



**Arming the patient's immune system to fight cancer**

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**4Q and full year 2017 presentation**

15 February 2018

# 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

○ **4Q 2017 Highlights**

○ Financials - 4Q and full year 2017

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○ ONCOS program update

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○ TG program update

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○ 2017 review & 2018 outlook

# Highlights from the fourth quarter 2017

## Clinical data

- **One-year survival rate, immune activation, and safety data for 2<sup>nd</sup> cohort in the TG01 phase I/II trial in resected pancreatic cancer**
- **The two combination trials with ONCOS-102 in melanoma and mesothelioma both passed their initial, planned safety reviews**
- **TG02 passed the initial safety review in colorectal cancer, and also reported immune activation data in the first treated patients**

## Patents

- **Targovax was granted a composition-of-matter patent in the US for TG02**

## Corporate

- **Patrick Vink** was appointed as the new chairman of the Board
- **TRVX included in the OSEBX index** from 1 December 2017

# Highlights from the fourth quarter 2017 – post-period

## Clinical data

- **ONCOS-102 generated immune activation** in 4/4 patients treated in the checkpoint inhibitor refractory **melanoma trial**
- 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**

## Corporate

- **Dr. Michael Bogenstätter** was appointed **Chief Business Officer** of Targovax, and started in January 2018

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

| Operations      |          |         |                                 |
|-----------------|----------|---------|---------------------------------|
| Cash end of Q4  | NOK 262m | USD 32m | <i>Des 31<sup>st</sup> 2017</i> |
| Net cash flow   | NOK -24m | USD -3m | <i>Total Q4</i>                 |
| Annual run rate | NOK 110m | USD 14m | <i>Last four quarters</i>       |

| The share        | OSE: TRVX   |           |                               |
|------------------|---|-----------|-------------------------------|
| Market Cap       | NOK 900m  | USD ~110m | <i>At share price NOK ~17</i> |
| Daily turnover   | NOK 4m  | USD 0.5m  | <i>Rolling 6 month avg.</i>   |
| Analyst coverage | DNB, ABG Sundal Collier, Arctic, Redeye, Norske Aksjeanalyser, Edison |           |                               |

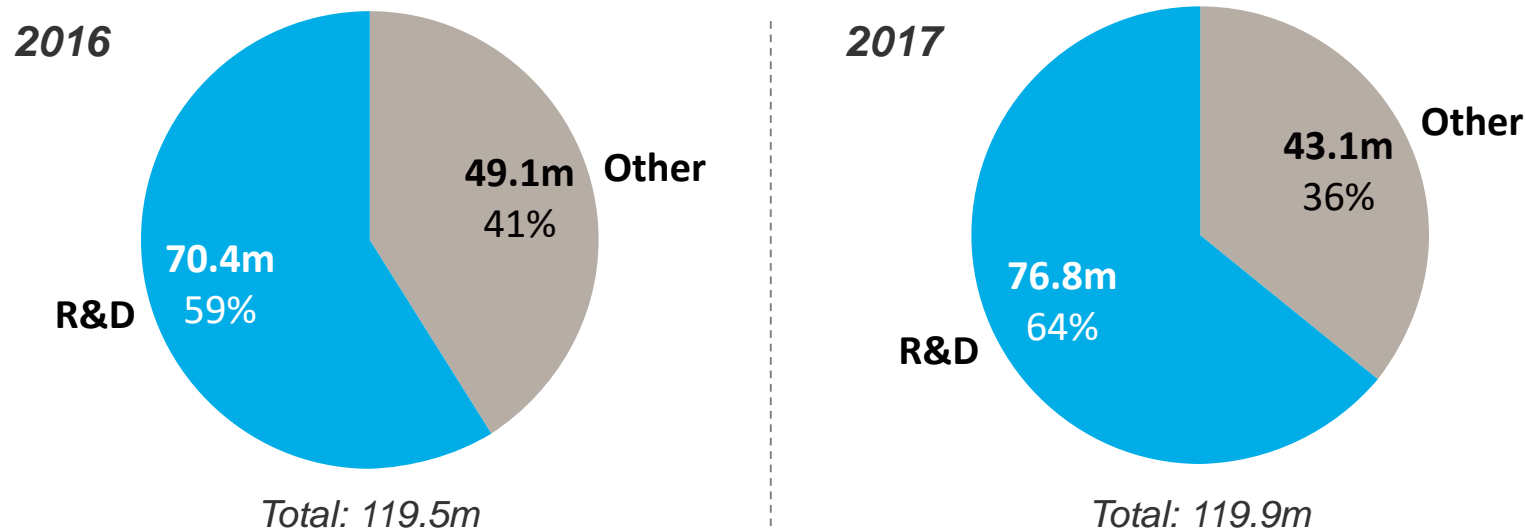
## Total operating expenses for 2017 totaled 120m NOK, with a cash position of 262m NOK at end of Q4

