

First quarter results

2018



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's 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.

# Agenda

○ **1Q 2018 Highlights**

○ ONCOS-102 Mesothelioma update

---

○ 1Q 2018 Financials

---

# Highlights from the first quarter 2018

## Research & Development

- The **safety lead-in cohort** of ONCOS-102 in **mesothelioma** was completed without any concerns
- ONCOS-102 generated **immune activation** in the first treated patients in the **mesothelioma** trial
- ONCOS-102 generated **immune activation** in 4/4 patients treated in the checkpoint inhibitor refractory **melanoma** trial
- A **new site** in Philadelphia was opened for the **melanoma** trial

## Corporate

- **Dr. Michael Bogenstätter** was appointed **Chief Business Officer**

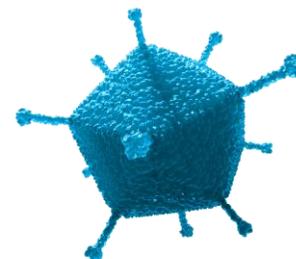
## Post-period

- **Dr. Catherine Wheeler** was elected new **member of the Board**
- Early **signal of efficacy** was detected in the **ONCOS-102 mesothelioma** trial, with responses observed in **3 out of 6 patients**

# Targovax has two immuno-oncology programs in clinical development

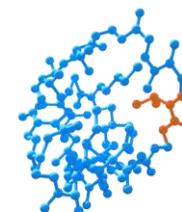
## ONCOS Oncolytic virus

- Genetically **armed adenovirus**
- Makes **cancer antigens** visible to immune system
- **Induces T-cells** specific to patients' tumor



