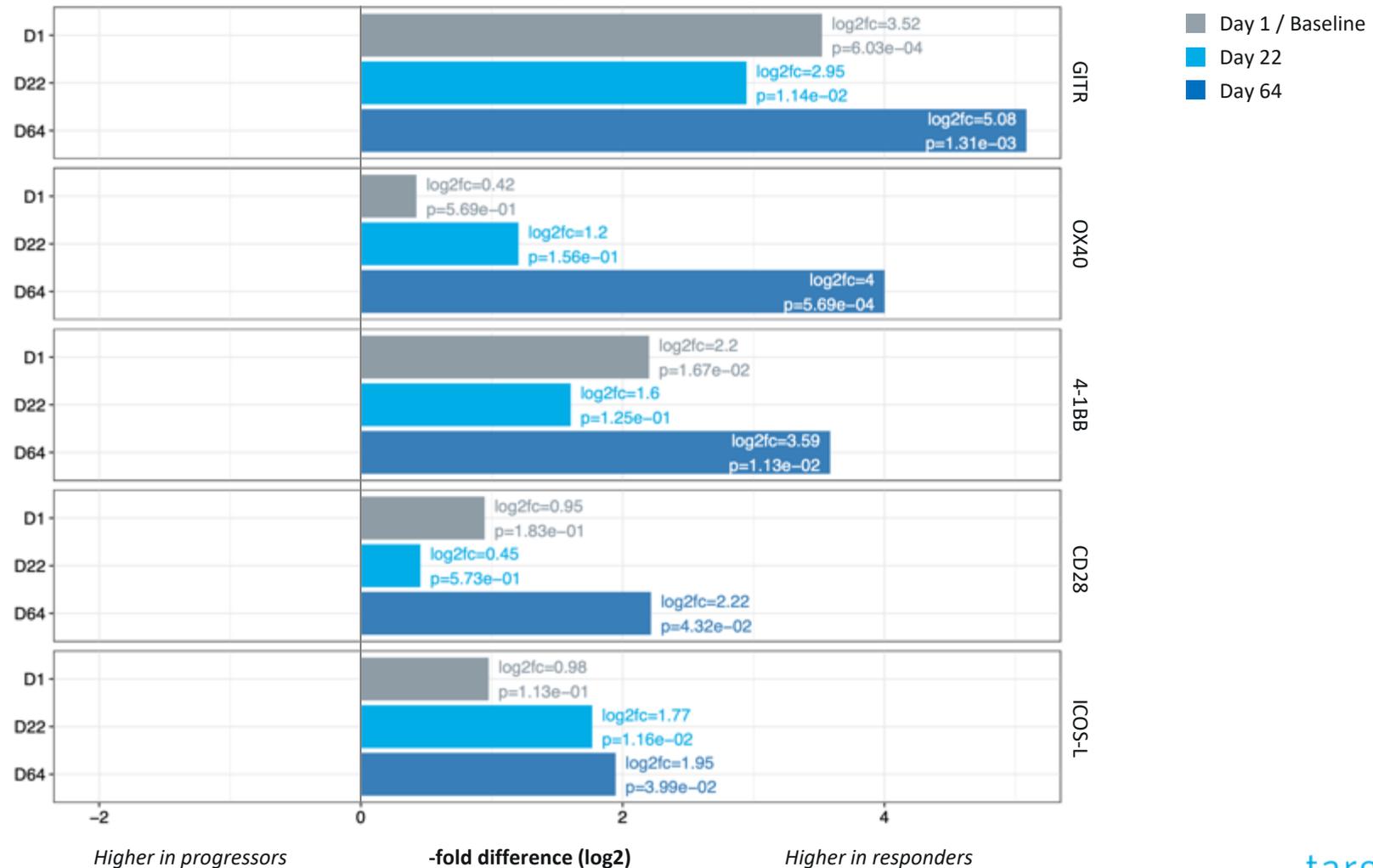
ONCOS-102 DRIVES ROBUST UPREGULATION OF IMMUNE CHECKPOINT INHIBITORS, PARTICULARLY IN RESPONDERS