|                                 | 4Q16       | 4Q17       | 2016        | 2017        |
|---------------------------------|------------|------------|-------------|-------------|
| <b>Total revenue</b>            | <b>0</b>   | <b>0</b>   | <b>0</b>    | <b>0</b>    |
| External R&D expenses           | -12        | -12        | -45         | -46         |
| Payroll and related expenses    | -13        | -13        | -49         | -48         |
| Other operating expenses        | -6         | -7         | -25         | -26         |
| <b>Total operating expenses</b> | <b>-31</b> | <b>-32</b> | <b>-120</b> | <b>-120</b> |
| Operating loss                  | -31        | -32        | -120        | -120        |
| Net financial items             | -1         | -0         | -3          | -2          |
| Loss before income tax          | -32        | -33        | -123        | -122        |
| Net change in cash              | -21        | -24        | -2          | 90          |
| <b>Net cash EOP</b>             | <b>172</b> | <b>262</b> | <b>172</b>  | <b>262</b>  |



# Relative spend on R&D grew by 5% in 2017, driven by increased clinical activity

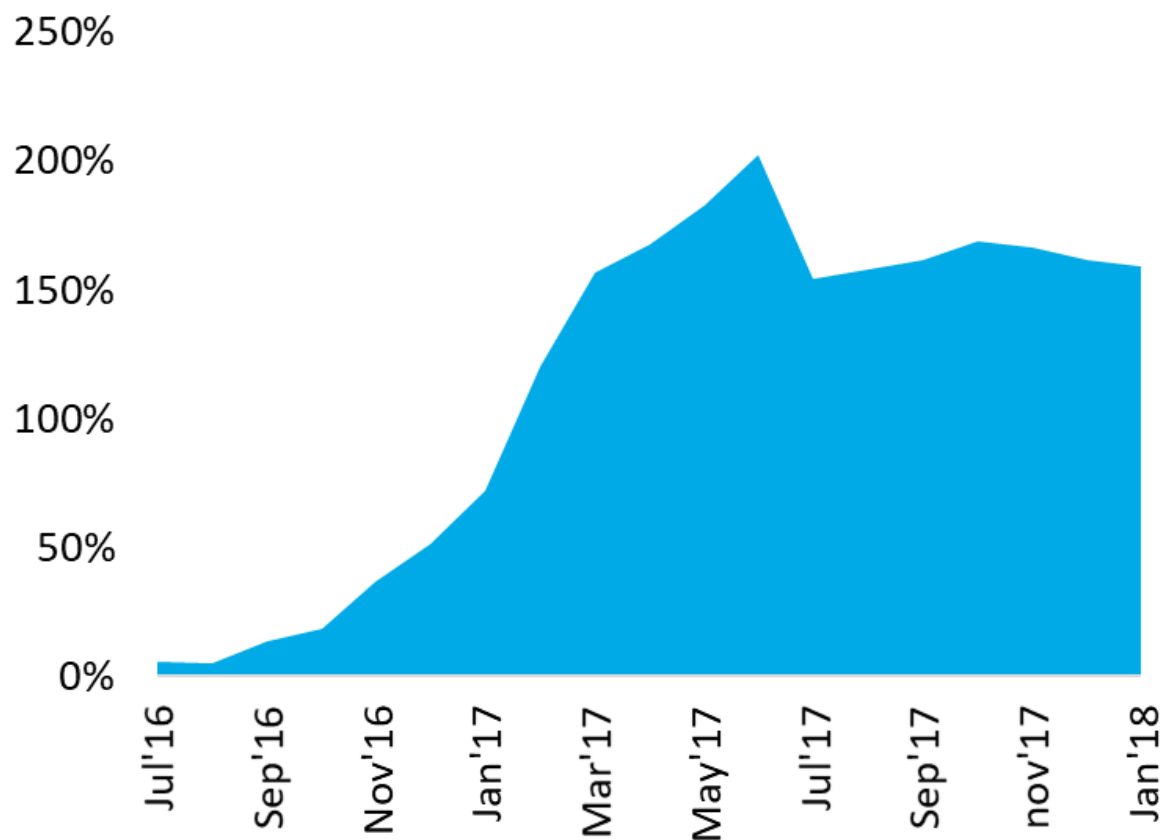
## R&D spend (NOK million)



| (Amounts in NOK thousands)   | FY 2016      |              | FY 2017      |              |
|------------------------------|--------------|--------------|--------------|--------------|
|                              | Total        | of which R&D | Total        | of which R&D |
| External R&D expenses        | 45.0         | 45.0         | 45.6         | 45.6         |
| Payroll and related expenses | 49.2         | 24.4         | 48.3         | 30.0         |
| Other operating expenses     | 25.3         | 1.0          | 26.1         | 1.2          |
| <b>Total</b>                 | <b>119.5</b> | <b>70.4</b>  | <b>119.9</b> | <b>76.8</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 ~900 m market cap**
- **NOK 4m NOK avg. daily turnover in last 6 months**
- **NOK 223m total turnover in 4Q**
- **216k shares avg. daily volume in 4Q**
- **>4,100 owners**
- **52.6m shares\* (57.4 fully diluted)**

