Activating the immune system to fight cancer
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.
Introduction

2. ONCOS oncolytic virus program
3. TG mutRAS neoantigen vaccine program
4. Targovax pipeline
5. Corporate overview
From a sequential treatment strategy directly targeting the cancer...

1. **Surgery**
   When possible, surgical resection to remove the tumor

2. **Radiotherapy**
   Tumor irradiation to shrink tumor volume

3. **Chemotherapy**
   Cornerstone treatment in most cancer forms
…to an integrated combination approach

HARNESSING THE POWER OF THE PATIENT’S OWN IMMUNE SYSTEM

Targovax focus

Immune activators
Vaccines, oncolytic viruses

Immune boosters
CAR-Ts, TCRs

Immune modulators
Checkpoint inhibitors

Targeted therapy
PARPs, gene therapy, etc.

Surgery - Radio - Chemo
Mode of action

IMMUNE ACTIVATORS TURN COLD TUMORS HOT

Example from Targovax Phase I trial – Ovarian cancer patient

Before injection of oncolytic virus
“Cold tumor”
No T-cell infiltration

After injection of oncolytic virus
“Hot tumor”
Full T-cell infiltration

CD8+ T-cell
Recognizes and destroys cancer cells
Targovax has two complementary programs in clinical development, PROVEN TO ACTIVATE THE IMMUNE SYSTEM

**ONCOS**
Oncolytic virus

- Genetically **armed adenovirus**
- **Alerts the immune system** to the presence of cancer antigens
- **Induces T-cells** specific to patients’ tumor

**TG**
RAS neoantigen vaccine

- **Shared neoantigen**, therapeutic cancer vaccine
- **Triggers the immune system to recognize** oncogenic, mutated RAS neoepitopes
- **Induces mutant RAS-specific T-cells**

Activates the immune system

Triggers patient-specific responses

No need for individualization
2 ONCOS oncolytic virus program

3. TG mutRAS neoantigen vaccine program
4. Targovax pipeline
5. Corporate overview
ONCOS-102
Phase I proof of concept

IMMUNE ACTIVATION DEMONSTRATED

ONCOS-102 Phase I trial design:
- 12 patients, 7 different solid tumors
  - Ovarian, Mesothelioma, Colorectal, Sarcoma, Liver, Lung
- No other treatment options left
  - All chemotherapy refractory
- ONCOS-102 monotherapy
  - 9 injections over 5 months

Top-line results:
- 100% innate immune activation
- 11/12 patients increase in CD8+ T-cells
- 40% stable disease
- 2 long-term survivors
- Abscopal effect and lasting systemic immune responses observed

Ranki et al., Journal for Immunotherapy of Cancer 2016, 4(17)
ONCOS-102
Phase I proof of concept

CD8+ T-CELL INFILTRATION CORRELATES WITH SURVIVAL

Case example
- **Ovarian cancer**, 38yr old woman
- Failed on 5 types of chemotherapy
- >1,000-fold increase in CD8+ T-cell infiltration
- **Tumor specific T-cells detected** up to 2 years after treatment
- **Stable disease for 3 years**, survived for 3.5 years

Fold-change CD8+ T-cell count vs. survival

![Graph showing the correlation between CD8+ T-cell count fold-change and overall survival.](image)

- $r = 0.75$, $p = 0.005$

Ranki et al., Journal for Immunotherapy of Cancer 2016, 4(17)
ONCOS
CLINICAL DEVELOPMENT STRATEGY

1. Mesothelioma
   - Orphan disease

2. CPI synergy
   - Intra-tumoral
   - Indications with no/limited effect of CPIs
     - Ongoing melanoma Phase I
     - Combo w/PD-1
     - >100,000 patients per year

3. CPI synergy
   - Intra-peritoneal
   - Peritoneal malignancies
     - Ongoing Phase I/II in ovarian and colorectal
     - Combo w/PD-L1
     - >100,000 patients per year

4. Next generation
   - ONCOS viruses
   - Double transgene adenoviruses
     - Novel targets
     - Ongoing in vivo testing
     - Broad spectrum of solid tumors

Target launch indication
- Orphan drug status
- Aim to become addition to SoC
- Ongoing Phase I/II
- 15,000 patients per year

SOURCE: Global Data, EU big 5 + US
Compassionate use program
Finland
115 patients

Phase I trial
12 patients
7 indications

Melanoma
Phase I
12 patients
- Combination with pembrolizumab
- PoC in CPI refractory patients
- Memorial Sloan Kettering

Mesothelioma
Phase I/II - randomized
30 patients
- Orphan indication
- Combination with SoC chemo
- Randomized vs. SoC

Peritoneal cancer
Phase I/II
up to 78 patients
- Ovarian and colorectal cancers
- Combination with durvalumab
- Intraperitoneal administration
- Collaboration with AZ, CRI, Ludwig

Completed trials
Ongoing trials
Trials sponsored by partner
ONCOS-102 in malignant pleural mesothelioma