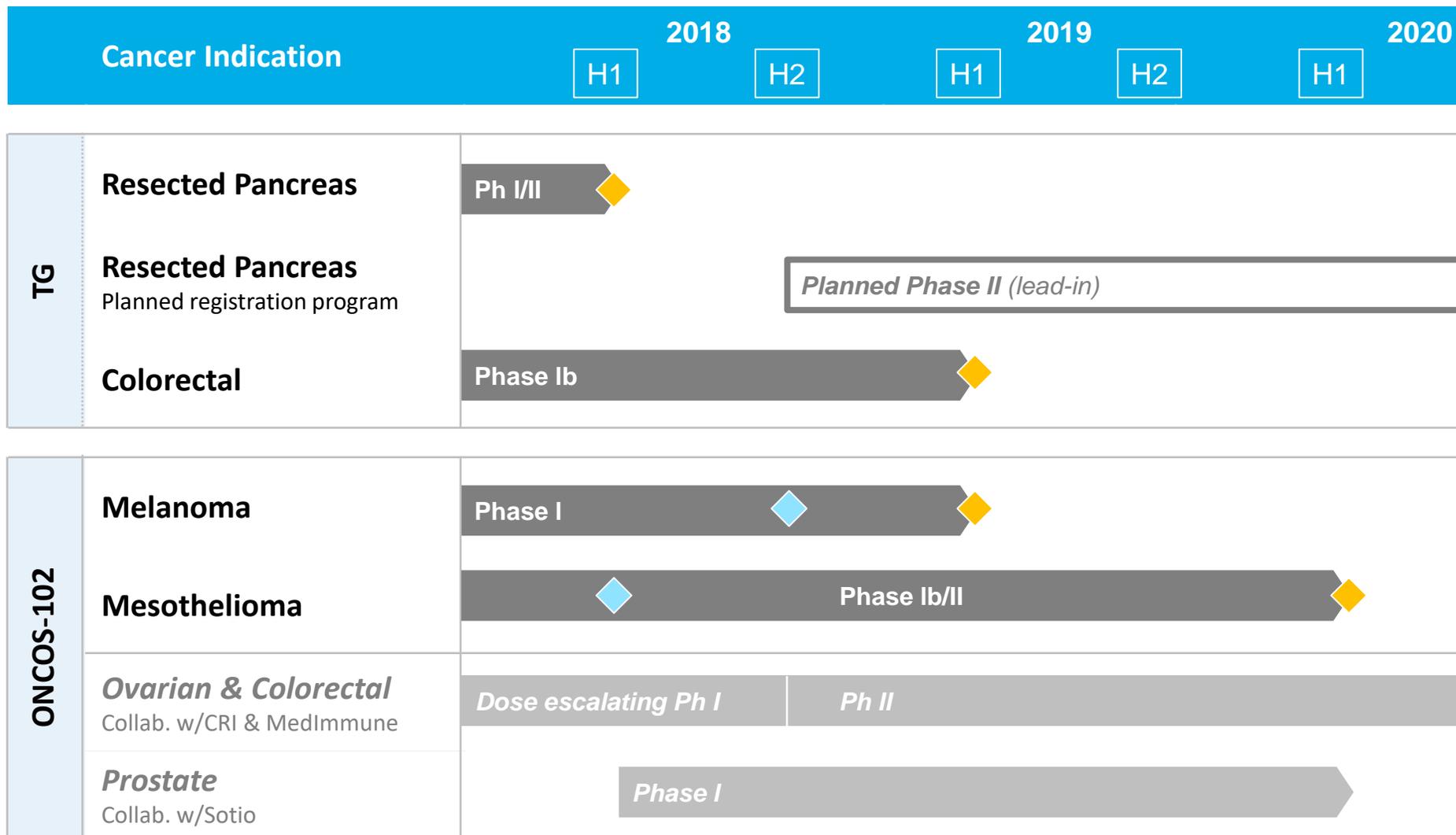
## TG RAS neoantigen vaccine

- Shared neoantigen, **off-the-shelf cancer vaccine**
- Targets oncogenic, mutated **RAS neoepitopes**
- **Induces T-cells** specific to **RAS mutations**



# Overview of Targovax' full clinical program

- ◆ Interim data
- ◆ Clinical, immune and safety data



# ONCOS clinical program overview

**Compassionate  
use program**  
Finland  
115 patients

**Initial Phase I trial**  
Solid tumors  
7 indications

**Melanoma**  
Phase I  
12 patients

- *Combination with PD-1  
CPI in refractory patients*
- *Proof-of-concept*
- *Memorial Sloan Kettering*

**Mesothelioma**  
Phase I/II - controlled  
30 patients

- *Combination with chemo SoC*
- *Randomized trial*
- *Orphan indication*

**Ovarian / colorectal**  
Phase I/II  
up to 78 patients

- *Collaboration with Ludwig & CRI*
- *Combination with Medimmune's  
durvalumab (Imfinzi™)*

**Prostate**  
Phase I  
10 patients

- *Collaboration with SOTIO*
- *Combination with DC therapy*

# Agenda

---

○ 1Q 2018 Highlights

○ **ONCOS-102 Mesothelioma update**

○ 1Q 2018 Financials

---

# ONCOS clinical program overview

**Compassionate  
use program**  
Finland  
115 patients

**Initial Phase I trial**  
Solid tumors  
7 indications

**Melanoma**  
Phase I  
12 patients

- Combination with PD-1 CPI in refractory patients
- Proof-of-concept
- Memorial Sloan Kettering

