vaccibody

Vaccibody

Lunsjpresentation hos Arctic Securities

Oslo, Onsdag 4. september 2019

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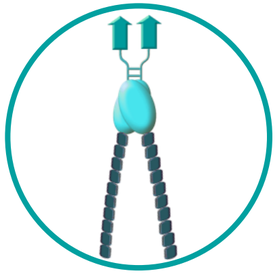
Agenda

1. Introduction

2. Update on VB10.16 program



3. Update on VB10.NEO program

4. Outlook

Personal introduction

- Technical University of Denmark - Biotechnology
- Copenhagen University - B.Com, Leadership & Organisation

- Nordic Bioscience - Early stage drug discovery
- Alfred Berg Investment Bank - Equity analyst Biotech & Pharma
- Nycomed - Late stage drug development, global clinical trial operations
- Takeda - commercial operations
- PPD international - Regional head Clinical Trial Management
- KLIFO - Heading Drug development Counselling

Experience across the entire value chain from early drug discovery over late stage development and commercialisation

Vaccibody AS in summary

- Founded in 2007 in Oslo, Norway
- Privately held clinical stage immuno-oncology company, spun-out from Oslo University, 25 employees
- Proprietary, patented vaccine technology
- Experienced, international management team with oncology expertise and thorough drug development experience

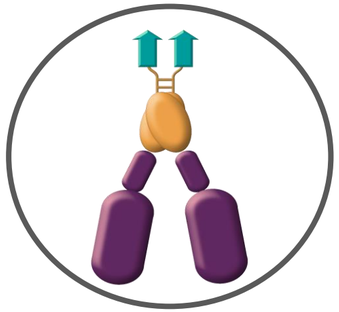
Michael Engsig,
CEO

Agnete B. Frederiksen,
Founder, President and CSO

Mads B. Axelsen,
CMO

Mette Husbyn,
CTO

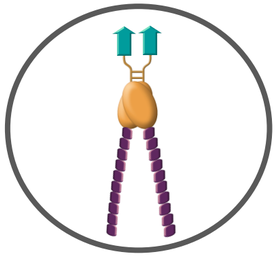
Vaccibody achievements

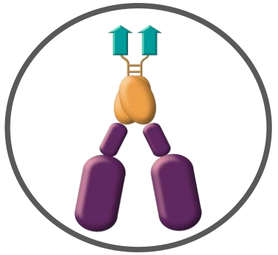


- **Clinical proof of principle established from VB C-01**
  - Ability to raise an antigen specific immune response in humans
  - Immune response translate into meaningful clinical improvement in pre-cancer setting
- **Promising initial data from VB N-01**
  - Developed a promising concept for addressing patients own immunogenic somatic mutations in cancers
  - Proven feasibility in value chain from biopsy to patient specific cancer vaccine product
  - Well tolerated product for IM administration
  - Demonstrated neoantigen vaccine can raise best in class specific immune response against somatic mutations
- **Technology platform that can be applied to a range of diseases with unmet medical need**

Vaccibody Product Pipeline

PROGRAM	DISCOVERY	PRE-CLINICAL	PHASE I	PHASE II	PHASE III
MELANOMA LUNG (NSCLC) BLADDER RENAL HEAD AND NECK	VB10.NEO				
HEAD AND NECK	VB10.NEO + NKTR-214			NEKTAR®	
PRECANCEROUS CERVICAL LESIONS	VB10.16				
CERVICAL	VB10.16 + Atezolizumab (CPI)*		Roche		





Vaccibody's solid base

- 322 mNOK in cash and cash equivalents as of June 30, 2019
- Diverse and active shareholder base, approx. 280 shareholders
- Raised 509 mNOK in equity since inception
- Traded "over the counter" by Arctic, ABG, DNB, Carnegie

- Solid IP base with multiple layers of protection
- Experienced and engaged team

Update since February

- Raised 230 mNOK to continue development program of VB10.NEO and VB10.16 programs

