



Arming the patient's immune system to fight cancer

Q1 2017 presentation

April 25th 2017

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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.

First quarter highlights

Data

- Encouraging top line two-year survival data from the phase I/II TG01 clinical trial in resected pancreatic cancer, with 68% of patients still alive after 2 years

Share listing

- Targovax upgraded its share listing from Oslo Axess to the main Oslo Stock Exchange list (OSE)
- Average daily share liquidity increased from NOK 9m to 13m relative to Q4 2016

Finances

- Cash NOK 147m
- Operating expenses NOK 27m
- Net cash flow NOK -24m

People

- Erik Digman Wiklund appointed CFO, starting April 1st 2017

Post-period

- Targovax will present clinical data from the TG01 clinical trial in resected pancreatic cancer at the ASCO Annual Meeting in June
- The exploratory Phase Ib clinical trial in locally recurrent RAS-mutated colorectal cancer was initiated

TG01 phase I/II resected pancreatic trial

Encouraging top line two-year survival data

TG background – “reasons to believe”

History

- 120 patients treated with TG peptides in 1990's
- Encouraging 10 year long-term survival for resected patients treated with TG01 or single TG peptides¹

RAS

- RAS mutations are well-known and characterized neoantigens
- Regulate cell proliferation; mutations cause abnormal cell growth
 - the definition of cancer itself
- Exclusively found in cancer cells

TG-peptides

- Unique peptides of 17 amino acid chain length activate both RAS specific CD4+ and CD8+ T cells, which recognize and destroy mutated RAS cancer cells

¹ Wedén et al, 2011 and Clinical trial reports

TG01 in resected pancreatic cancer: Encouraging survival rate and “signal” of efficacy

	First Cohort	Modified Cohort
1 Immunization schedule	<ul style="list-style-type: none"> 26 vaccinations over 2 years 	<ul style="list-style-type: none"> 15 vaccinations over 2 years
2 Patient population	<ul style="list-style-type: none"> Cohort completed 19 patients 	<ul style="list-style-type: none"> Recruitment completed 13 patients
3 Immune activation	<ul style="list-style-type: none"> DTH response: 15 of 18 T-cell response: 6 of 8 	<ul style="list-style-type: none"> DTH response at 8 weeks: 4 of first 5 <i>T-cell response: not yet available</i>
4 Interim 1-year survival	<ul style="list-style-type: none"> 14 of 15 patients alive after 1 year No patients died from pancreatic cancer during the first year 	<ul style="list-style-type: none"> Not planned
5 2-year survival	<ul style="list-style-type: none"> 13 of 19 patients (68%) alive after 2 year Published* historical rate 30-53% suggests a signal of clinical efficacy for TG01 	<ul style="list-style-type: none"> 1H18
6 Safety	<ul style="list-style-type: none"> Generally well tolerated 4 allergic reactions triggering the “modified cohort” 	<ul style="list-style-type: none"> <i>Not yet available</i>

¹ ITT – Intention to treat

² 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).

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 TG01¹
- Abstract accepted for poster presentation at ASCO 2017 (June) from the 1st cohort
 - Efficacy, safety, immune activation
- Encouraging survival rate and “signal” of efficacy providing strong rationale and KOL support to move program forward
- Planning for a larger randomized controlled Phase II trial has been initiated

¹ 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).