**Mesothelioma**  
Phase I/II - controlled  
30 patients

- Combination with chemo SoC
- Randomized trial
- Orphan indication

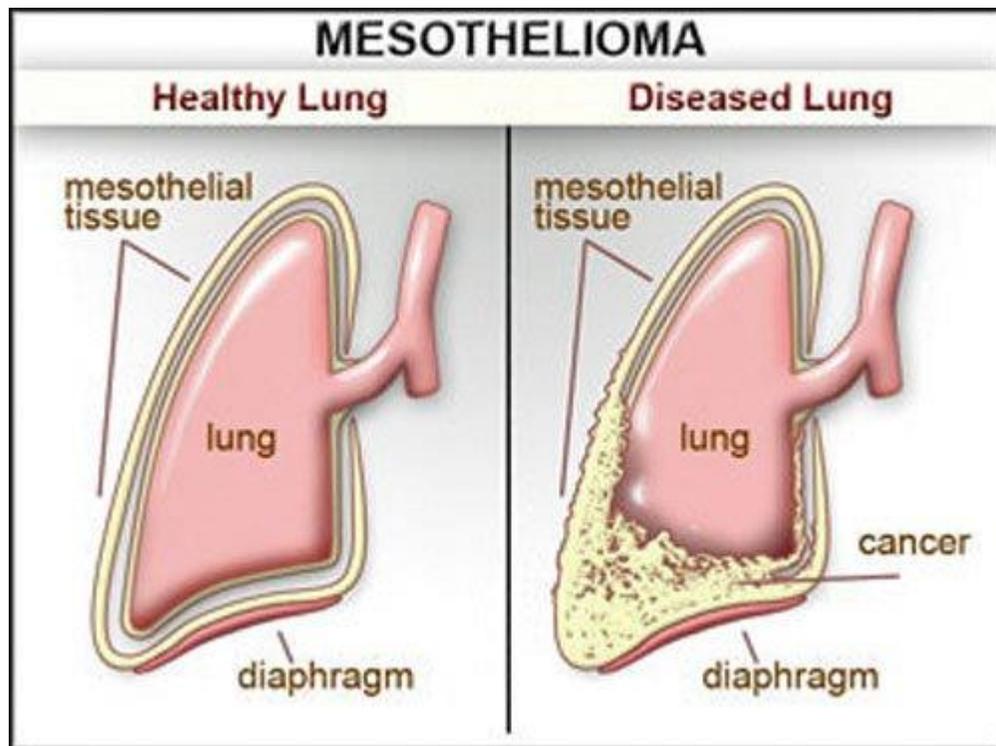
**Ovarian / colorectal**  
Phase I/II  
up to 78 patients

- Collaboration with Ludwig & CRI
- Combination with Medimmune's durvalumab (Imfinzi™)

**Prostate**  
Phase I  
10 patients

- Collaboration with SOTIO
- Combination with DC therapy

# Malignant pleural mesothelioma is a difficult-to-treat cancer of the lining of the lung



- **Orphan disease**, estimated 15,000 new cases per year (EU, USA, Australia)
- Often **caused by asbestos** exposure
- **Diagnosis usually too late for surgery**
- **No significant treatment advance** in the last decade
- **Median survival 12 months** with current standard of care (SoC), 5 year OS <10%
- **Chemotherapy** (pemetrexed / cisplatin) is the **SoC** in non-resected disease

# Mesothelioma treatment options



## Surgery

- Offers **best prognosis**, but only about **10% of patients are resectable**
- **Technically challenging** due to location



## Radiotherapy

- **Rarely used** as the shape of mesothelioma tumors make them **hard to target**
- Mainly palliative care