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- **ONCOS program update**

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- TG program update

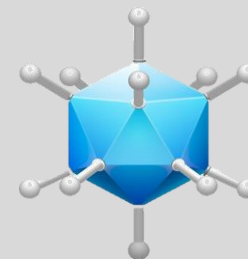
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- 2017 review & 2018 outlook

# Targovax has two immuno-oncology programs in clinical development

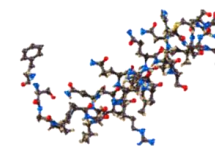
## ONCOS Oncolytic virus

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



## TG RAS neoantigen vaccine

- Cocktail of **synthetic peptides**
- Mimics cancer causing **RAS neoantigens**
- **Induces T-cells** specific to **RAS mutations**



# 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
- Randomized trial
- Ultra-orphan indication

**Ovarian / colorectal**  
Phase I/II - controlled  
78 patients

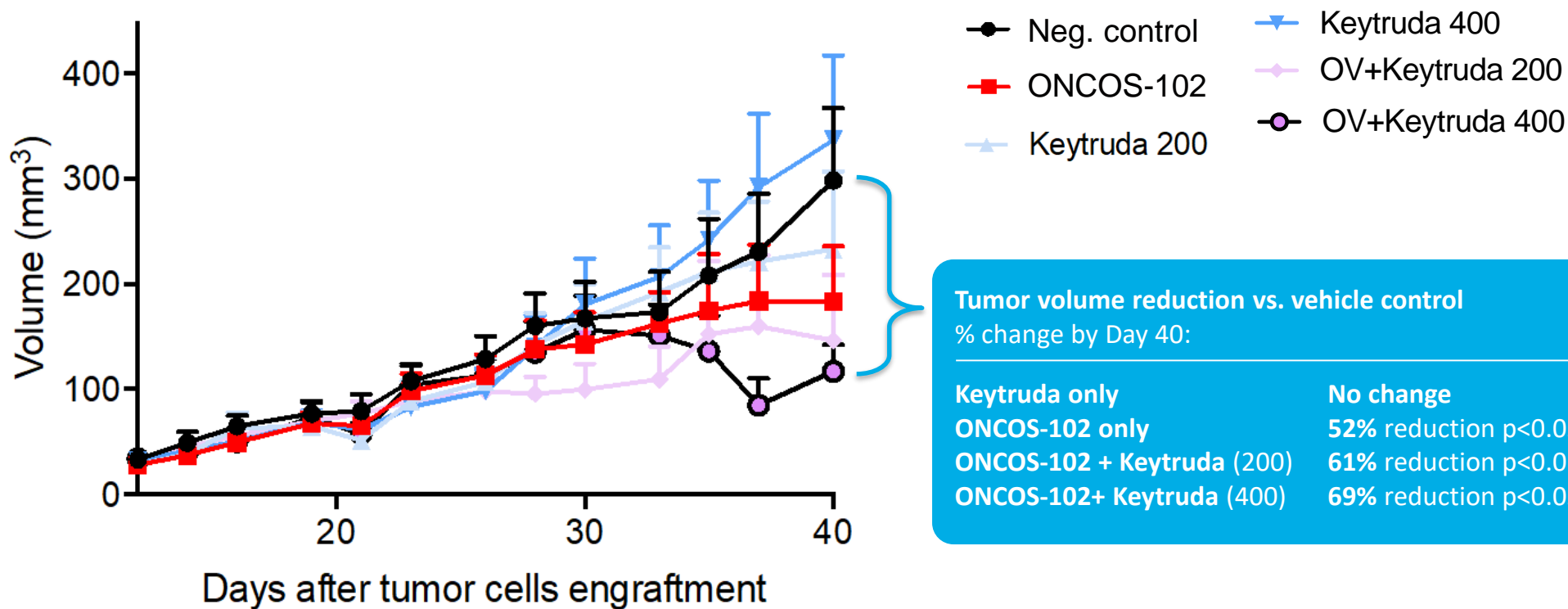
- Collaboration with Ludwig & CRI
- Combination with Medimmune's durvalumab (Imfinzi™)

