



Arming the patient's immune system to fight cancer

**Redeye - Fight Cancer Seminar**  
10<sup>th</sup> March 2017

**Øystein Soug, CEO**



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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.

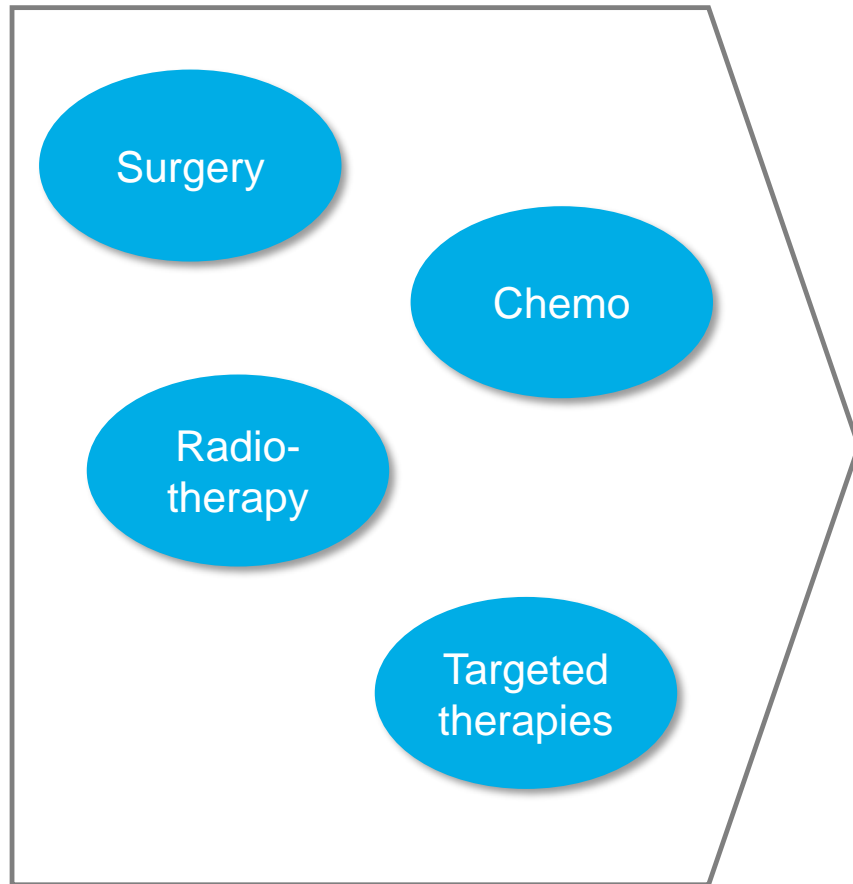
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# Investment highlights

<b>1</b> Core focus on immuno-oncology	<ul style="list-style-type: none"><li>✓ Lead product is an oncolytic adenovirus</li><li>✓ Targeting refractory solid, injectable tumors</li></ul>
<b>2</b> Proprietary platforms and pipeline	<ul style="list-style-type: none"><li>✓ Promising Phase I data from two platform technologies</li><li>✓ Immunological findings linked to clinical benefit</li></ul>
<b>3</b> Multiple near term value inflection points	<ul style="list-style-type: none"><li>✓ Six combination trials (Phase I and II)</li><li>✓ All six trials read out in 2017-2018</li></ul>
<b>4</b> Corporate	<ul style="list-style-type: none"><li>✓ Validated by partners</li><li>✓ Listed on Oslo Axess</li><li>✓ Market cap NOK ~1 bn (USD 123m)</li></ul>

# Immunotherapy – enables the immune system to kill cancer cells

Traditional cancer treatment



New approach - Immunotherapy

Making cancer into a treatable disease

# What is the immune system's role?

- To defend the body against hazards
- Hazards can be either virus, bacteria or cancer
- The immune system monitors all the time

# The immune system, cancer and immuno-oncology

- Constant “power struggle” between the immune system and cancer
- If the immune system “loses” we get ill
- Immune oncology is about helping the immune system to beat cancer