## Chemotherapy

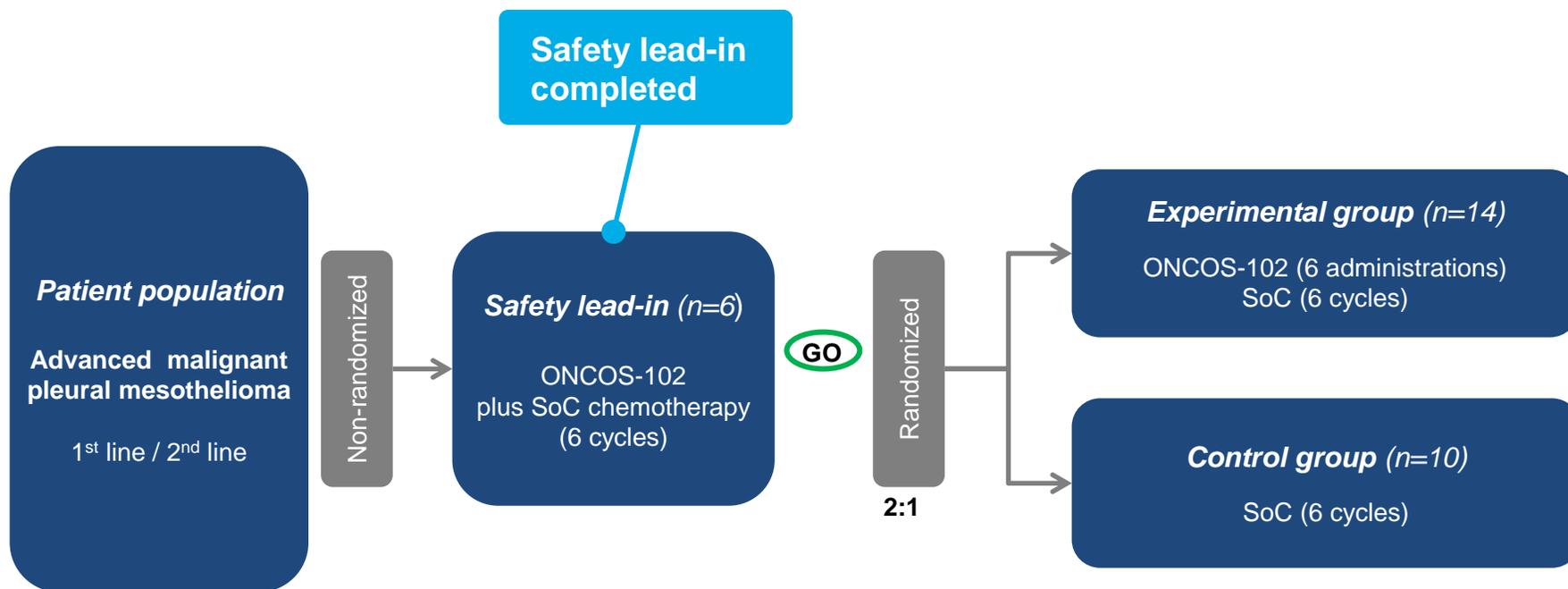
- **Pem/Cis only approved SoC**
- 40% response in 1<sup>st</sup> line, <10% in 2<sup>nd</sup> line
- 6 month PFS and 12 month median OS



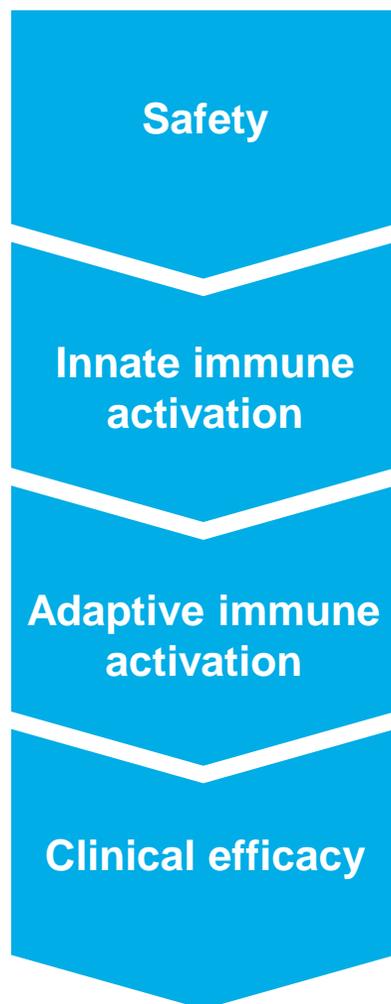
## Immunotherapy

- **Mixed signals** from early CPI trials
- Nivo+ipi phase III trial reading out 2021<sup>1</sup>
- **Currently no/few other oncolytic viruses**