**Prostate**  
Phase I  
10 patients

- Partnered with SOTIO
- Combination with DC therapy

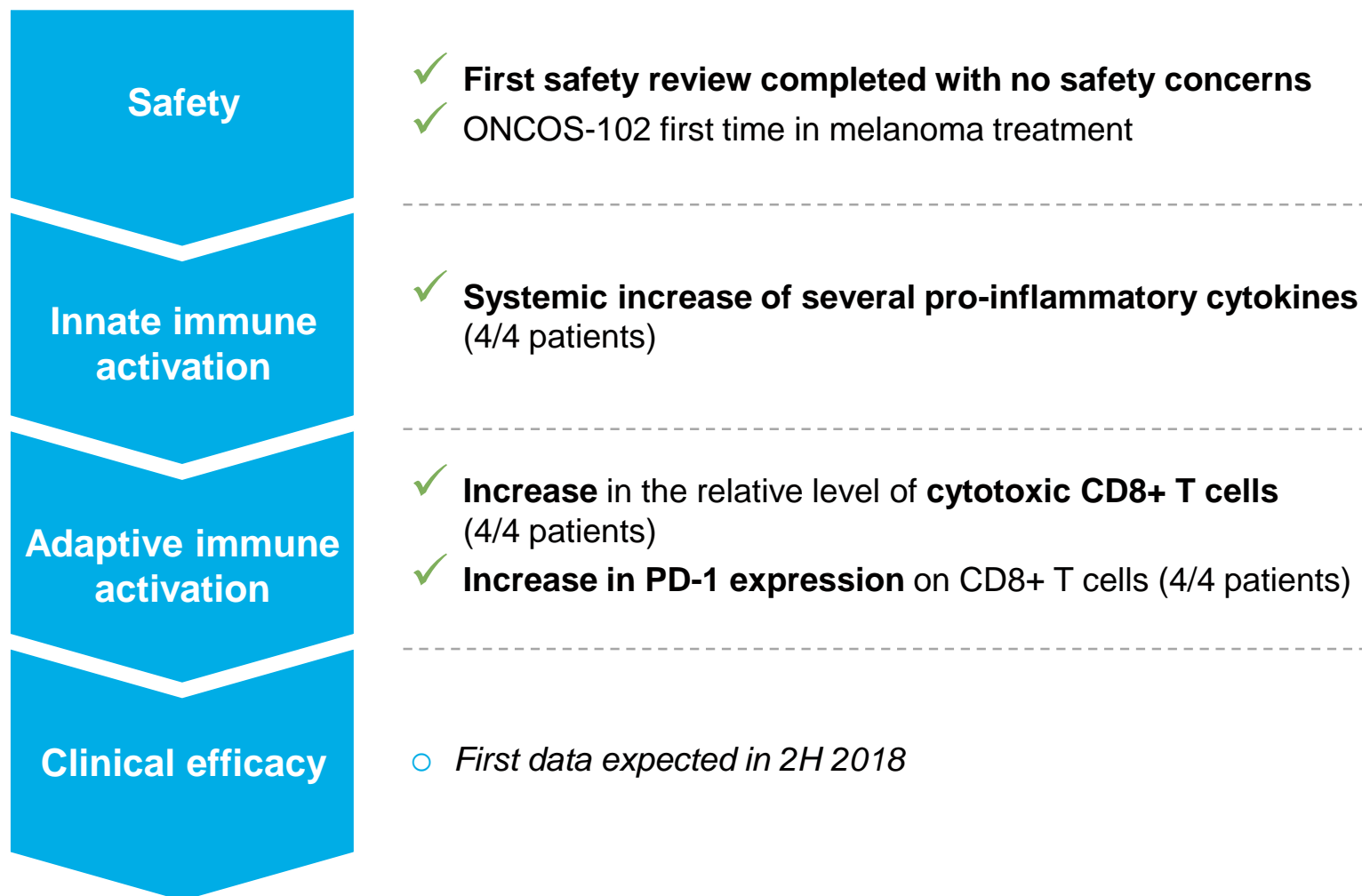
# 70% reduction in tumor volume with CPI combination in mouse melanoma model

Effect of ONCOS-102 and Keytruda in humanized mouse melanoma model, change in tumor volume





# Melanoma trial: ONCOS-102 is well-tolerated, and induces immune activation in the first four patients





# ONCOS clinical program overview

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

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- *Combination with chemo*
- *Randomized trial*
- *Ultra-orphan indication*