ONCOS-102 phase I Melanoma trial

Clinical proof of platform

Checkpoint inhibitors have revolutionized cancer treatment



Prior to Yervoy



4 weeks



8 weeks



20 weeks



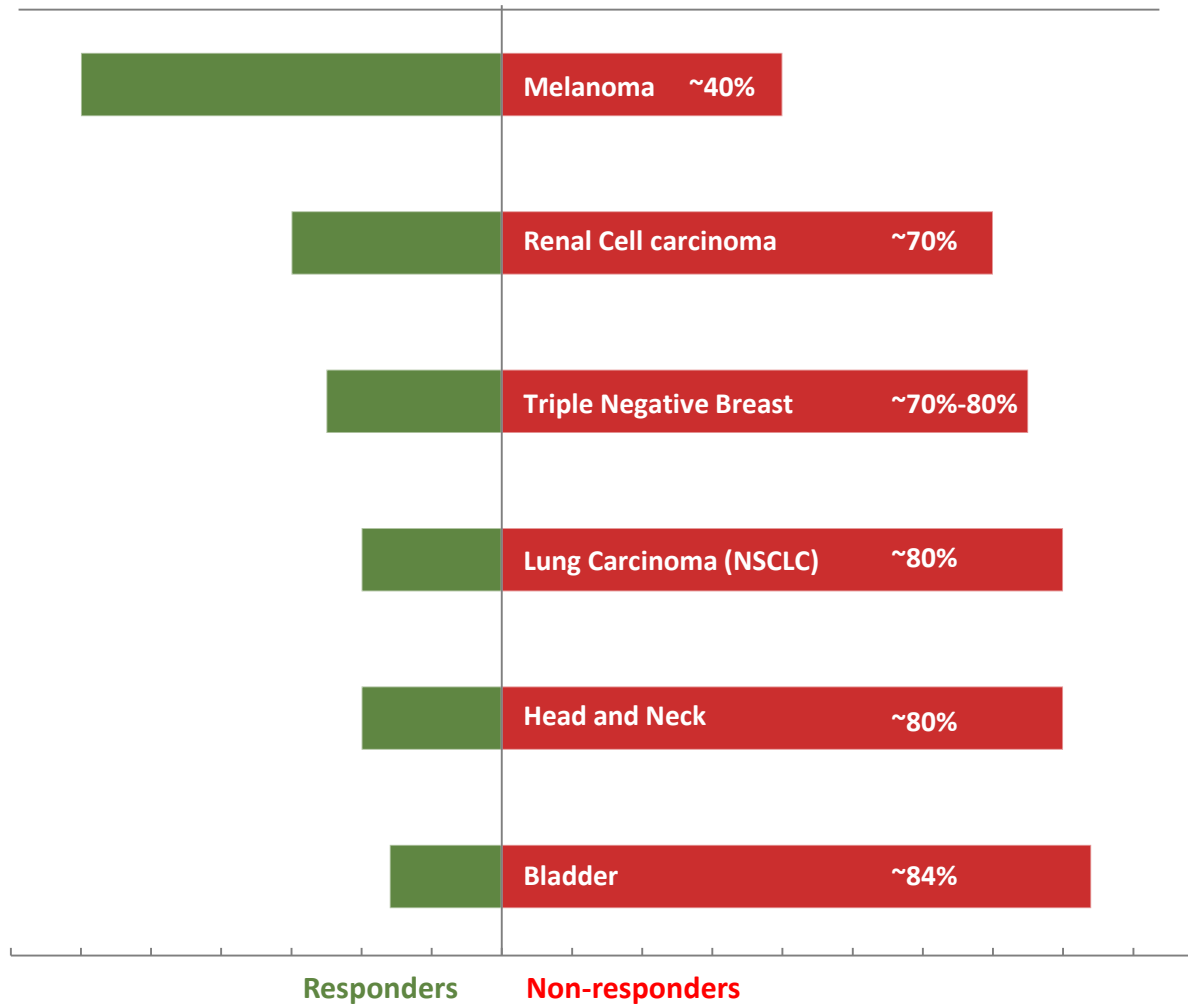
8 months



1 year

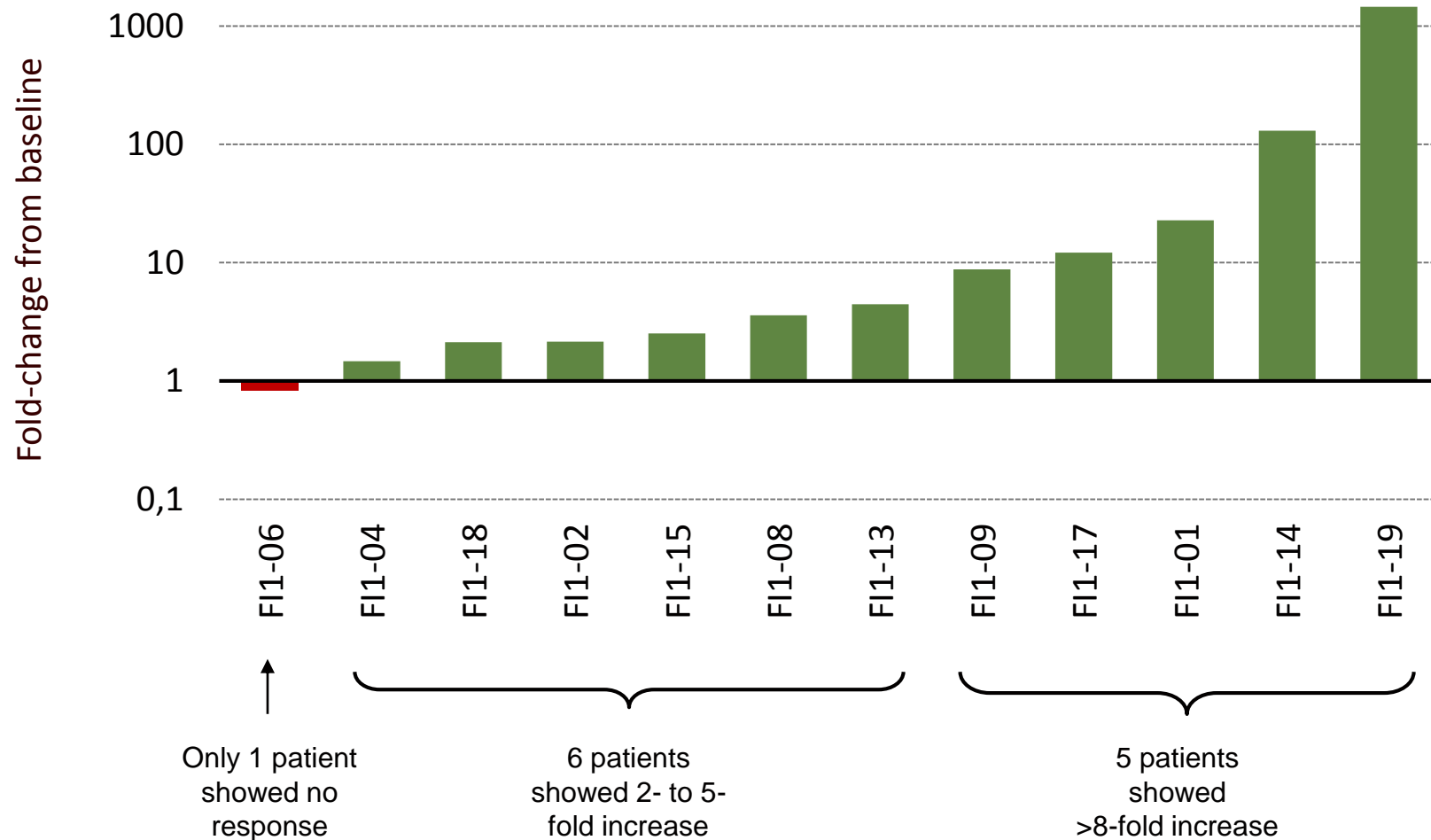
Checkpoint inhibitor refractory patients have a large unmet medical need for effective treatment

Response rate to checkpoint inhibitors (CPIs)



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

ONCOS-102 increased tumor infiltrating CD8+ T-cells in 11 of 12 cancer patients with a range of solid tumors