- First immunogenicity data released - major de-risking factor
- 100% manufacturing success rate
- Reported outcome of VB C-01 clinical trial
- Ready to start enroling in NEKTAR arm of VB N-01
- Elaborating on Vaccibody's unique ability to induce a strong and broad CD8 response

- Accelerating efforts to progress VB N-01 trial - opening 6 new clinical sites

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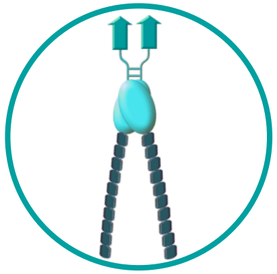

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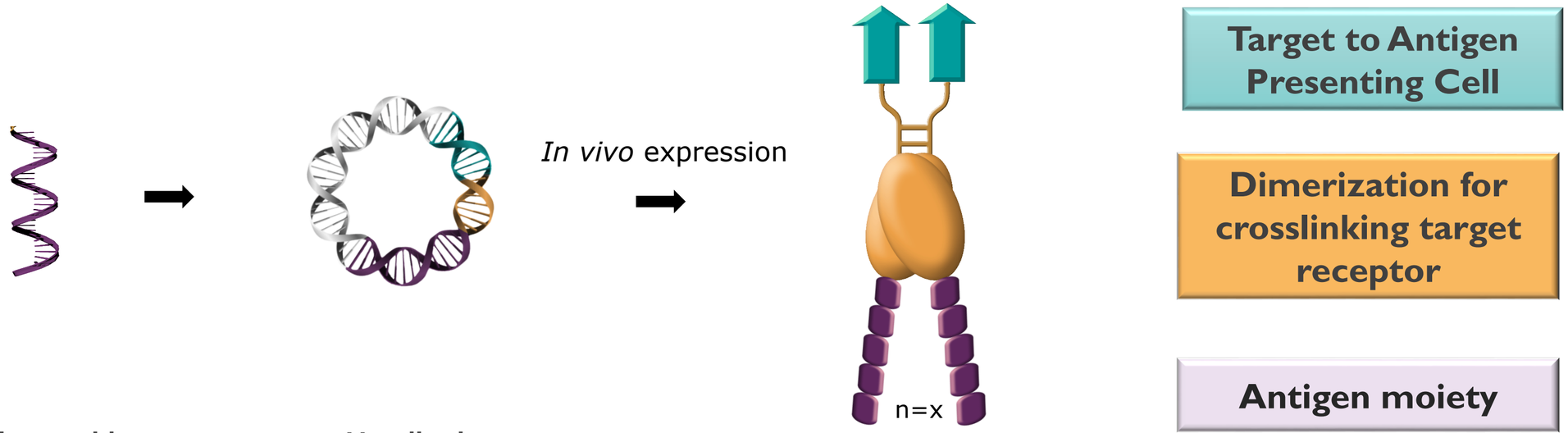
Vaccibody – Proprietary Vaccine Technology Platform

The Vaccibody Technology Platform was developed based on the concept of **targeting antigen to APC** in order to create more efficacious vaccines.



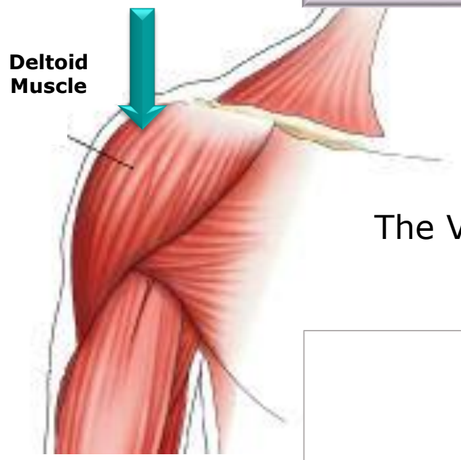
Mechanism of action: the multiple effect of MIP-1α as targeting unit