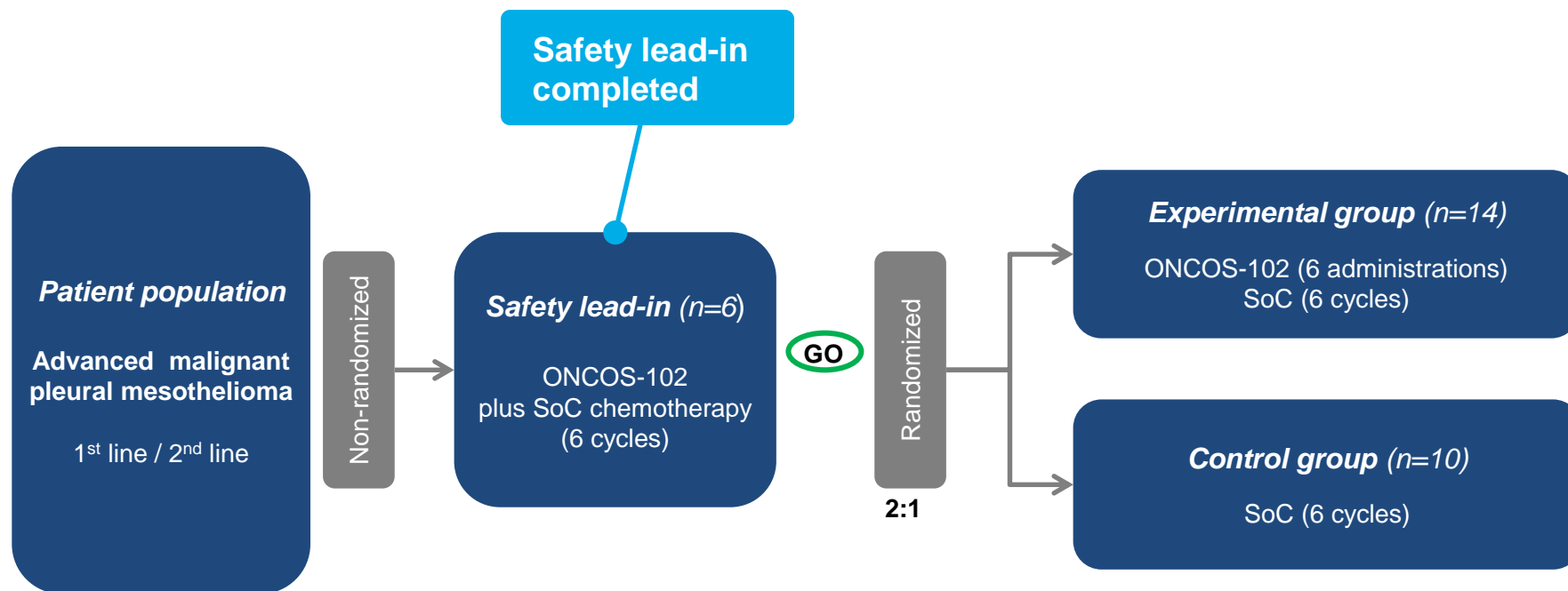
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- *Combination with Medimmune's  
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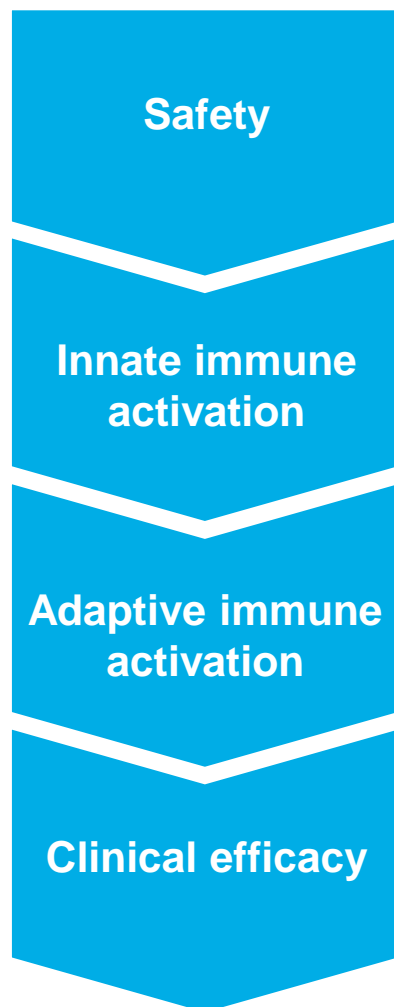
**Prostate**  
Phase I  
10 patients

- *Partnered with SOTIO*
- *Combination with DC therapy*

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



# Mesothelioma trial: ONCOS-102 passed the safety lead-in, and the randomized phase II part now open for recruitment



- ✓ **Phase Ib safety lead-in** cohort of six patients completed with **no safety concerns**
- ✓ ONCOS-102 first time in combination with chemotherapy

- ✓ **Systemic increase of several pro-inflammatory cytokines** (3/3 patients with available samples)

- ✓ **Increase in infiltration of cytotoxic CD8+ T cells into lesions** (2/2 patients with pre- and post-biopsies available)

- *First data expected in 1H 2018*

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- ONCOS program update

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- **TG program update**

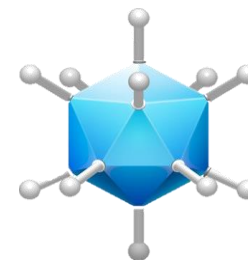
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# Targovax has two immuno-oncology programs in clinical development

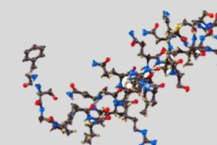
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# Clinical development overview for the TG program