PHASE I/II STUDY DESIGN IN COMBINATION WITH SoC

**Patient population**
Advanced malignant pleural mesothelioma
1st line / 2nd line

**Safety lead-in** (n=6)
ONCOS-102 plus SoC chemotherapy (6 cycles)

**Experimental group** (n=14)
ONCOS-102 (6 administrations)
SoC (6 cycles)

**Control group** (n=10)
SoC (6 cycles)

**Randomized part currently enrolling**

Non-randomized

Randomized
ONCOS-102 in malignant pleural mesothelioma

**SIGNAL OF EFFICACY IN THE FIRST 6 PATIENTS**

1. **Safety**
   - ONCOS-102 well-tolerated in combination with chemotherapy

2. **Innate immune activation**
   - Systemic increase of pro-inflammatory cytokines in 6/6 patients (IL-6, TNFα and IFNγ)

3. **Adaptive immune activation**
   - Increase in tumor infiltration of CD4+ and CD8+ T cells in 3/4 patients

4. **Clinical activity**
   - Clinical activity seen in 3/6 patients after 6 months
   - 50% disease control rate
ONCOS-102 in malignant pleural mesothelioma

DEVELOPMENT STRATEGY AND INDICATIVE TIMELINES

2018

Ongoing
Phase I/II, randomized
30 patients

2019

2020

2021

2022

Planned
Expansion of randomized Phase II
~60 additional patients (N=90)

Future
Phase III
n=TBD

Randomized ORR and OS data 30 patients

Decide on possible CPI combination arm

EMA & FDA advisory meetings

Randomized ORR and OS data 90 patients

Potentially use as basis for a submission for conditional approval

Potentially start Phase III OS trial for full MAA
3 TG mutRAS neoantigen vaccine program

4. Targovax pipeline
5. Corporate overview
**The RAS gene is mutated in**

**90% of Pancreatic and 50% of Colorectal Cancers**

---

**Frequency of RAS mutations**

*Global cancer incidents per 10,000*  
(xx) = no. of cancer patients

- **High**
  - Pancreas (340,000)
  - Gallbladder (180,000)
  - Melanoma of skin (230,000)

- **Med**
  - Colorectal (1,360,000)
  - Prostate (1,130,000)

- **Low**
  - Lung (1,820,000)

---

- RAS mutations are oncogenic and result in uncontrolled cell division

- There are no existing therapies targeting RAS mutations

- Targovax’ TG program is a unique vaccine approach for mutant RAS cancer

---

Fernandez-Medarde; RAS in Cancer and Developmental Diseases; Genes & Cancer. 2011;2(3)
Mutated RAS is a well-defined, cancer-specific neo-antigen, driving the cancer. TG peptides are clinically proven to induce both CD4+ and CD8+ mutRAS T-cells. Initial focus on resected patients, with stronger immune system.

**Historical lessons learned**

- **Target often poorly defined** and not cancer specific, mainly TAAs
- **No or insufficient immune activation** of the adaptive immune system
- Most clinical trials have been done in advanced disease

**The TG approach**

- Mutated RAS is a well-defined, cancer-specific neo-antigen, driving the cancer
- TG peptides are clinically proven to induce both CD4+ and CD8+ mutRAS T-cells
- Initial focus on resected patients, with stronger immune system
TG

CLINICAL DEVELOPMENT STRATEGY

1. **Pancreatic cancer (resected)**
   - TG01 lead indication
     - Phase I/II completed
     - Orphan drug status
     - Up to 40,000 patients per year

2. **Colorectal cancer**
   - TG02 lead indication
     - Phase I trial ongoing
     - 50% RAS mutated
     - Up to 500,000 patients per year

3. **Lung cancer (NSCLC)**
   - TG02 potential future indication
     - 30% RAS mutated
     - Up to 500,000 patients per year

4. **All mutRAS cancers**
   - TG02 + TG03 ultimate long-term potential
     - 30% of all cancers
     - Up to 30% of all cancer patients

Source: Global data, Riva et al. Plos One 2017

Estimated total addressable patient number with RAS mutations in US, EU and China
TG CLINICAL PROGRAM OVERVIEW

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

Phase I/II
Resected pancreatic cancer
32 patients

Colorectal - TG02
Phase I
Up to 20 patients

Colorectal - TG02
Phase I
Up to 20 patients

Ongoing trials
Completed trials
Planned trial

Colorectal - TG02
Phase I
Up to 20 patients

Colorectal - TG02
Phase I
Up to 20 patients

Ongoing trials
Completed trials
Planned trial

---

- TG02 targets 8 RAS mutations
- Neoadjuvant biomarker study
- Combination with KEYTRUDA®
- Currently recruiting patients

- TG01 targets 7 RAS mutations
- Combination with checkpoint inhibitor
- Addition to standard of care