# ONCOS-102 in Mesothelioma – Phase I/II study design

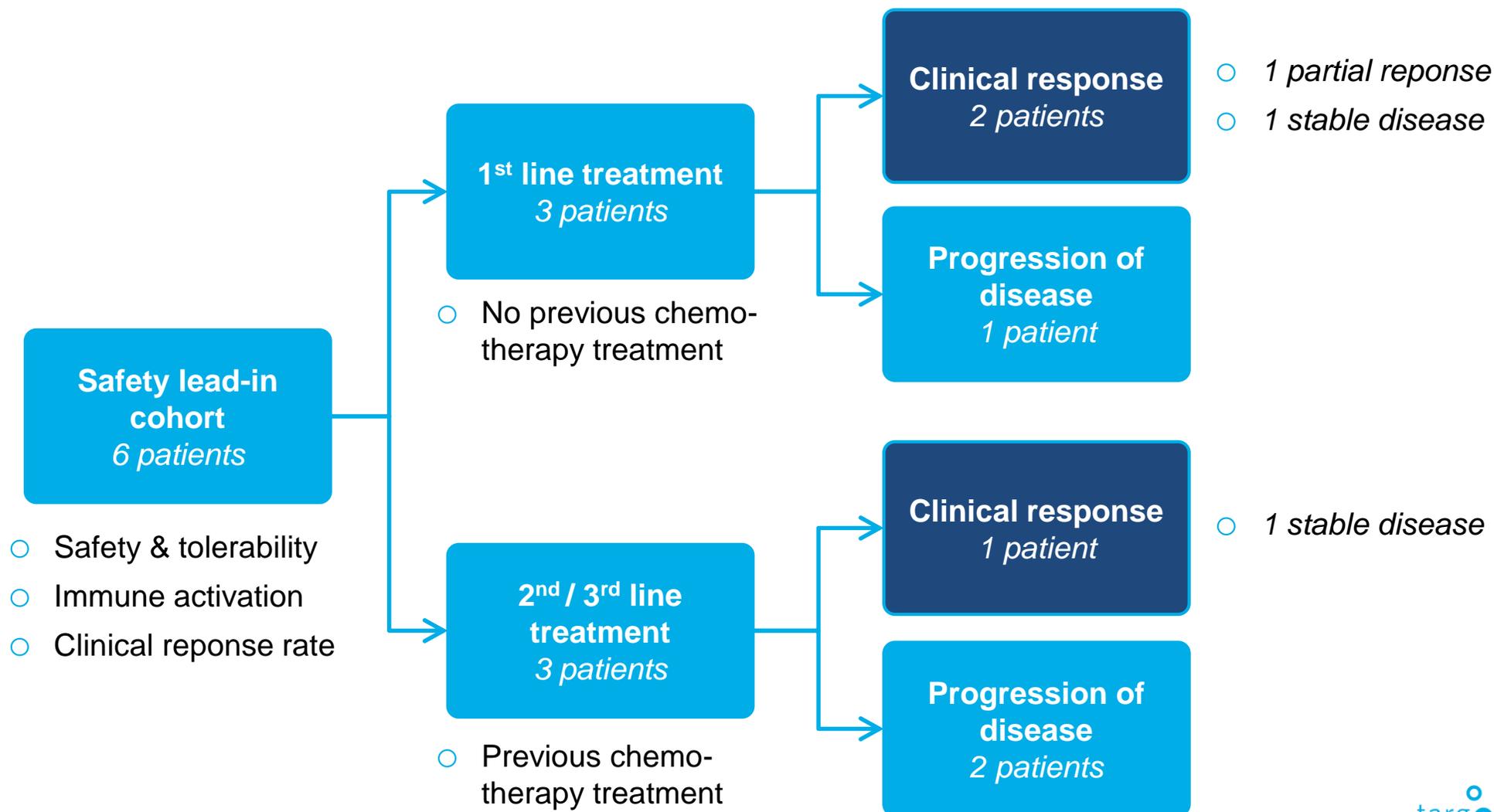


# Mesothelioma trial: Early signal of clinical efficacy in the 6 patient safety lead-in cohort



- ✓ **Phase Ib safety lead-in** cohort of six patients completed with **no safety concerns**
  - ✓ ONCOS-102 first time in combination with chemotherapy
  - ✓ Now **recruiting patients into the randomized phase II part**
- 
- ✓ **Systemic increase of several pro-inflammatory cytokines** in 6/6 patients (IL-6, TNF $\alpha$  and IFN $\gamma$ )
- 
- ✓ **Increase in infiltration of CD4+ helper and CD8+ cytotoxic T cells into lesions** (3/4 patients with pre- and post-biopsies available)
- 
- ✓ **3 of 6 patients** in the safety lead-in cohort **showed clinical response** after 6 months (50% response rate, RECIST 1.1)

