



# ACTIVATING THE PATIENT'S IMMUNE SYSTEM TO FIGHT CANCER

3Q 2021 Presentation

4 November 2021



targovax

# IMPORTANT NOTICE AND DISCLAIMER

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.

# 1

## 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
<b>Total revenue</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
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
<b>Total operating expenses</b>	<b>-22</b>	<b>-23</b>	<b>-23</b>	<b>-25</b>	<b>-23</b>
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
<b>Net cash EOP</b>	<b>78</b>	<b>122</b>	<b>95</b>	<b>71</b>	<b>54</b>

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 base<sup>1</sup>

---

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				<b>2022</b> First patient
	Mesothelioma Combination w/pemetrexed/cisplatin				<b>2H 2021</b> Survival update
	Metastatic Colorectal cancer Combination w/anti PDL1				<b>1H 2022</b> Clinical data
NextGen ONCOS vectors					<i>Preclinical data and selection of candidates</i>
Novel mutRAS concepts					<i>Preclinical data and selection of candidates</i>

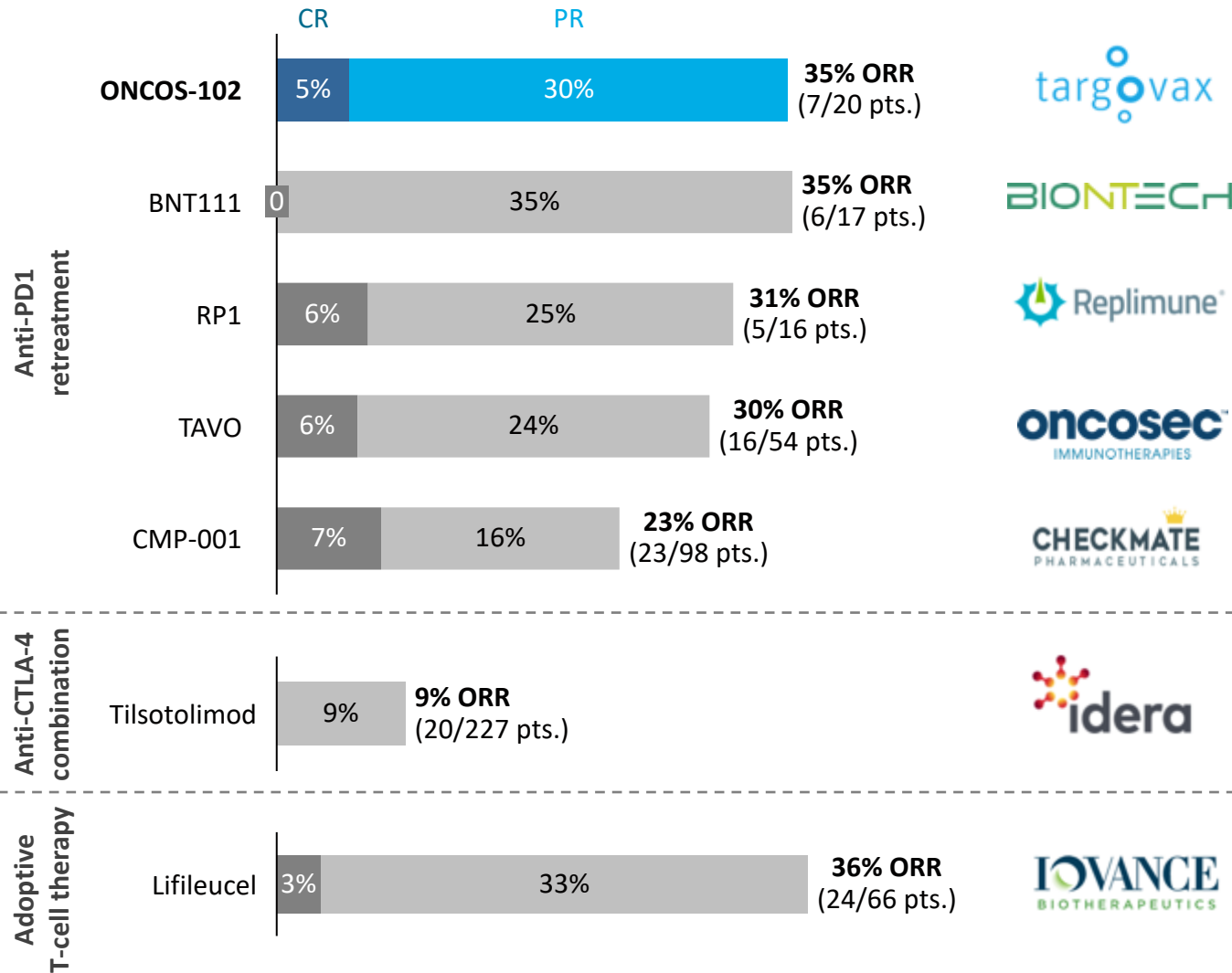


# 2

## 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



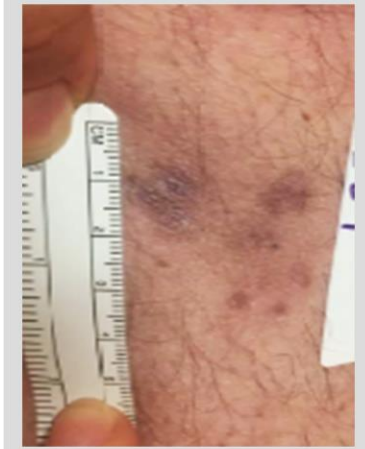
3x ONCOS-102 only  
(no pembrolizumab)