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



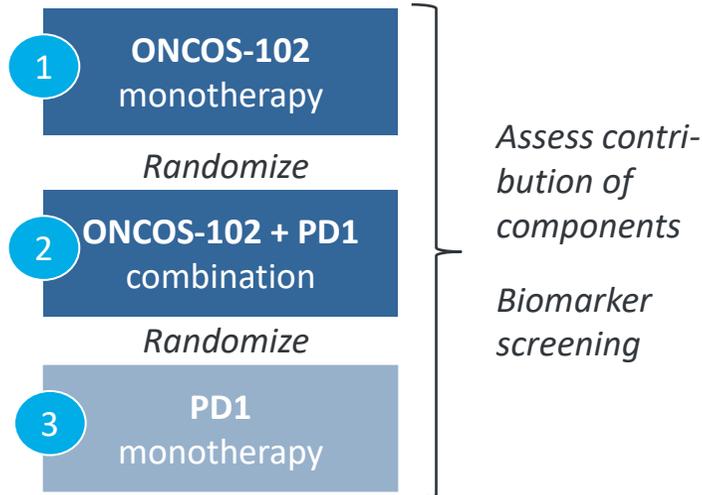
ONCOS-102 ALSO DRIVES ROBUST UPREGULATION OF CO-STIMULATORY MOLECULES, PARTICULARLY IN RESPONDERS

Expression of costimulatory molecules, tumor biopsy RNAseq, difference in PR vs. PD patients

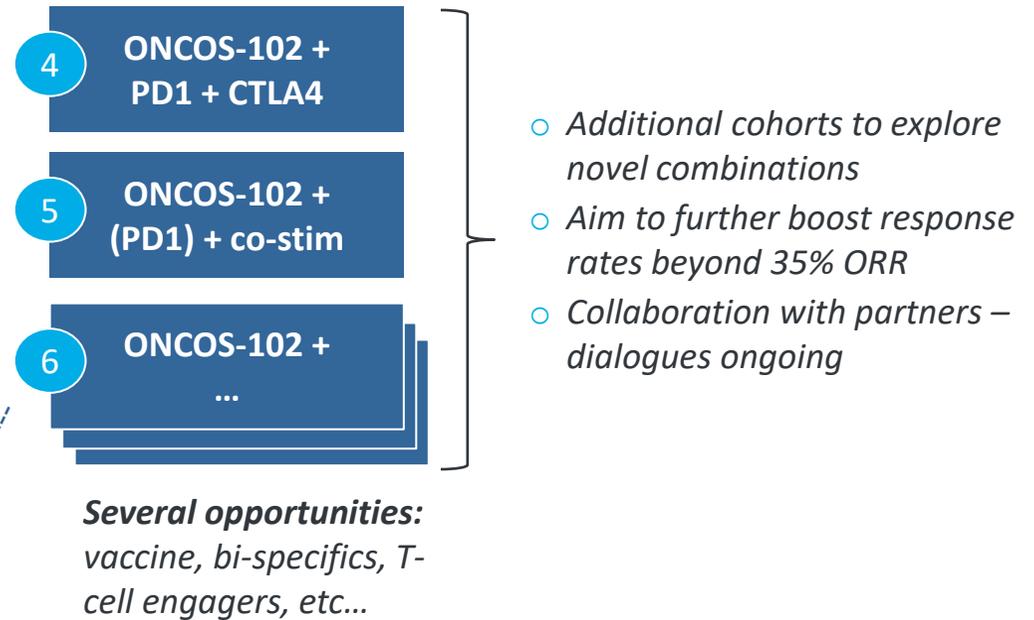


NEXT STEP: MELANOMA PLATFORM TRIAL TO EXPLORE MULTIPLE ONCOS-102 COMBINATIONS DRIVEN BY PHASE 1 DATA

Part 1 – run-in



Part 2 – multi-cohort extension



The cohorts can independently form the basis for subsequent registrational trial(s)

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NextGen ONCOS vectors

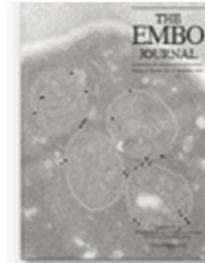
4. Strategy

NOVEL RNA DELIVERY FORMATS: RNA EXISTS NATURALLY IN CIRCULAR FORM

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 Bramsen, Sune B Villadsen, Aaron L Statham, Susan J Clark, Jørgen Kjems 