# Mesothelioma trial: Safety cohort patient split and clinical responses



# ONCOS-102 opportunity in malignant mesothelioma

## Rationale for ONCOS-102 opportunity in mesothelioma

---

- **ONCOS-102 has the opportunity to become standard of care in 1<sup>st</sup> line treatment**
  - In combination with current SoC chemotherapy
- **ONCOS-102 has orphan drug designation in mesothelioma in both the US and EU**
  - 7 year market exclusivity in the US and 10 years in the EU
- **Few direct IO competitors in current development**
  - CPIs are potential combination therapies with ONCOS, rather than competitors
  - No/few competing viruses and vaccines in clinical development

# Agenda

---

○ 1Q 2018 Highlights

---

○ ONCOS-102 Mesothelioma update

---

**○ 1Q 2018 Financials**

---

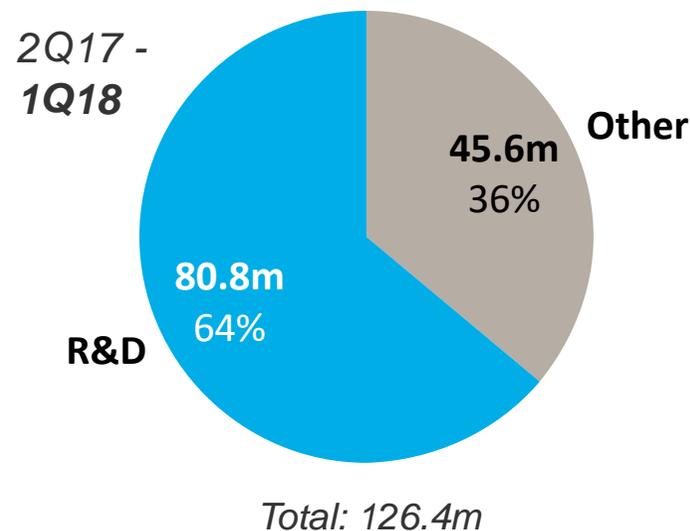
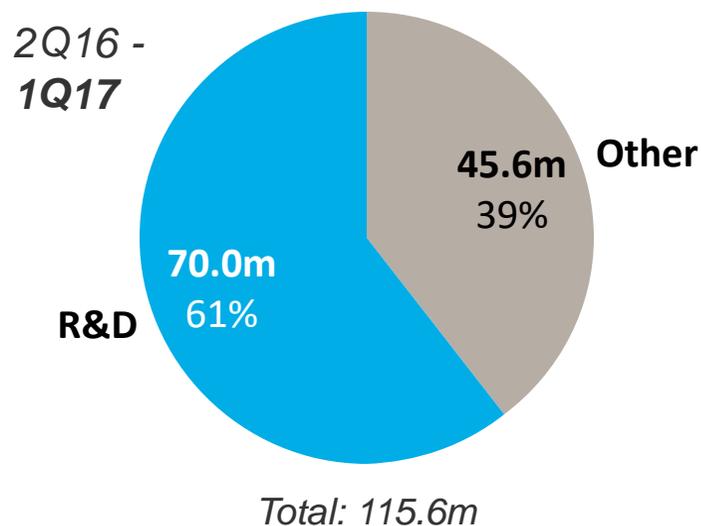
# Targovax has a sound financial position, with cash to complete the planned clinical program well into 2019

Operations			
Cash end of Q1	NOK 229m	USD 29m	Mar 31 <sup>st</sup> 2018
Net cash flow	NOK -32m	USD -4m	Total Q1
Annual run rate	NOK 113m	USD 15m	Last four quarters

The share	OSE: TRVX		
Market Cap	NOK 850m	USD ~110m	At share price NOK ~16
Daily turnover	NOK 3m	USD 0.4m	Rolling 6 month avg.
Analyst coverage	DNB, ABG Sundal Collier, Arctic, Redeye, Norske Aksjeanalyser, Edison		