3x ONCOS-102 &  
2x pembrolizumab

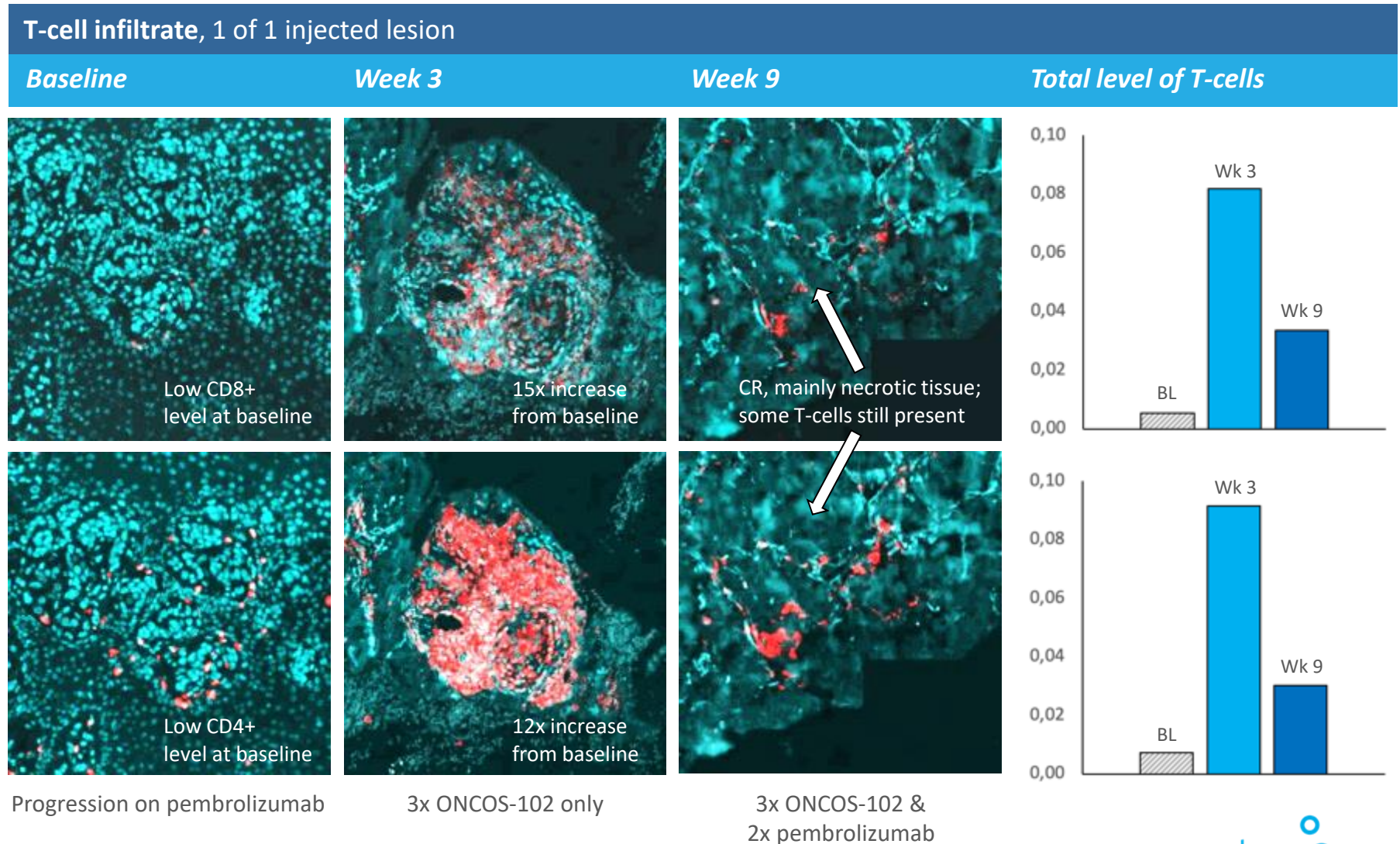


3x ONCOS-102 &  
5x pembrolizumab



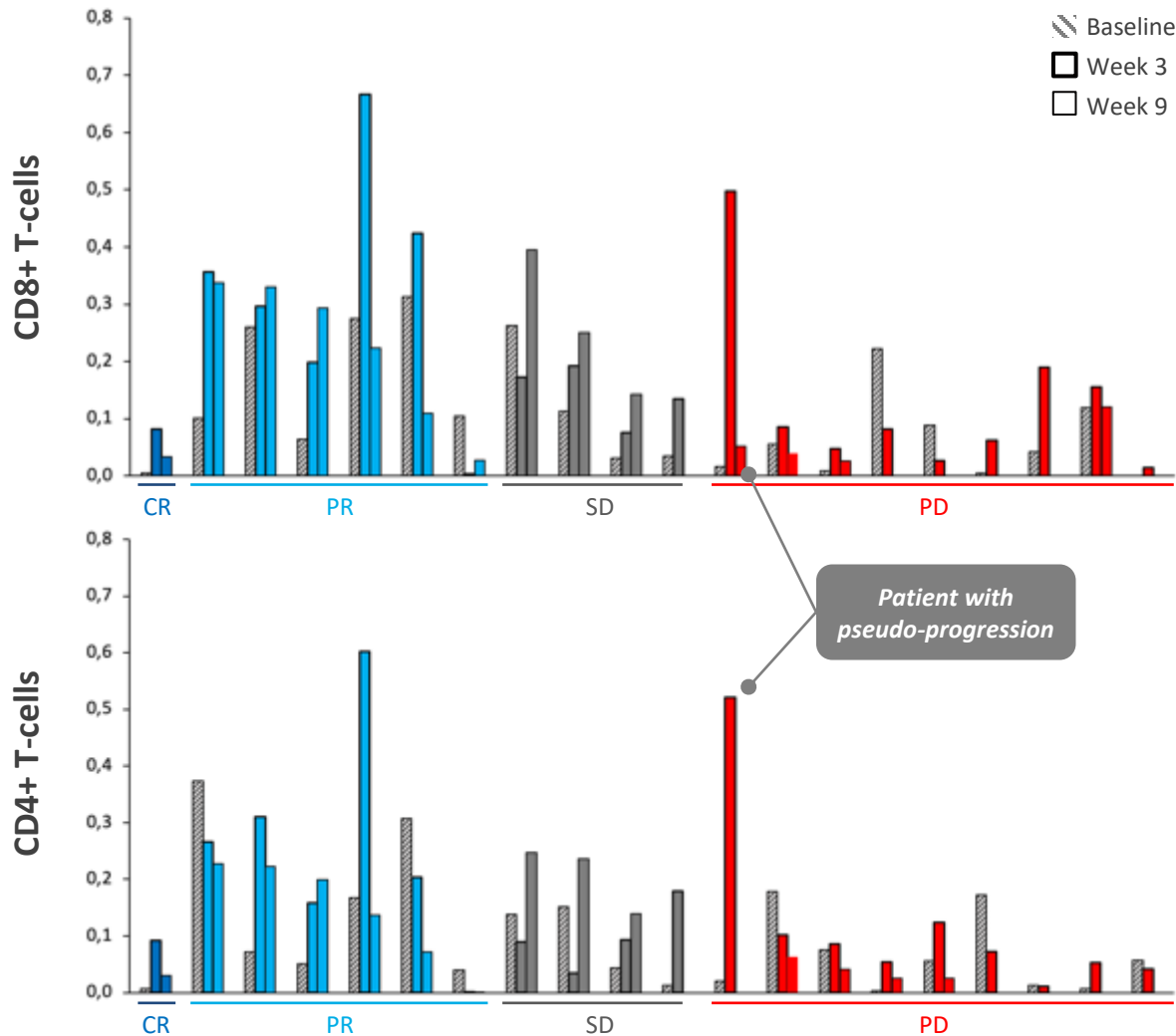
3x ONCOS-102 &  
8x pembrolizumab

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