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Volume 30
Issue 21
2 November 2011

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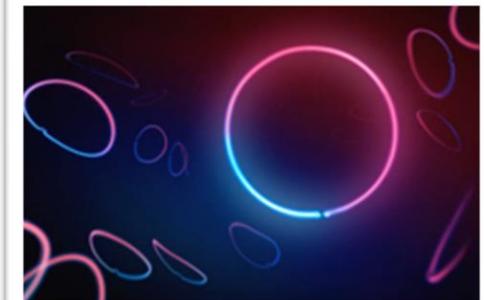
Published: 27 February 2013

Natural RNA circles function as efficient microRNA sponges

[Thomas B. Hansen](#) , [Trine I. Jensen](#), [Bettina H. Clausen](#), [Jesper B. Bramsen](#), [K. Damgaard](#) & [Jørgen Kjems](#) 

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

95k Accesses | 3825 Citations | 115 Altmetric | [Metrics](#)



The novel roles of circRNAs in human cancer

[Qingfeng Shang](#), [Zhi Yang](#), [Renbing Jia](#)  & [Shengfang Ge](#) 

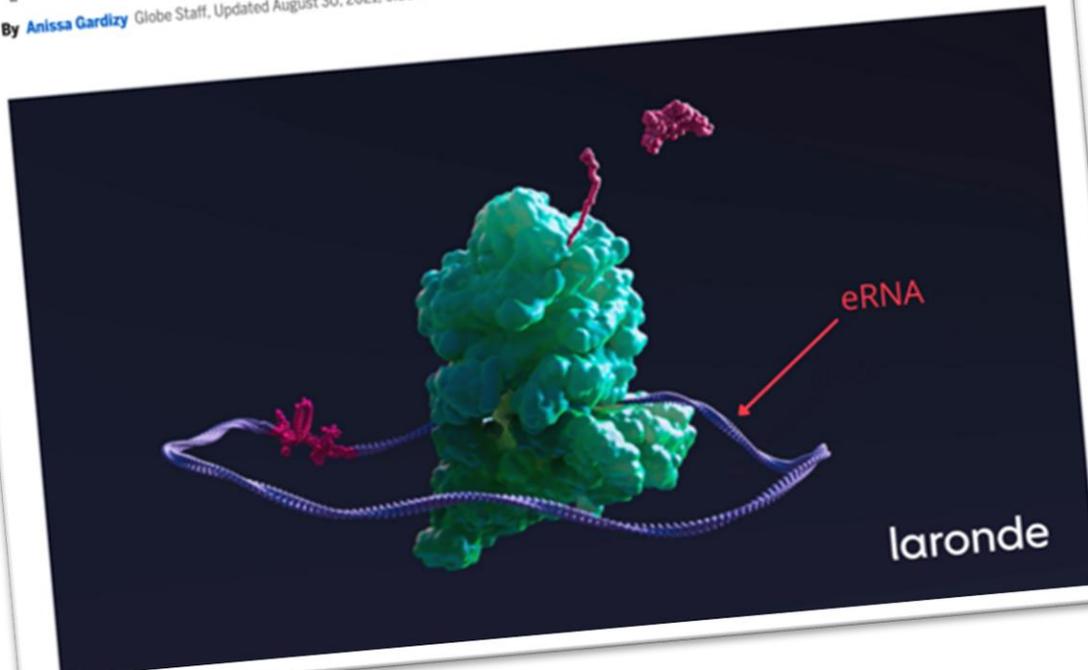
Molecular Cancer 18, Article number: 6 (2019) | [Cite this article](#)

5314 Accesses | 212 Citations | 12 Altmetric | [Metrics](#)

TWO RECENT LAUNCHES OF CIRCULAR RNA 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.