## Historical trials

**Phase I**  
Resected &  
non-resected  
>200 patients

## Completing trial

**Phase I/II**  
Resected  
pancreatic cancer  
32 patients

- Encouraging median survival
- Full data 1H 2018

## Planned / recruiting trials

**Resected pancreas**  
TG01 - Phase II  
n = TBD

- Including CPI arm
- Currently seeking collaboration opportunities

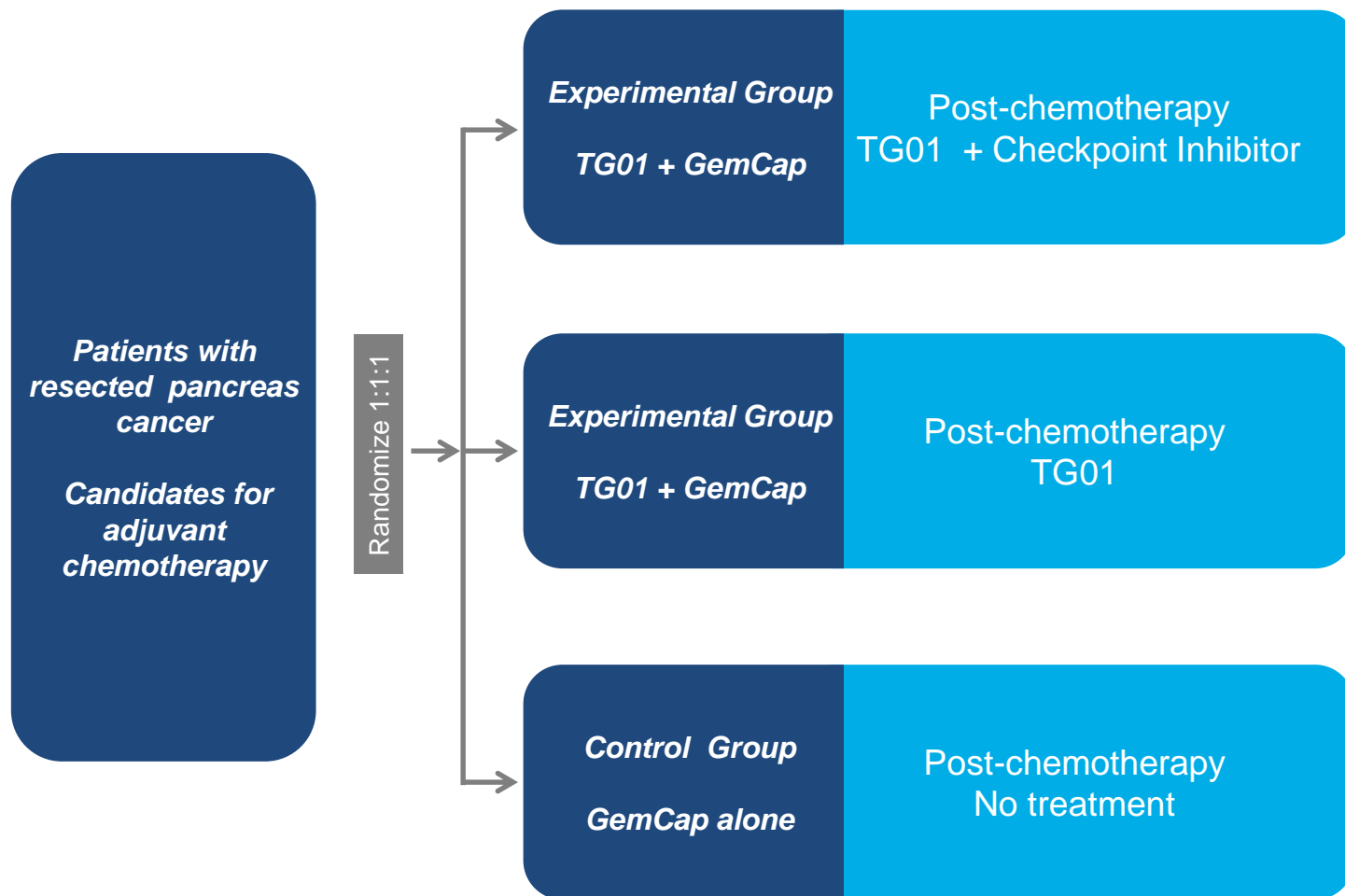
**Colorectal - TG02**  
Phase I

- TG02, targets 8 mutations
- Combination w/KEYTRUDA®  
Currently recruiting patients

### Observations in first patients:

- First safety review passed with no concerns
- Increase in pro-inflammatory cytokines
- Increase in PD-1 expression

# Planned TG01 phase II in resected pancreatic cancer



# Resected pancreatic cancer is the lead indication, but all RAS mutated cancers are potential TG targets



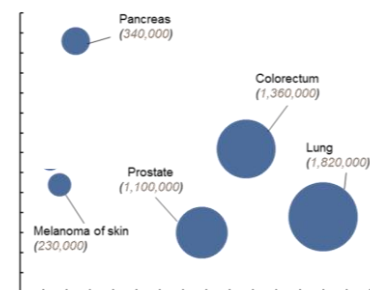
- TG01 lead indication
- Completing phase I/II
- Planning phase II
- 40.000 patients per year