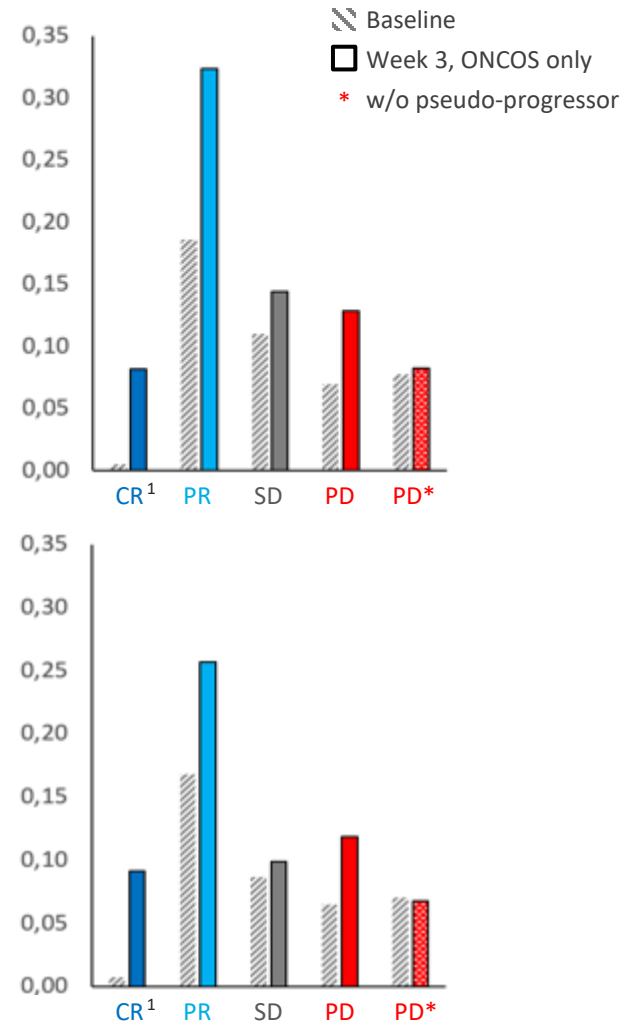


# HIGHEST INCREASE IN TUMOR T-CELL INFILTRATES OBSERVED IN MELANOMA RESPONDERS

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



Average T-cell level per group