ONCOS-102: CPI refractory melanoma trial details

Setting

- Advanced malignant melanoma patients not responding to CPIs
- Immune activate patients with ONCOS-102, then re-challenge with a CPI (Keytruda®)

Cohorts

- Six patients with prior PD1 monotherapy
- Six patients with prior PD1 plus Yervoy combination therapy

Key endpoints

- Safety
- Immune activation
- Clinical response data

Sequence

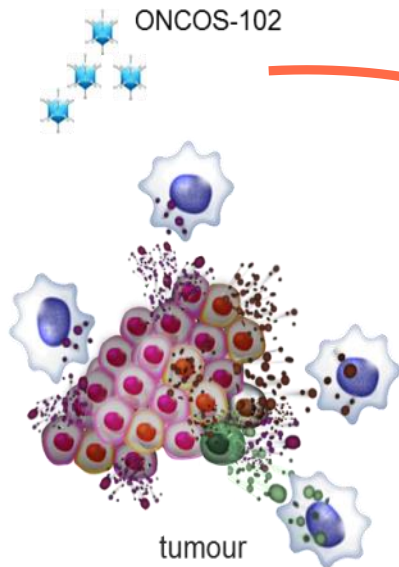
ONCOS-102 – 3 weeks

Keytruda – 5 months

How does ONCOS-102 work?

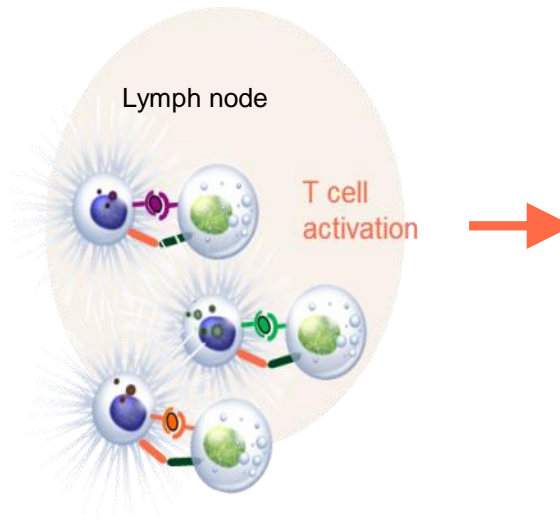
At the tumor:

Virus injected directly into tumor, replicates, lyses cells and releases antigens. Immune system picks up antigens



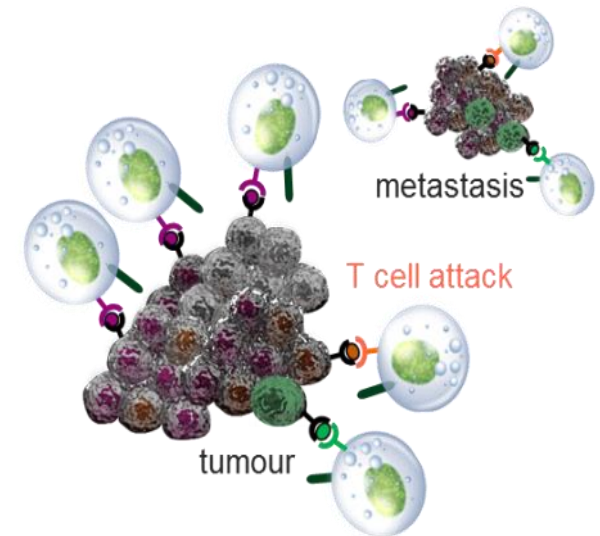
At the lymph node:

Immune system starts production of tumor specific T-cells



At the tumor lesions:

T-cells find tumor lesions with corresponding tumor antigens and kill the cancer cells

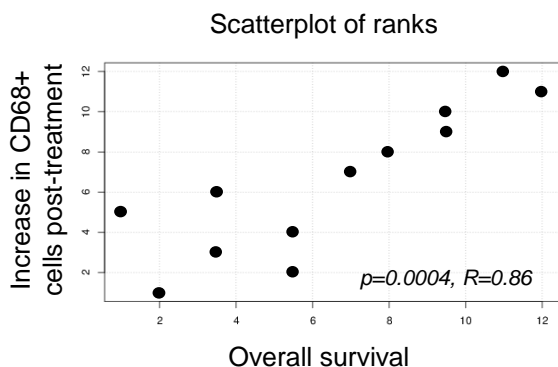


Initial ONCOS-102 trial showed strong T-cell response

Evidence that immune system recognizes tumor threat

Innate Immune System (biopsy)

- Induction of proinflammatory cytokines + fever (all patients)
- Infiltration of innate immune cells into tumors in 11 out of 12 patients

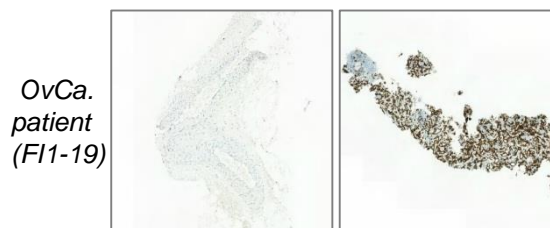


Correlation between post-treatment increase in innate immune cells and OS

Evidence that T-cells find the tumor and are cell killing

Adaptive immune system (biopsy)

- Increase in T-cell infiltration into tumors (including CD8+ killer T-cells) in 11 out of 12 patients
- Observation in one non-injected distant metastasis



Correlation between post-treatment increase in CD8+ T-cells and OS ($p=0.008, R=0.74$)

Evidence of production of tumor antigen specific T-cells

Anti-tumor immune response (blood)