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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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](#)

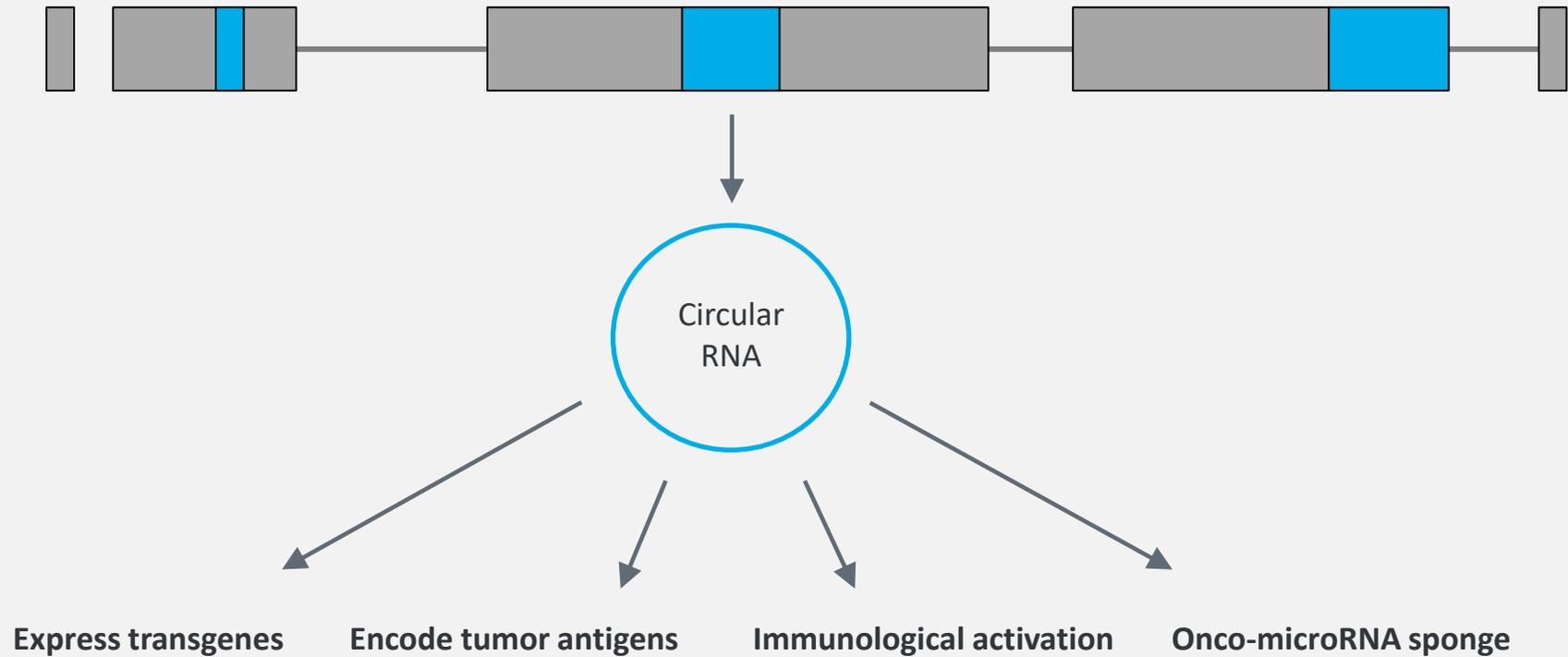
After the vaccine triumphs of Pfizer/BioNTech and Moderna, a raft of startups is developing mRNA, circular RNA and self-amplifying RNA therapeutics.

moderna

Flagship
Pioneering

ONCOS PROVIDES AN IDEAL, CLINICALLY VALIDATED PLATFORM FOR CIRCULAR RNA

Novel ONCOS circular RNA vectors



Highly versatile delivery system

4

Strategy

TARGOVAX CORE DEVELOPMENT STRATEGY

1

Let the science guide us:

Make smart, scientifically based decisions based on data and insights generated in the phase 1/2 program

2

Advance ONCOS-102 in aPD1 refractory melanoma:

Boost response rates beyond the current 35% ORR by identifying the best combination approach in phase 2 platform trial

3

Establish ONCOS as a versatile delivery platform:

Engineer novel RNA concepts into ONCOS for enhanced delivery of highly targeted, immune stimulatory genetic payloads

R&D STRATEGY: VALIDATING ONCOS AS A VERSATILE DELIVERY TOOL AND IDENTIFY BEST COMBINATION APPROACH