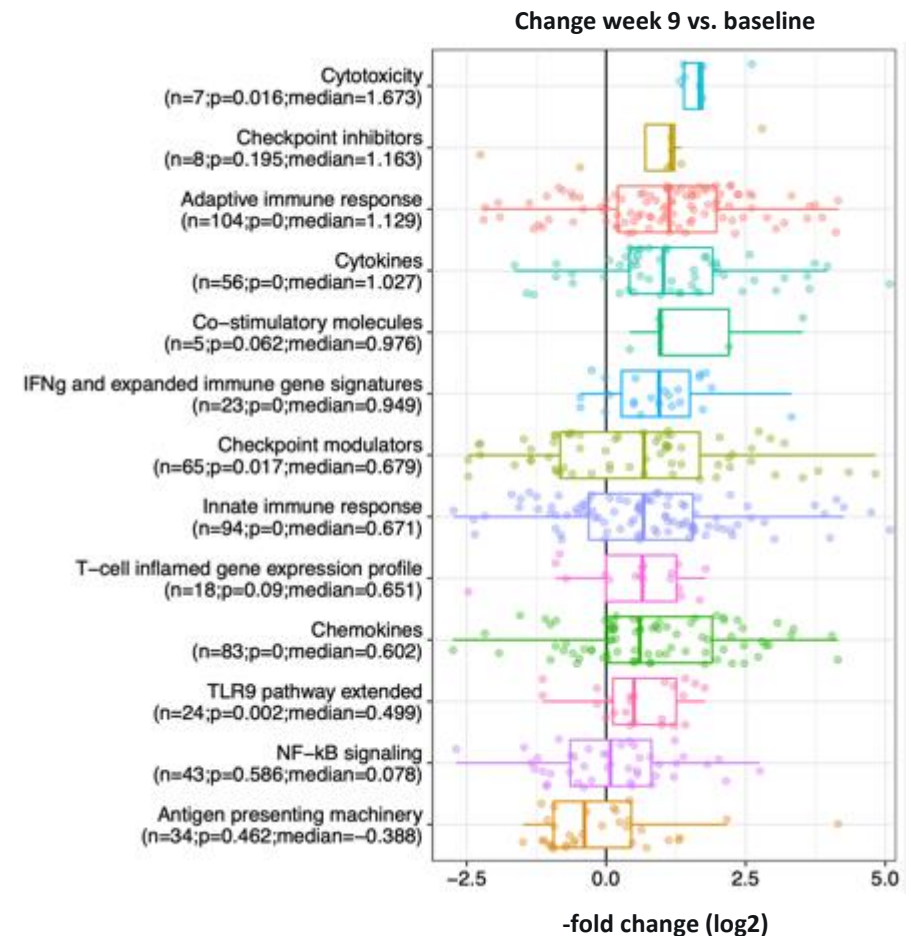




# GENE EXPRESSION DATA CONFIRMS IHC OBSERVATIONS AND DETAILS BROAD PRO-INFLAMMATORY TUMOR RE-PROGRAMING

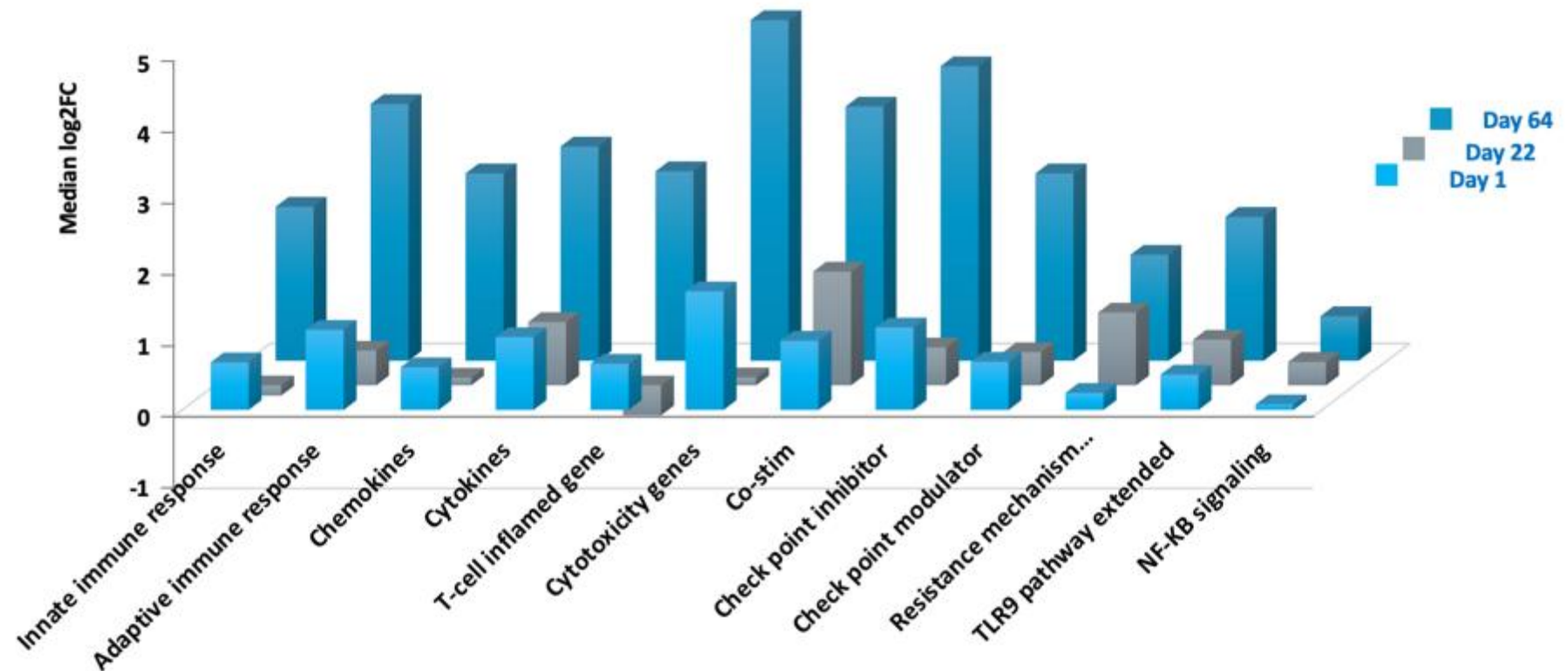
## RNAseq gene expression provides further insights:

- **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**



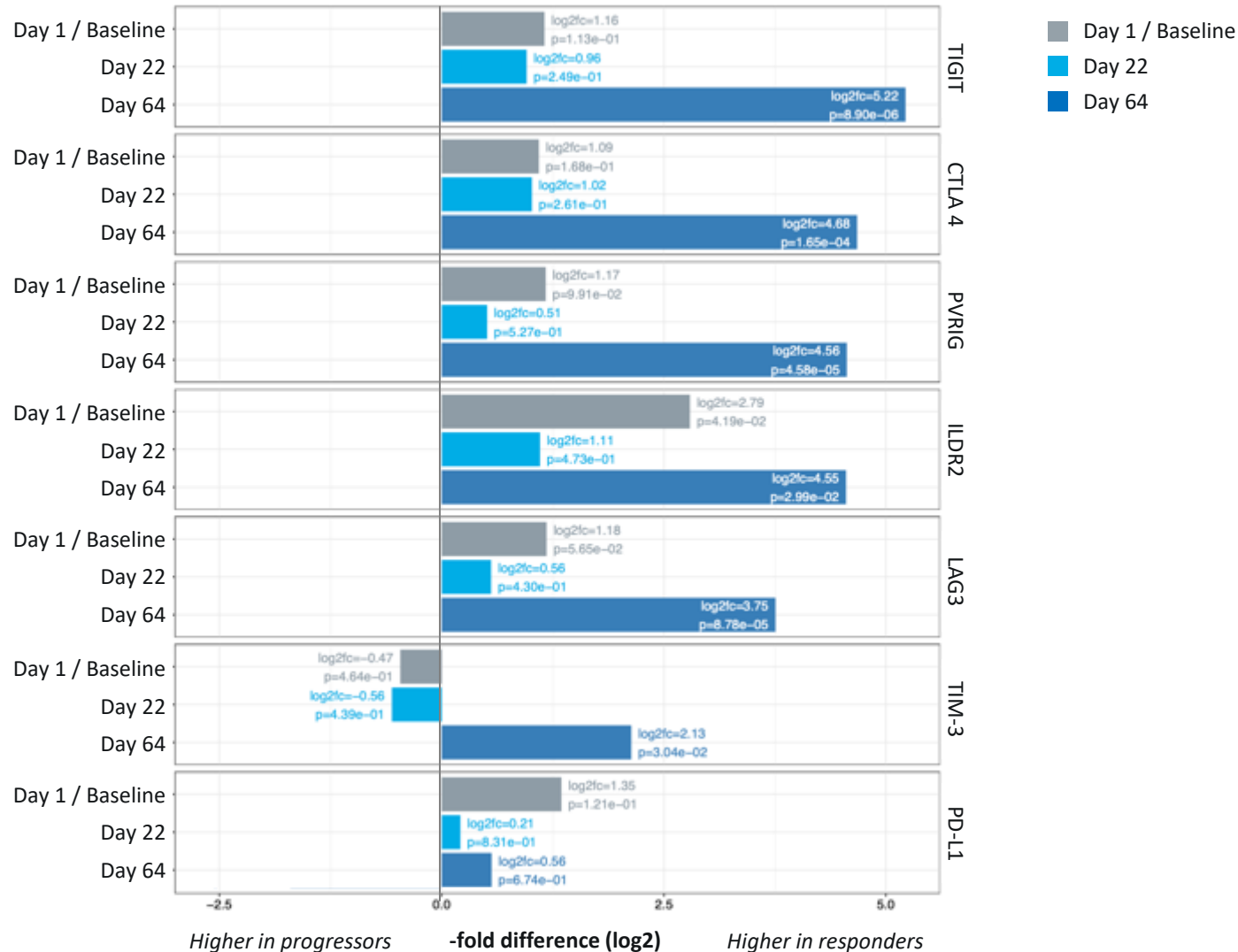
# MORE SUBSTANTIAL AND SUSTAINED PRO-INFLAMMATORY TUMOR RE-PROGRAMMING IN RESPONDERS