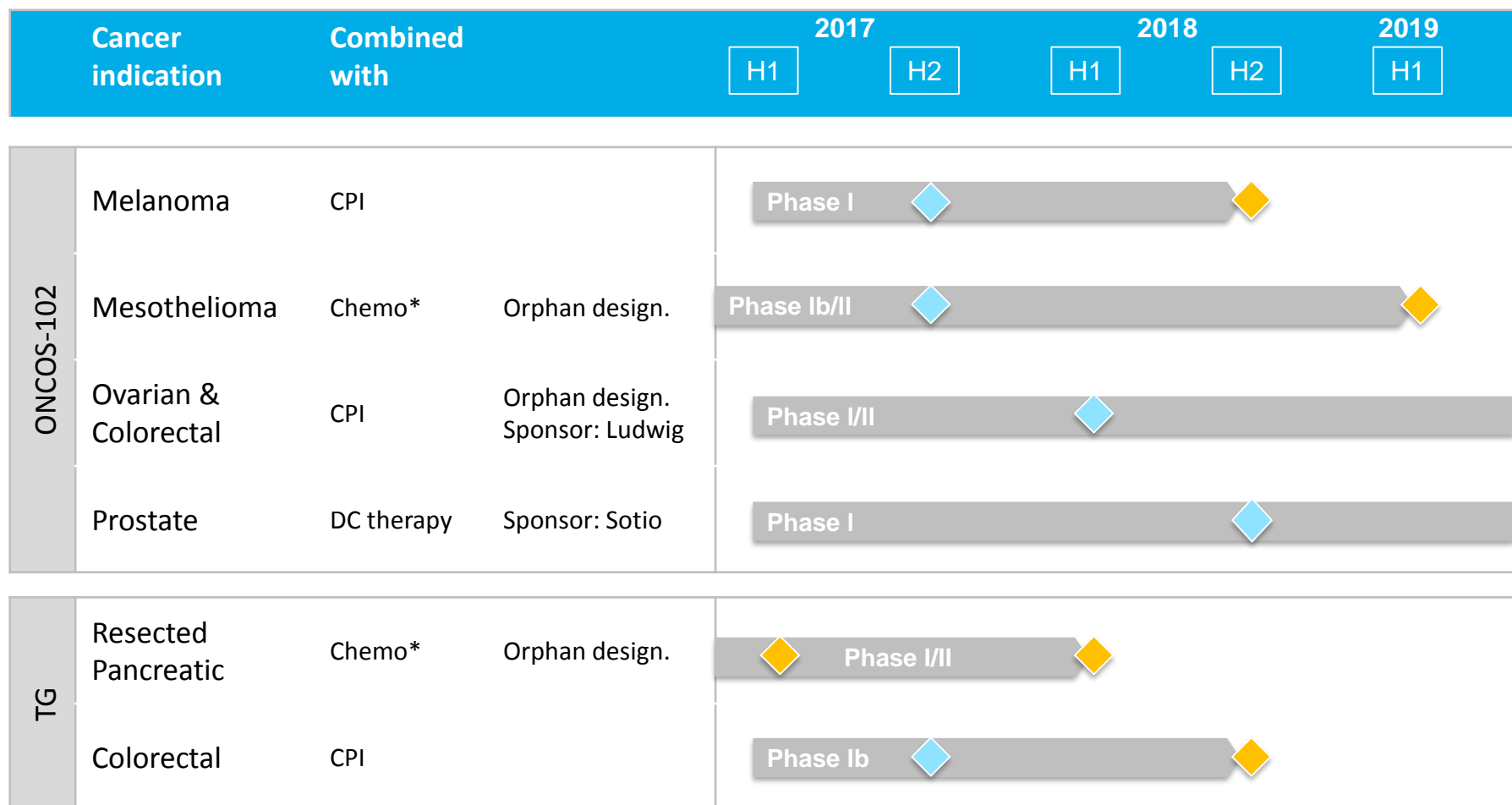
- Systemic induction of tumor-specific CD8+ T-cells