---

Completed trials
Ongoing trials
Planned trial

---

Completed trials
Ongoing trials
Planned trial

---

Completed trials
Ongoing trials
Planned trial

---

Completed trials
Ongoing trials
Planned trial

---

Completed trials
Ongoing trials
Planned trial

---

Completed trials
Ongoing trials
Planned trial

---

Completed trials
Ongoing trials
Planned trial
## TG01 IN RESECTED PANCREATIC CANCER
**SIGNAL OF EFFICACY DEMONSTRATED IN PHASE I/II TRIAL WITH ADJUVANT CHEMOTHERAPY**

<table>
<thead>
<tr>
<th><strong>Median overall survival (N=32)</strong></th>
<th><strong>33.4 vs. 27.6 months</strong> reported in the ESPAC4 trial for gemcitabine alone (counting from time of surgery)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2-year survival rate</strong></td>
<td><strong>23 out of 32 patients alive two years after surgery (72%)</strong>, comparing to 30-53% two-year survival with gemcitabine alone</td>
</tr>
<tr>
<td><strong>1-year survival rate</strong></td>
<td><strong>30 out of 32 patients alive one year after surgery (94%)</strong></td>
</tr>
<tr>
<td><strong>mutRAS immune activation</strong></td>
<td><strong>29 out of 32 patients (90%)</strong> had <strong>RAS-specific immune activation</strong> by one-year</td>
</tr>
<tr>
<td><strong>Dosing and safety</strong></td>
<td><strong>Optimized dosing regimen defined</strong> for future development, and TG01 is well-tolerated in combination with chemotherapy</td>
</tr>
</tbody>
</table>
TG01 CURRENT KAPLAN-MAIER SURVIVAL CURVES

First (n=19) and second (n=13) patient cohort

- **2nd cohort**: optimized dosing regimen
- 77% 2-year survival rate (10/13)
- mOS not reached
- 9 patients alive at time of analysis

- **1st cohort**: full dosing regimen
- 68% 2-year survival rate (13/19)
- mOS 33.1 months (from surgery)
- 5 patients alive at time of analysis

mOS 27.6 months from surgery for gemcitabine alone in ESPAC4 trial
4 Targovax pipeline

5. Corporate overview
### Cancer Indication

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TG</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resected Pancreas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resected Pancreas</td>
<td>Phase I/II</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Randomized trial in planning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colorectal</td>
<td>Phase Ib</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ONCOS-102</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Melanoma</td>
<td>Phase I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mesothelioma</td>
<td></td>
<td>Phase Ib/II</td>
<td></td>
</tr>
<tr>
<td>Peritoneal malignancies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collaboration w/CRI, Ludwig &amp; MedImmune</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prostate</td>
<td></td>
<td></td>
<td>Phase I</td>
</tr>
<tr>
<td>Collab. w/Sotio</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### CLINICAL PROGRAM TIMELINES

- **Interim data**
- **Clinical, immune and safety data**
- **Ongoing clinical trials, Targovax sponsored**
- **Ongoing clinical trials, partner sponsored**

***Planned randomized Phase II (lead-in)***
ACTIVATING THE PATIENT`S IMMUNE SYSTEM
to fight cancer

**Broad clinical program**
Six shots on goal
Several upcoming data points

**Defined path to market**
Aim to become frontline treatment in high unmet need cancers
Orphan status in mesothelioma and pancreas

**Innovative pipeline**
Next gen double transgene viruses in testing
Systemic administration routes under evaluation
5 Corporate overview
TARGOVAX HAS A SOUND FINANCIAL POSITION
with cash to complete the planned clinical program well into 2019

<table>
<thead>
<tr>
<th>Operations</th>
<th>The share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash end of Q1 - Mar 31st 2018</td>
<td>Market Cap - at share price NOK ~17</td>
</tr>
<tr>
<td><strong>229 / 29</strong></td>
<td><strong>900 / 110</strong></td>
</tr>
<tr>
<td>NOK million / USD million</td>
<td>NOK million / USD million</td>
</tr>
<tr>
<td>Net cash flow - total Q1</td>
<td>Daily turnover - rolling 6 month avg.</td>
</tr>
<tr>
<td><strong>-32 / -4</strong></td>
<td><strong>3 / 0.4</strong></td>
</tr>
<tr>
<td>NOK million / USD million</td>
<td>NOK million / USD million</td>
</tr>
<tr>
<td>Annual run rate - last four quarters</td>
<td>Analyst coverage</td>
</tr>
<tr>
<td><strong>113 / 15</strong></td>
<td>DNB, ABG Sundal Collier, Arctic, Redeye, Norske Aksjeanalyser, Edison</td>
</tr>
<tr>
<td>NOK million / USD million</td>
<td></td>
</tr>
</tbody>
</table>
THE SHAREHOLDER BASE IS STRONG
with a mix of specialist, generalist and retail investors

Key international investors participating in PP 2017
- Nyenburgh (NL)
- Trium (UK)
- Millenium Capital Partners (UK)
- Interogo (SWE)
- AP3 (SWE)
- Aramea AM (DE)

Shares and options
57.4m shares fully diluted
- Average strike price on options ~NOK 20
- Total dilutive effect of options is 8.1%
52.6m ordinary shares
- Management ownership: 0.3%
- >4,100 shareholders