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

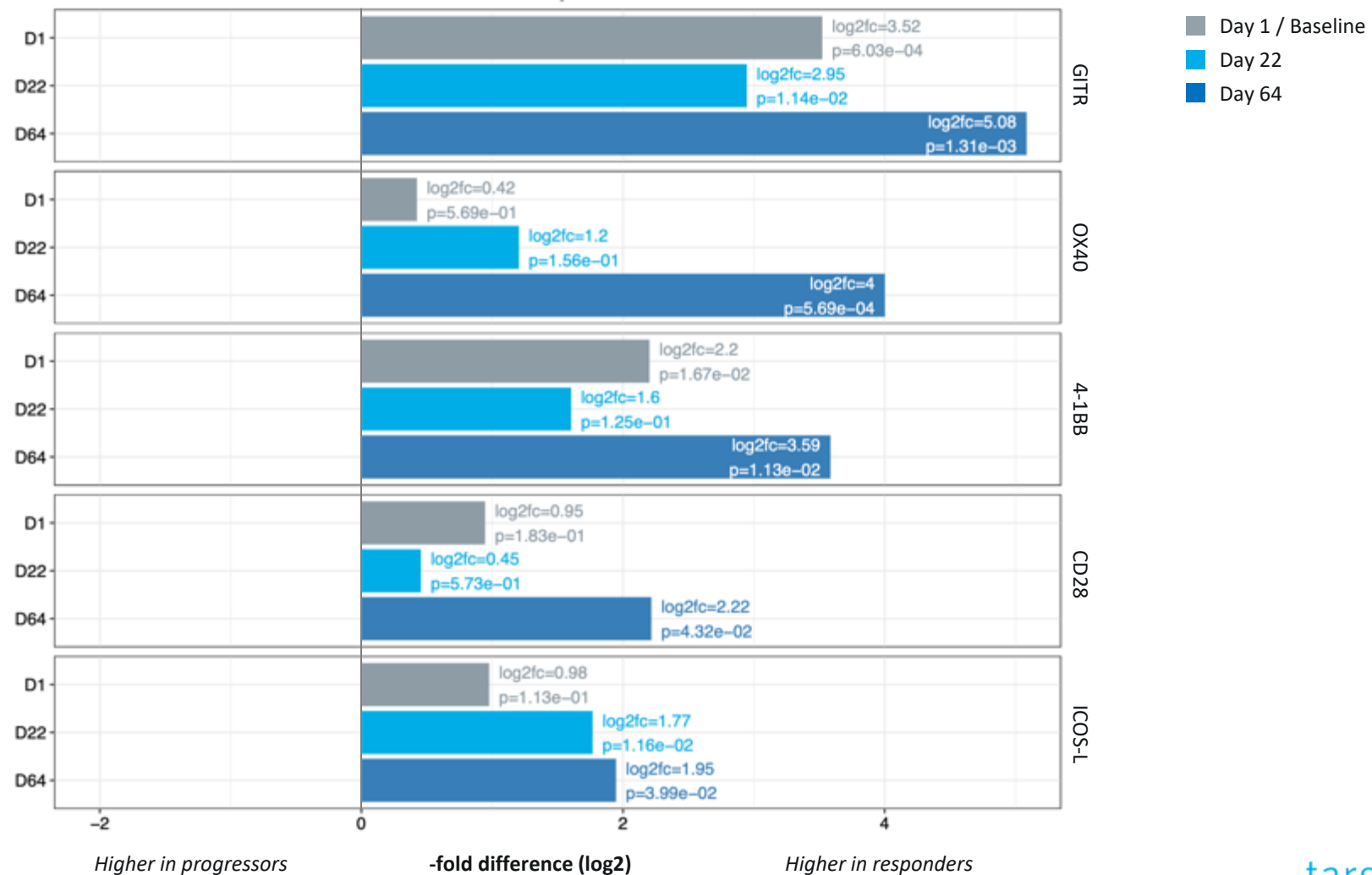
Expression of immune checkpoint inhibitors, tumor biopsy RNAseq, difference in PR vs. PD patients





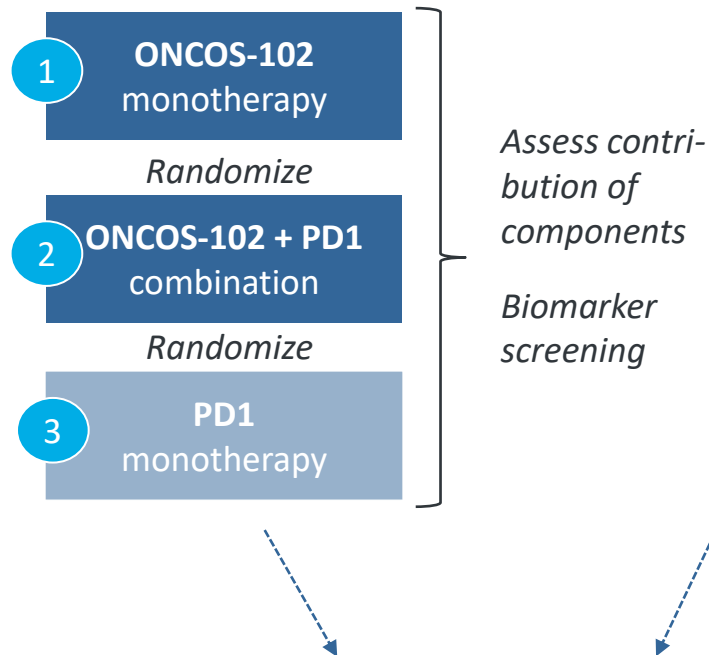
# ONCOS-102 ALSO DRIVES ROBUST UPREGULATION OF CO-STIMULATORY MOLECULES, PARTICULARLY IN RESPONDERS