- TG02 lead indication
- Phase I trial recruiting
- 50% RAS mutated
- Up to 500.000 patients per year



- TG02 potential future indication
- 30% RAS mutated
- Up to 500.000 patients per year



- TG02 + TG03 ultimate long-term potential
- 30% of all cancers
- Up to 30% of all cancer patients



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# Highlights from 2017

## Clinical data

- **TG01** showed **encouraging survival and immune activation data** in resected pancreatic cancer, which was **presented at ASCO 2017**
- **ONCOS-102** passed the **initial safety review in the two first combination trials** in melanoma (CPI) and mesothelioma (chemo)

## Patents

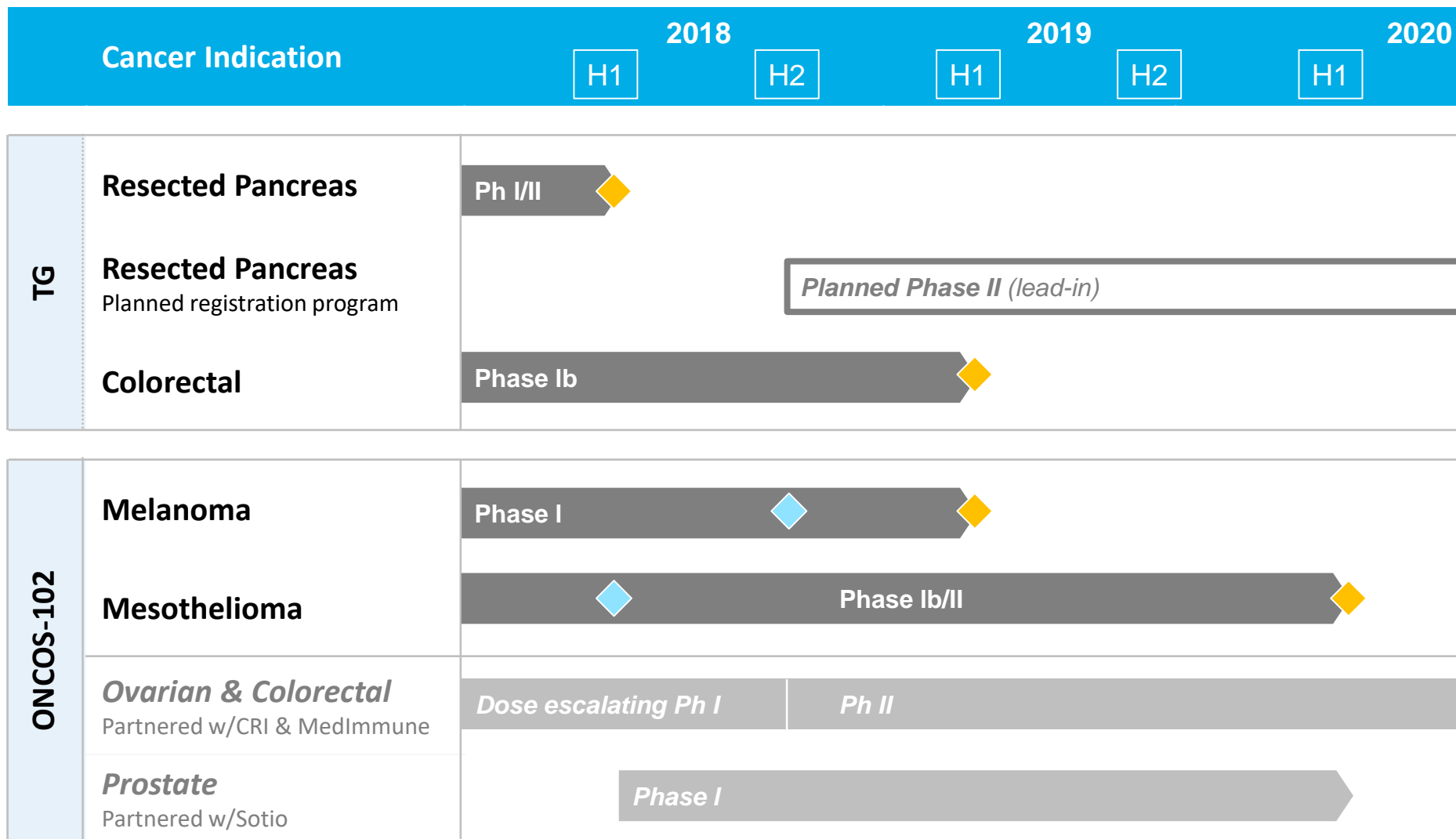
- The **TG IP position was significantly strengthened** by the grant of method-of-use and composition-of-matter **patents in the US**