Ovarian patient:
NY-ESO-1, MAGE-A1, MAGE-A3, and Mesothelin specific CD8+ cells


Mesothelioma patient:
MAGE-A3 specific CD8+ cells

Associated with clinical benefit

Six shots on goal



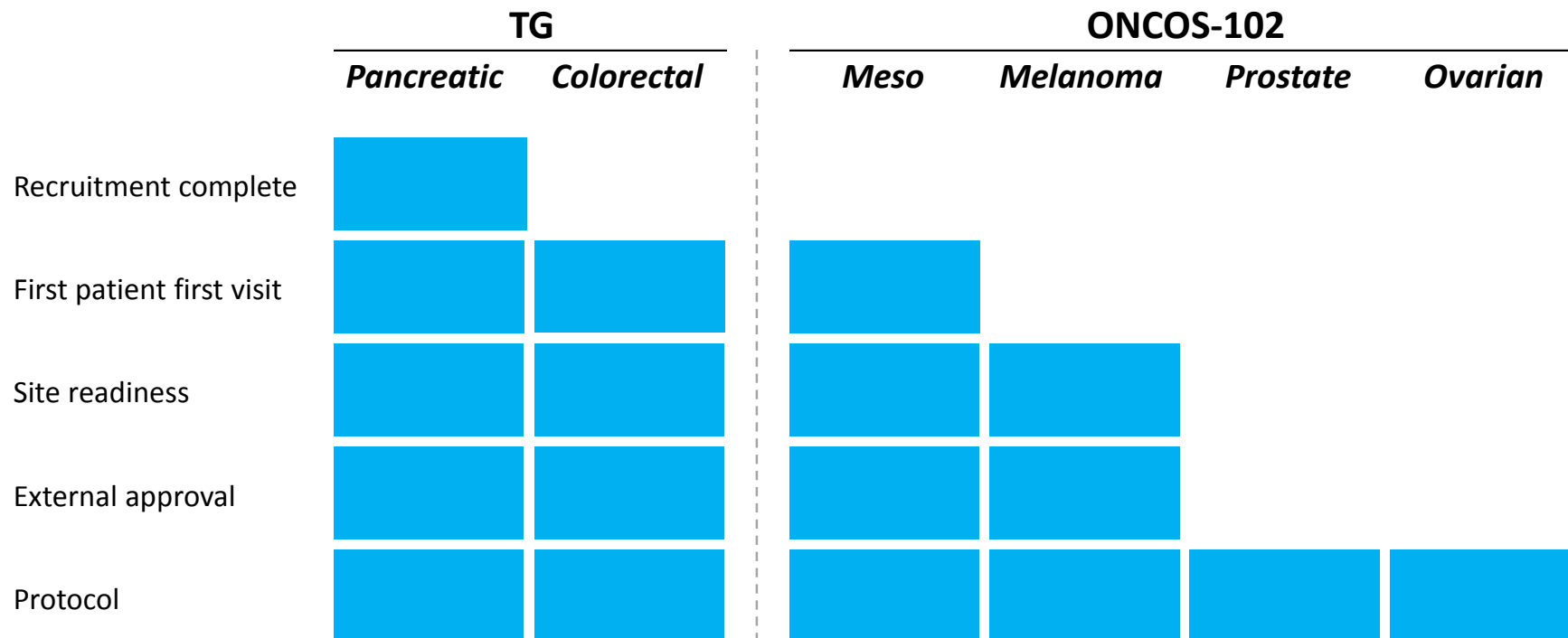
 Interim data

 Clinical, immune and safety data

4 readouts
2017

5 readouts
2018

Where are we with the clinical trials?