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

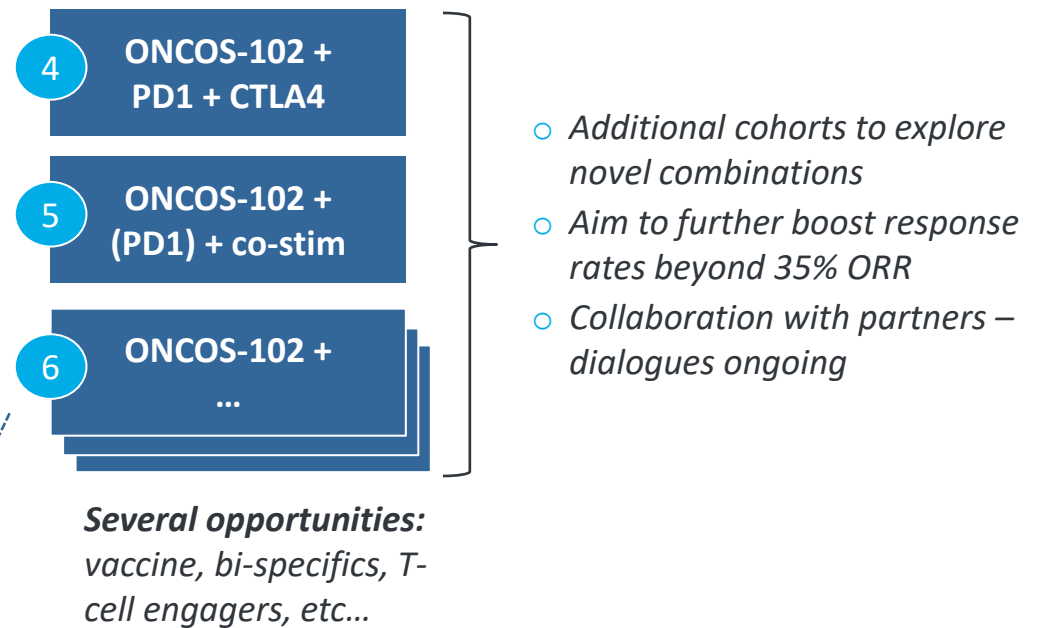


# NEXT STEP: MELANOMA PLATFORM TRIAL TO EXPLORE MULTIPLE ONCOS-102 COMBINATIONS DRIVEN BY PHASE 1 DATA

## Part 1 – run-in



## Part 2 – multi-cohort extension



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

# 3

## NextGen ONCOS vectors

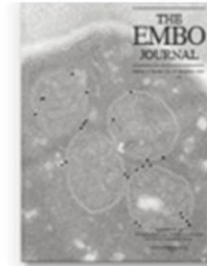
### 4. Strategy

# 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 



About the cover

**Volume 30**

**Issue 21**

**2 November 2011**

**IN THIS ISSUE**

**768 citations**

**nature**

Explore content ▾

About the journal ▾



Publish with us ▾

Subscribe

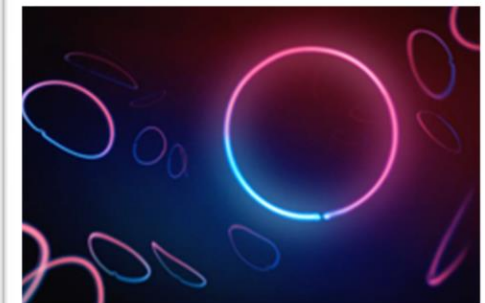
[nature](#) > [letters](#) > [article](#)