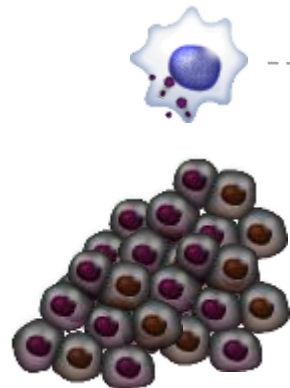


# How does the immune system kill cancer?

## "Recognition of threat"

### *Innate immune system*

- Always on standby
- Non-specific



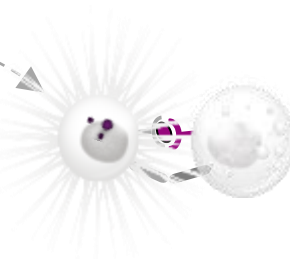
At the tumor

**Cancer signals  
(antigens) are  
transported**

## "T cell activation"

### *Adaptive immune system*

- Educated, specific



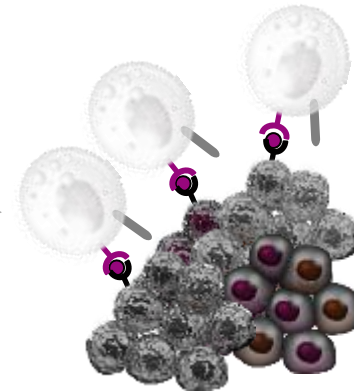
**T-cells are "educated",  
learn to recognize the  
cancer looks**

At the Lymph node

T cell  
activation

## "Immune attack"

### *Anti-tumor immune response*

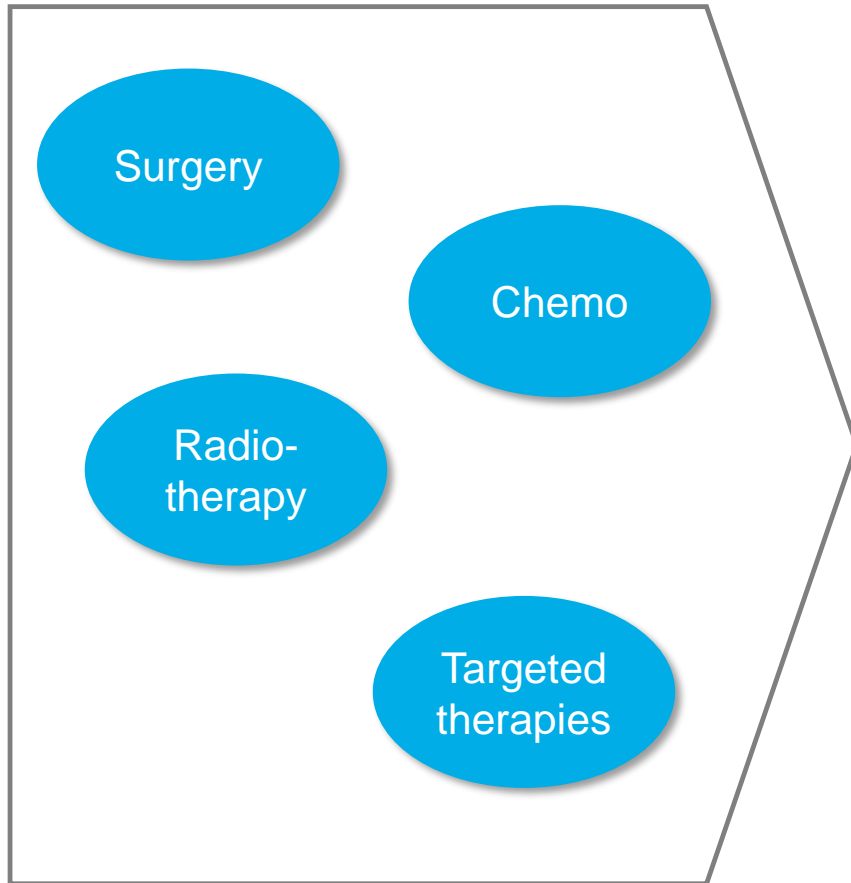


**T cells scan the body,  
find and kill the cancer  
cells**

At the tumor

# Immunotherapy – enables the immune system to kill cancer cells

## Traditional cancer treatment



## New approach - Immunotherapy

Enables the immune system to kill cancer cells:

- **Checkpoint inhibitors (CPI)**
  - General upgrade of immune system  
*Yervoy, Keytruda, Opdivo*
- **Oncolytic viruses**
  - Release cancer antigens  
*Imlygic, ONCOS-102*
- **Peptide vaccines**
  - Mimic cancer antigens  
*TG01, TG02*



# What's all the fuss about?



Prior to treatment



4 weeks



8 weeks



20 weeks



8 months

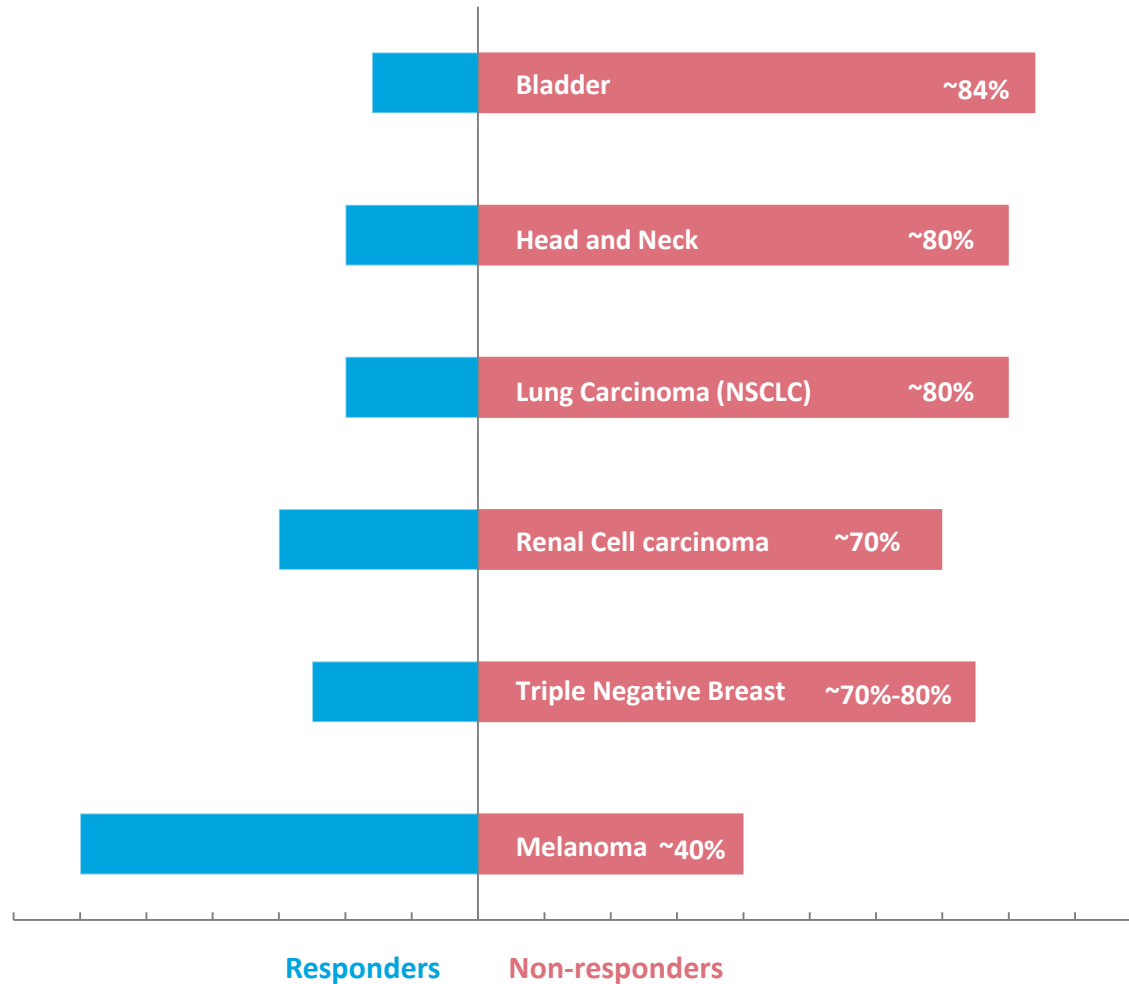


1 year

All pictures are an example of Yervoy (BMS) treated melanoma

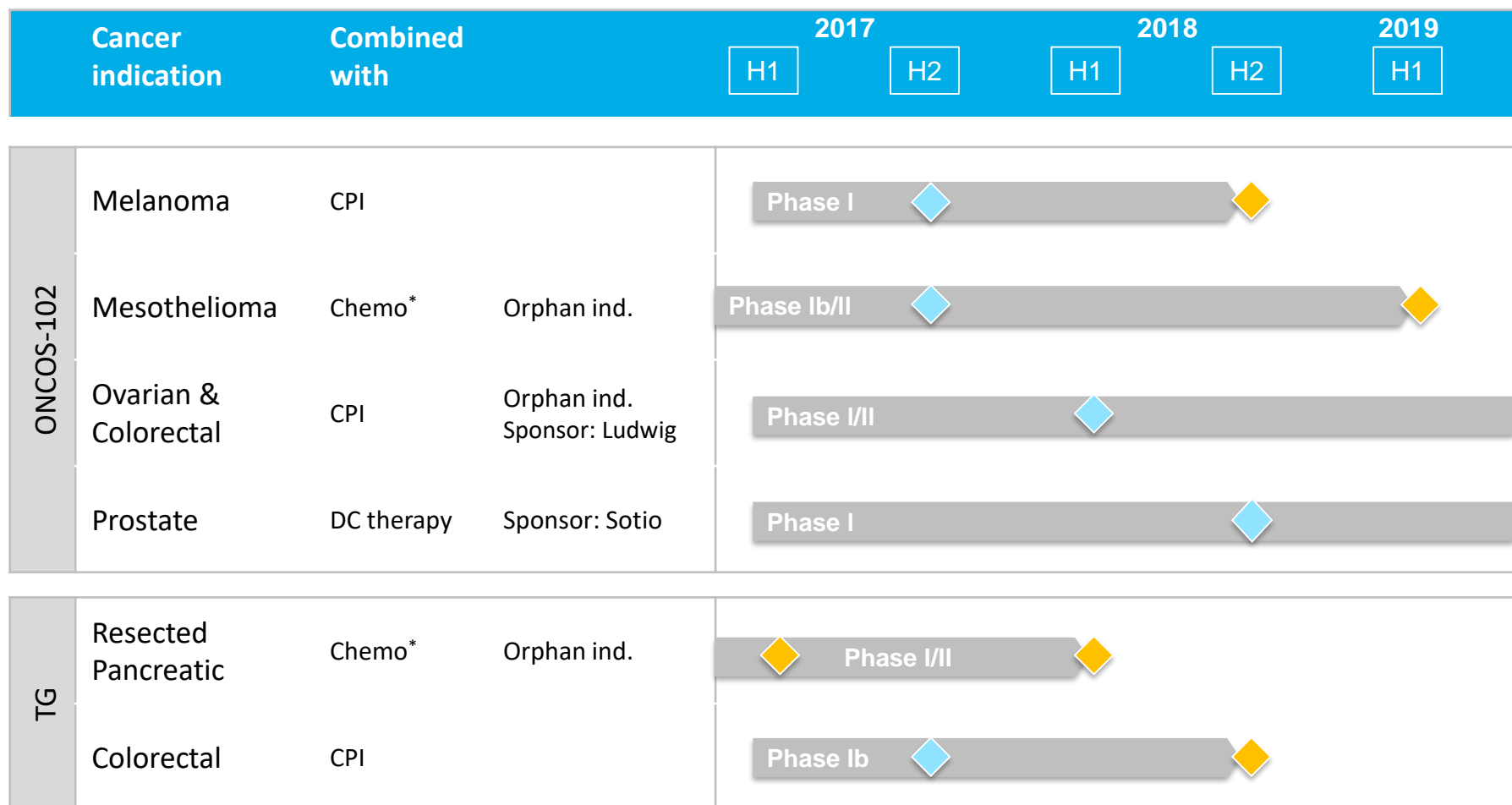
# Large unmet need for checkpoint inhibitor refractory patients