## Corporate

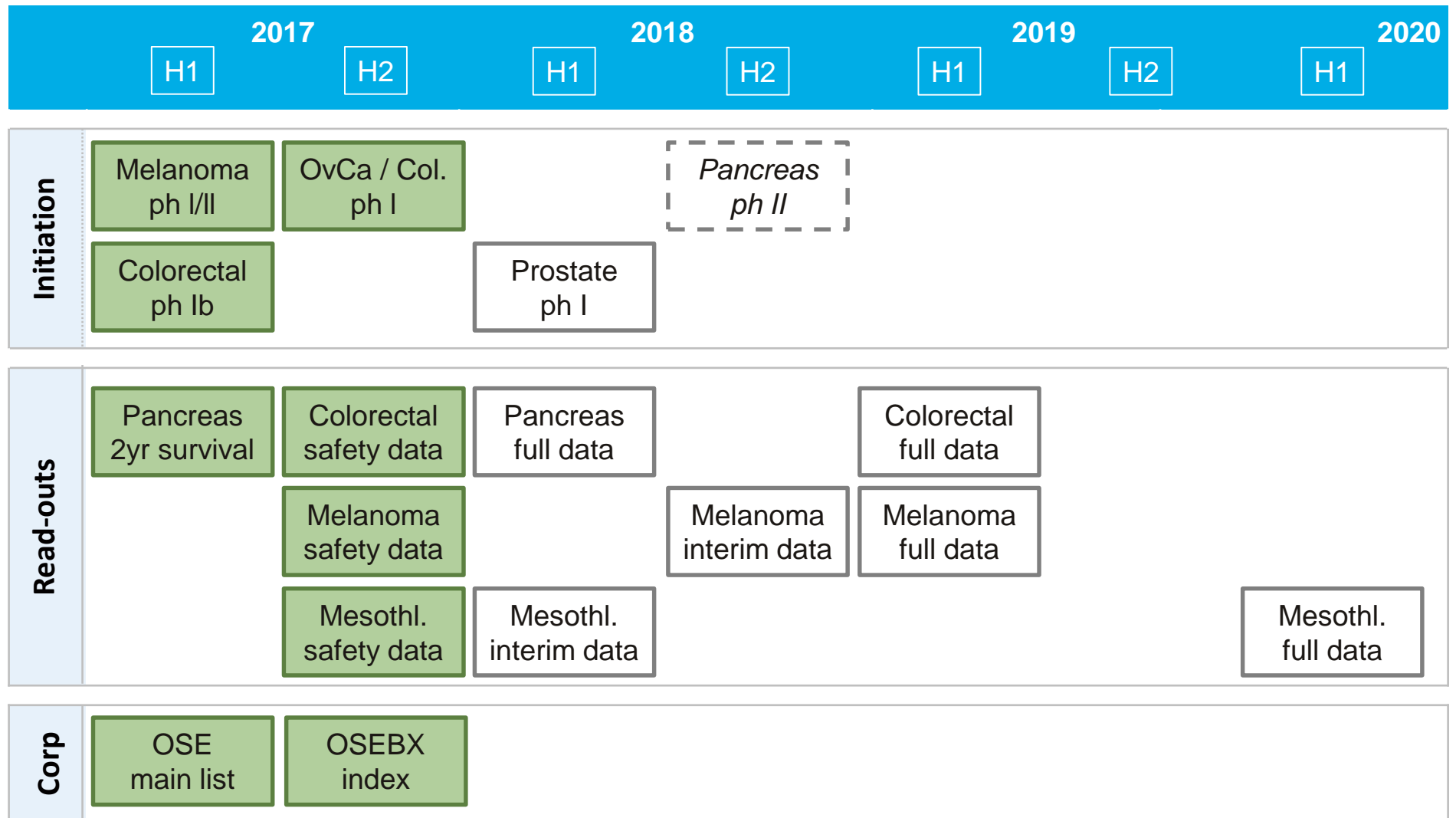
- The Targovax share was **upgraded to the main board of the Oslo Stock Exchange and included in the OSEBX index**
- **Targovax raised 200m in a private placement**, securing financing of the ongoing clinical program well into 2019
- The **management team was strengthened** by the addition of Dr. Erik D Wiklund as CFO and Dr. Michael Bogenstätter as CBO
- **Patrick Vink** was appointed as the new chairman of the Board

# Overview of Targovax' full clinical program

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



# News flow – Multiple near-term value inflection points



# Arming the patient's immune system to fight cancer

## Broad clinical program



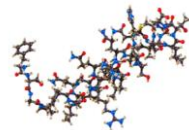
- ✓ Six shots on goal
- ✓ Several upcoming data points

## ONCOS



- ✓ Demonstrated ability to increase T-cell count
- ✓ Potential to make CPIs effective in more indications

## TG



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