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 

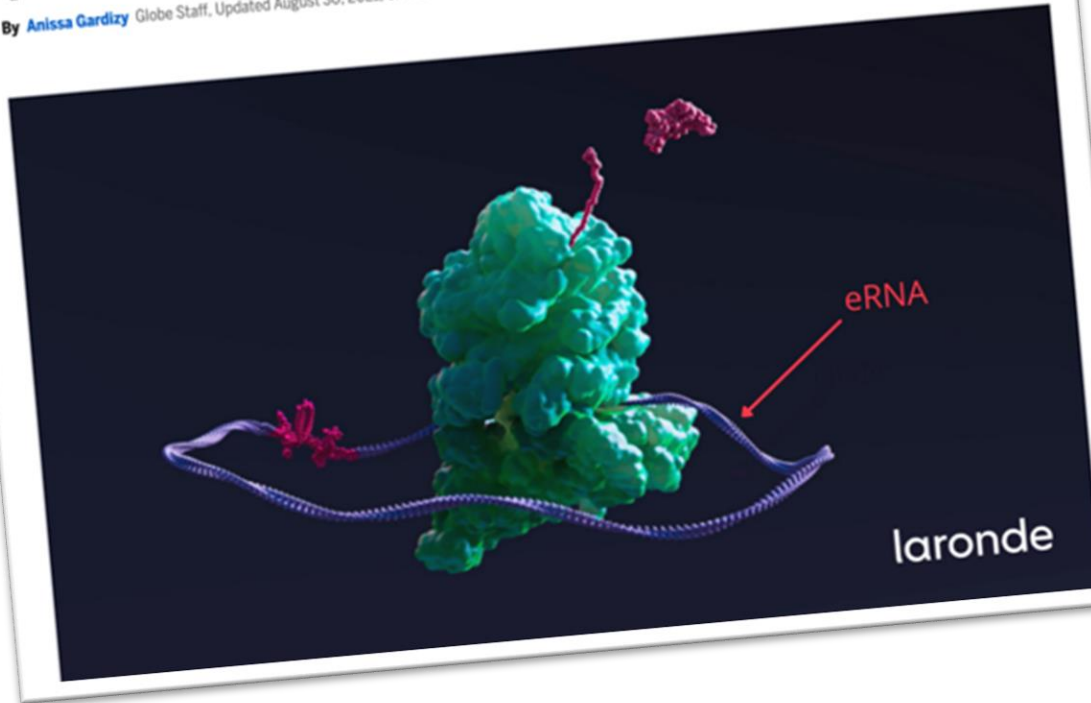
*Molecular Cancer* **18**, Article number: 6 (2019) | [Cite this article](#)

**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.



moderna

Flagship  
Pioneering



RESEARCH CRO MEDTECH TRENDING TOPIC:

Virtual Events FiercePharma Jobs Resources Webinar

Biotech

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

nature biotechnology

Explore content ▾ About the journal ▾ Publish with us ▾

nature > nature biotechnology > news > article

News | [Published: 02 September 2021](#)

**Startups set off new wave of mRNA therapeutics**

[Elie Dolgin](#)

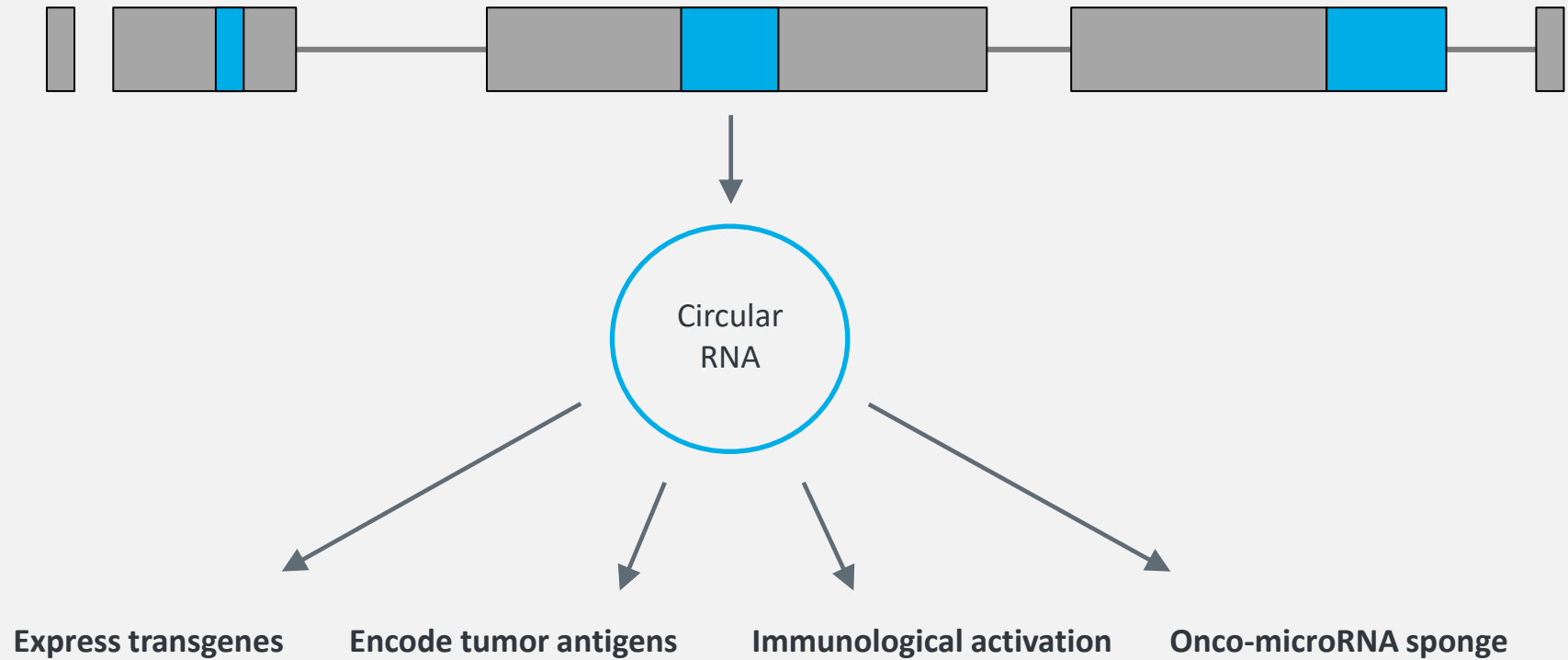
[Nature Biotechnology](#) 39, 1029–1031 (2021) | [Cite this article](#)

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 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