# The increase in run rate over the last 12 months is driven by higher spend on R&D

## R&D spend (NOK million)

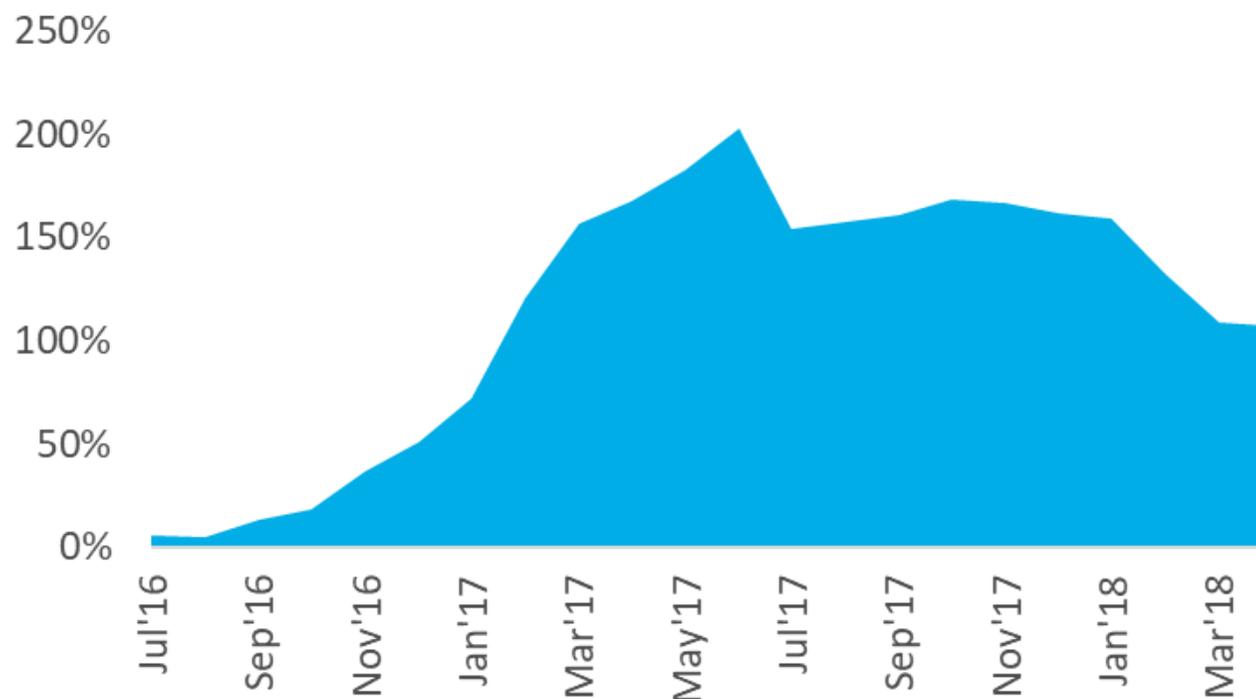


### 12 months rolling

(Amounts in NOK thousands)	2Q 2016 - 1Q 2017		2Q 2017 - 1Q 2018	
	Total	of which R&D	Total	of which R&D
External R&D expenses	43.0	43.0	48.0	48.0
Payroll and related expenses	47.1	25.8	52.8	31.8
Other operating expenses	25.5	1.3	25.6	1.0
<b>Total operating expenses</b>	<b>115.6</b>	<b>70.0</b>	<b>126.4</b>	<b>80.8</b>