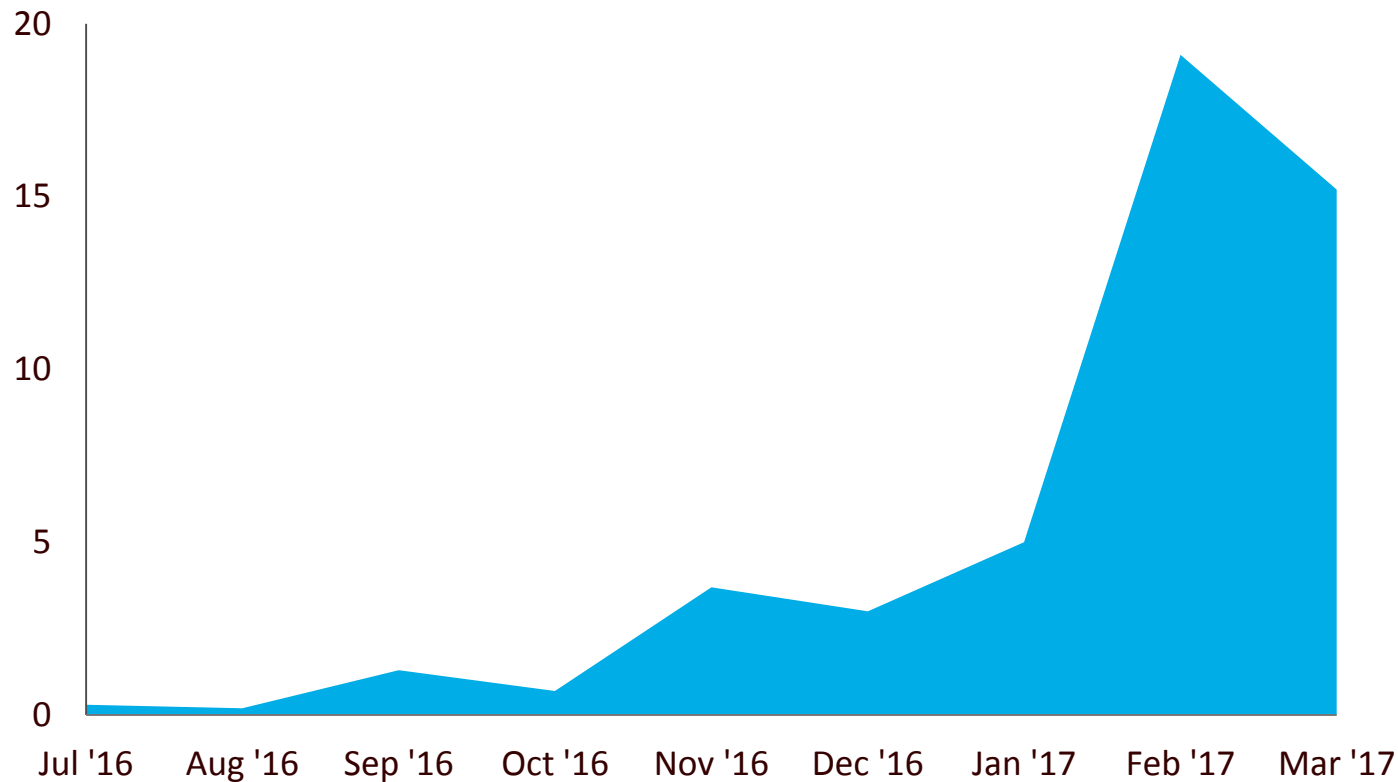
Financial summary – end of Q1 2017

Operations			
Cash	NOK 147m	USD 17m	<i>End of Q1 2017</i>
Net cash flow	NOK -24m	USD 3m	<i>Total Q1</i>
Annual run rate	NOK 104m	USD 12m	<i>Last four quarters</i>
Annual opex	NOK 116m	USD 13m	<i>Last four quarters</i>

The share	OSE: TRVX		
Market Cap	NOK ~900m	USD ~100m	<i>At share price NOK ~21</i>
Daily turnover	NOK 14m	USD 1.6m	<i>Last three months avg.</i>
Debt	NOK 43m	USD 5m	<i>EUR 6m conditional</i>
No. of shares	42.2m		<i>46.0m fully diluted per April 18</i>
Analysts	DNB, ABG Sundal Collier, Arctic, Redeye, Norske Aksjeanalyser		

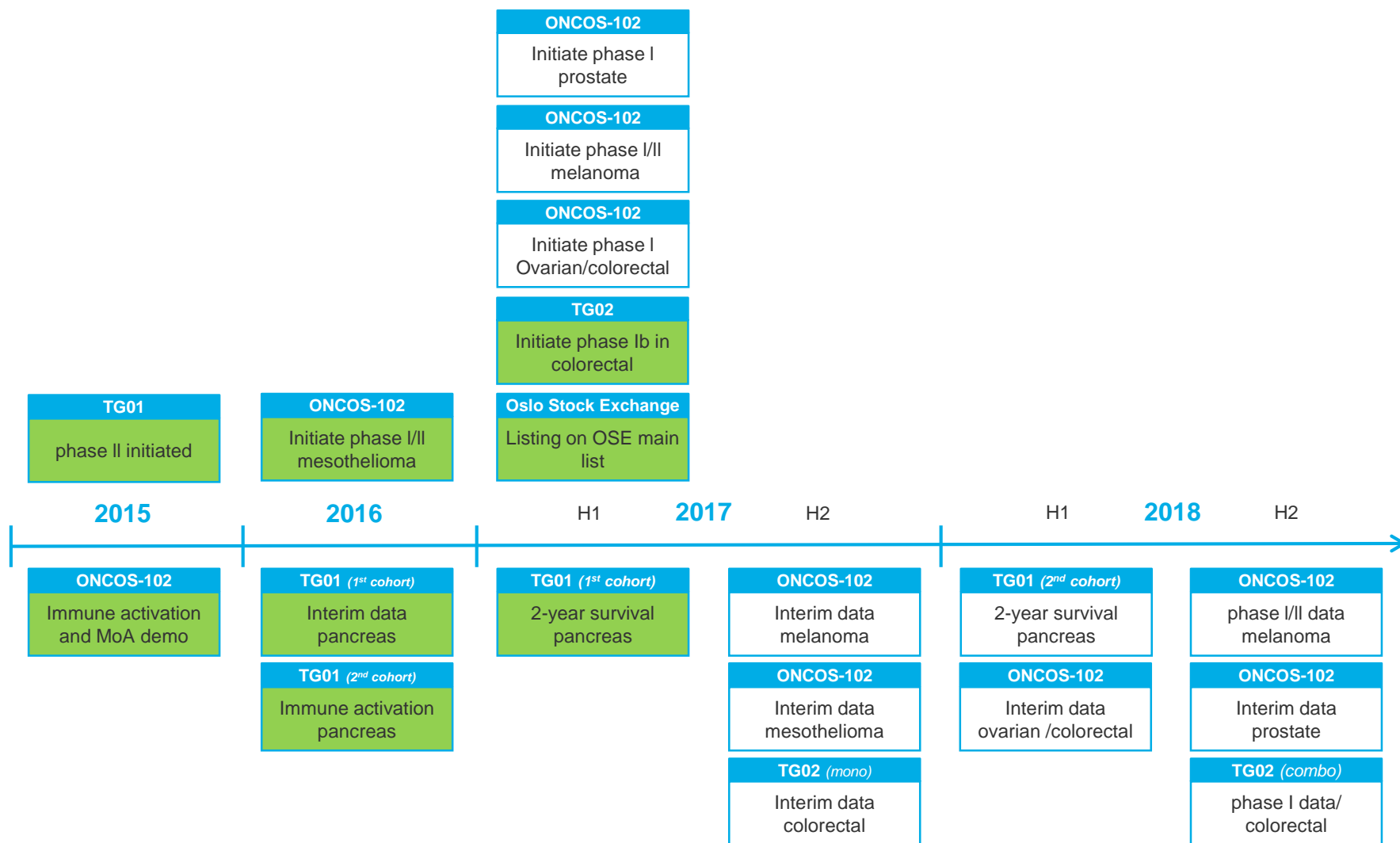
TRVX upgraded to the main list on OSE, and showed a positive trend in share turnover