*Response rate to checkpoint inhibitors (CPIs)*




ONCOS-102 can potentially activate non responders to become sensitive to CPI's

# Six shots on goal



 Interim data

 Clinical, immune and safety data

**4 readouts**  
2017

**5 readouts**  
2018

# RAS-mutated tumours cause 20-30% of all cancers

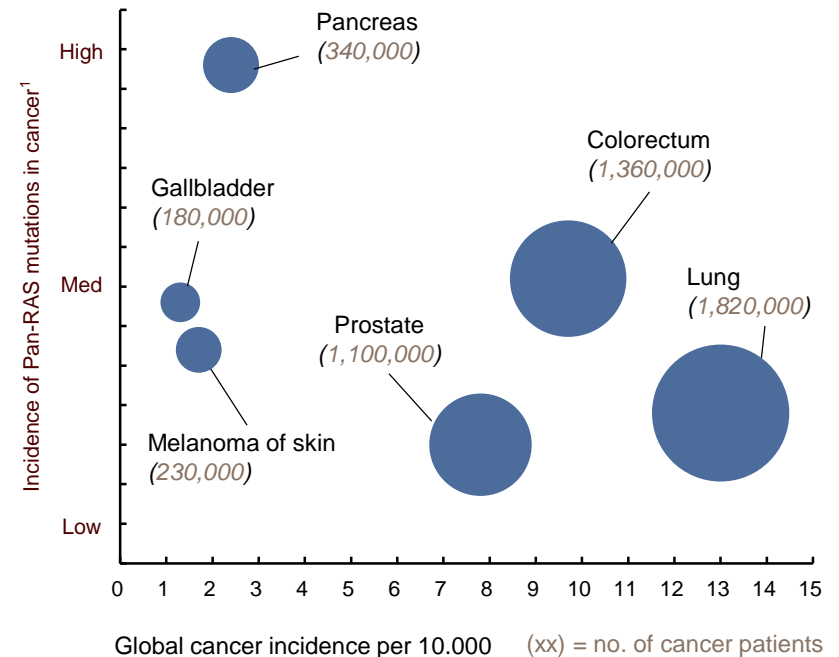
RAS is a protein found in every type of cell

RAS controls cell division and growth

A mutation in RAS leads to uncontrolled cell division and growth

Uncontrolled cell growth is the definition of cancer

TG peptides can potentially address 20-30% of all cancers



<sup>1</sup>Cancer Res, PS 2012, Nov 15, 2012

# Encouraging survival rate and “signal” of efficacy in TG01 trial

## CT TG01-01; A Phase I/II Trial of TG01 and Gemcitabine as Adjuvant Therapy for Treating Patients with Resected Adenocarcinoma of the Pancreas

- 68% (13 of 19) of the patients in cohort 1 were alive two years after the resection
  - Published historical rate 30-53% suggests a signal of clinical efficacy for TG01<sup>1</sup>
- Abstract submitted to ASCO 2017 (June) from this 1<sup>st</sup> cohort
  - Efficacy, safety, immune activation
- In summary: encouraging survival rate and “signal” of efficacy

<sup>1</sup> J Neoptolemos 2010, J van Loethem 2010, H Oettle 2013, M Sinn 2015, K Uesaka 2016 (In these reported studies overall survival is measured either from surgery or treatment randomization).

# Financial summary

Operations			
Cash	NOK 172m	USD 20m	
Annual run rate	NOK 110m	USD 13m	<i>Last four quarters</i>
Annual opex	NOK 120m	USD 14m	<i>Last four quarters</i>

The share	OSE: TRVX		
Daily liquidity	NOK 9m	USD 1m	<i>Last two month's avg.</i>
Market Cap	NOK ~1 bn	USD 123m	<i>At share price NOK ~24</i>
Debt	NOK 40m	USD 5m	<i>EUR 6m conditional</i>
No. of shares	42.2m		<i>44.9m fully diluted</i>
Analysts	DNB, ABG Sundal Collier, Arctic, Redeye, Norske Aksjeanalyser		

# Arming the patient's immune system to fight cancer

1 TG	✓ Encouraging top line two-year survival data
2 ONCOS	✓ Important proof of concept trial in CPI refractory melanoma ✓ Data in 2H17
3 Clinical trials	✓ Six shots on goal