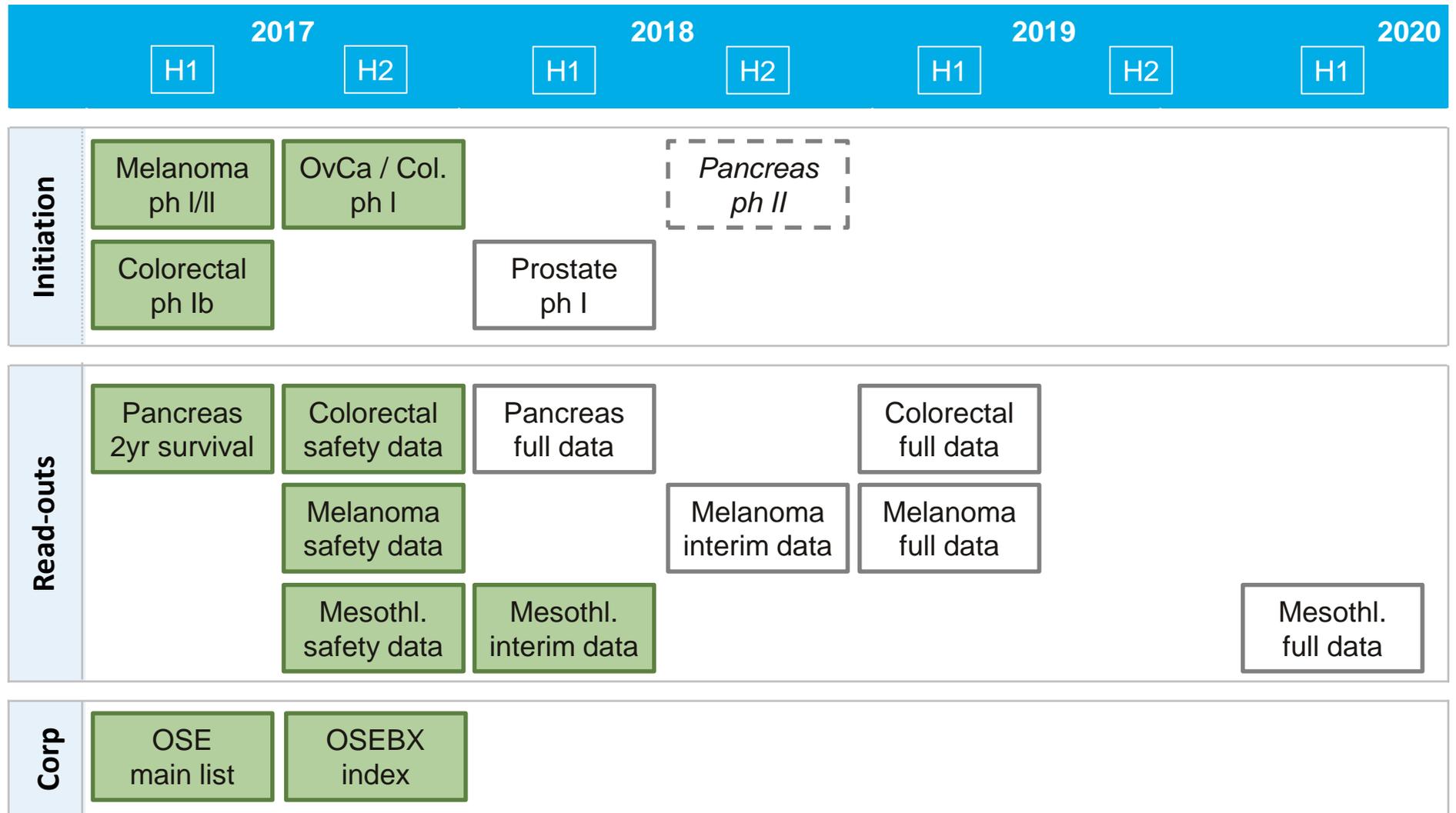
# Targovax is listed on the Oslo Stock Exchange, and included in the OSEBX index as of December 2017

*TRVX share turnover (% of share capital, rolling 12 month)*



- **NOK ~850 m market cap**
- **NOK 3m avg. daily turnover in last 6 months**
- **NOK 213m total turnover in 1Q**
- **190k shares avg. daily volume in 1Q**
- **>4,100 owners**
- **52.6m shares\* (57.4 fully diluted)**

# News flow – Multiple near-term value inflection points



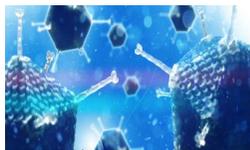
# Arming the patient's immune system to fight cancer

## Broad clinical program



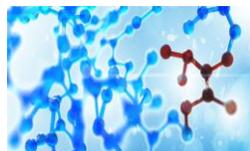
- ✓ Six shots on goal
- ✓ Several upcoming data points

## ONCOS



- ✓ Demonstrated ability to increase T-cell count
- ✓ Early signal of efficacy in difficult-to-treat tumors

## TG



- ✓ Unique approach for targeting RAS mutations
- ✓ Potential to benefit up to 1/3 of all cancer patients