Development in daily average share turnover (NOK million / day)



- **NOK ~900m** market cap
- **NOK 14m** avg. daily turnover in last 3 months
- **NOK 850m** total turnover in Q1
- **560k** shares avg. daily volume in Q1
- **>3,500** owners
- **42.2m** shares (46.0 fully diluted)

Multiple near term value inflection points



Arming the patient's immune system to fight cancer

1 Core focus on immuno-oncology	<ul style="list-style-type: none">✓ Two differentiated product platforms, oncolytic adenovirus (ONCOS-102) and RAS-peptide cancer vaccine (TG)✓ Targeting refractory solid tumors with combination trials
2 Proprietary platforms and pipeline	<ul style="list-style-type: none">✓ Promising Phase I/II data from both proprietary platform technologies, with clinically demonstrated immune activation and signal of efficacy
3 Multiple near term value inflection points	<ul style="list-style-type: none">✓ Six combination trials started or about to start (phase I & II)✓ All six trials read out in 2017-2018
4 Corporate	<ul style="list-style-type: none">✓ TRVX transferred to the OSE main list in Q1 2017✓ Strong increase in share turnover✓ Cash at approx. NOK 147m (USD 17m)

Appendix

Financial Snapshot

NOK m	1Q16	2Q16	3Q16	4Q16	1Q17
Total revenue	0	0	0	0	0
External R&D expenses	-11	-12	-11	-12	-9
Payroll and related expenses	-13	-12	-10	-13	-11
Other operating expenses	-7	-8	-4	-6	-7
Total operating expenses	-31	-32	-25	-31	-27
Operating loss	-31	-32	-25	-31	-27
Net financial items	-1	-1	-1	-1	-0
Loss before income tax	-32	-33	-26	-32	-27
Net change in cash	-33	-34	85	-21	-24
Net cash EOP	141	107	193	172	147

Strong shareholder base as per April 18th 2017

Shareholder	Estimated ownership		
	Shares m	Relative	
HealthCap	Sweden	11,2	26,4 %
RadForsk	Norway	4,1	9,7 %
Nordea	Norway	3,0	7,2 %
KLP	Norway	1,6	3,7 %
Nordnet Livsforsikring	Norway	1,4	3,3 %
Statoil	Norway	0,9	2,2 %
Danske Bank (nom.)	Denmark	0,8	1,8 %
Timmuno AS	Norway	0,7	1,7 %
Prieta AS	Norway	0,7	1,7 %
Rasmussengruppen	Norway	0,7	1,7 %
Nordnet Bank AB (nom.)	Sweden	0,7	1,5 %
Sundt AS	Norway	0,3	0,7 %
DNB	Norway	0,3	0,6 %
Avanza Bank AB (nom.)	Sweden	0,3	0,6 %
Thorendahl Invest AS	Norway	0,3	0,6 %
The Bank of NY Mellon (nom.)	Belgium	0,2	0,5 %
Netfonds Livsforsikring AS	Norway	0,2	0,5 %
Tobech Invest AS	Norway	0,2	0,5 %
Istvan Molnar	Norway	0,2	0,4 %
Danske Bank (nom.)	Denmark	0,2	0,4 %
Top 20		27,8	65,9 %
Other shareholders (3566)		14,4	34,1 %
Total		42,2	100,0 %

42.2m ordinary shares

- Management ownership: 2.1%
- 3,586 shareholders

46.0m¹ shares fully diluted

- Average strike price on options ~NOK 21
- Total dilutive effect of options is 7.9%

¹ Includes outstanding options (3,634,263) and Restricted Stock Units (169,128) to Board members