Administration (i.m.) of DNA plasmid

***In vivo* protein expression and secretion**

Target – Attract – Mature – Deliver – Cross-present

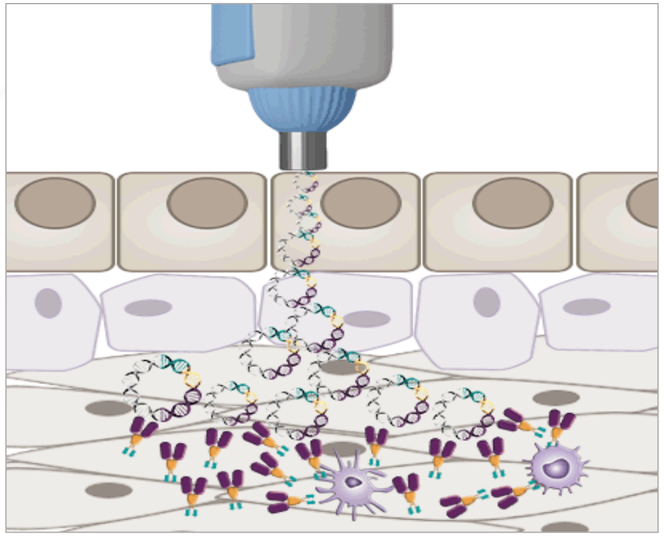
MIP-1α: Skewing the immune system to a CD8+ killer T-Cell response

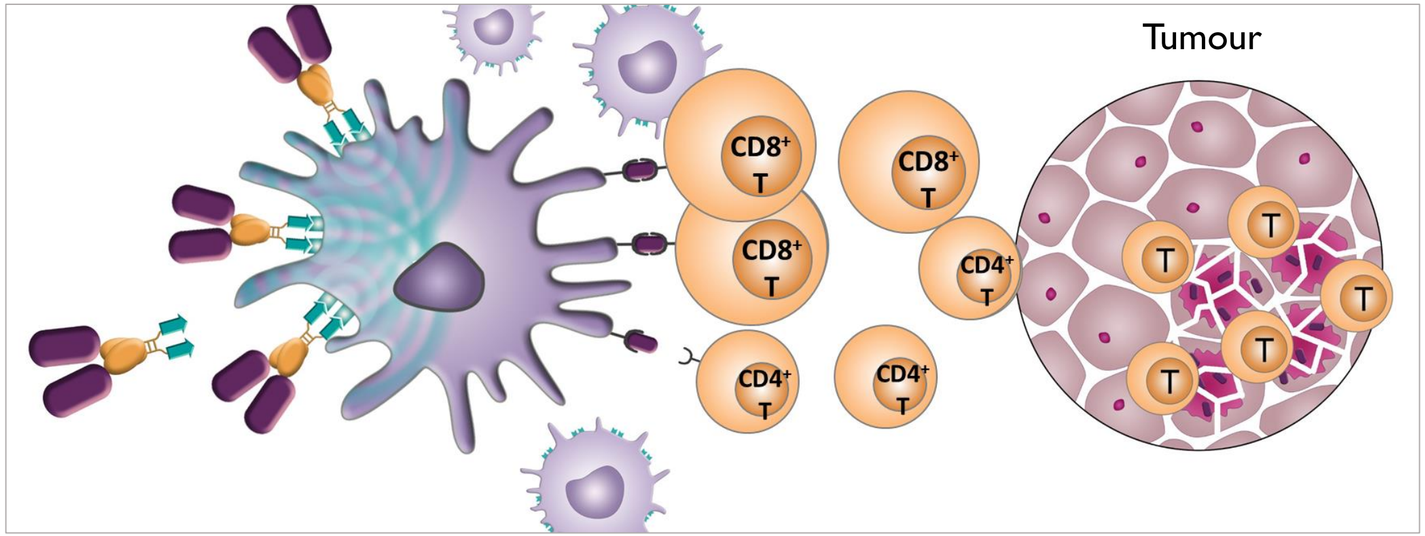


The Vaccibody uses the muscle cell as a factory

- Direct targeting & attraction of antigen presenting cells, high local vaccine concentration
- Enhanced T cell immunity obtained with fewer and lower doses
- Faster and longer lasting immune responses
- **Stronger potential to kill cancer cells**

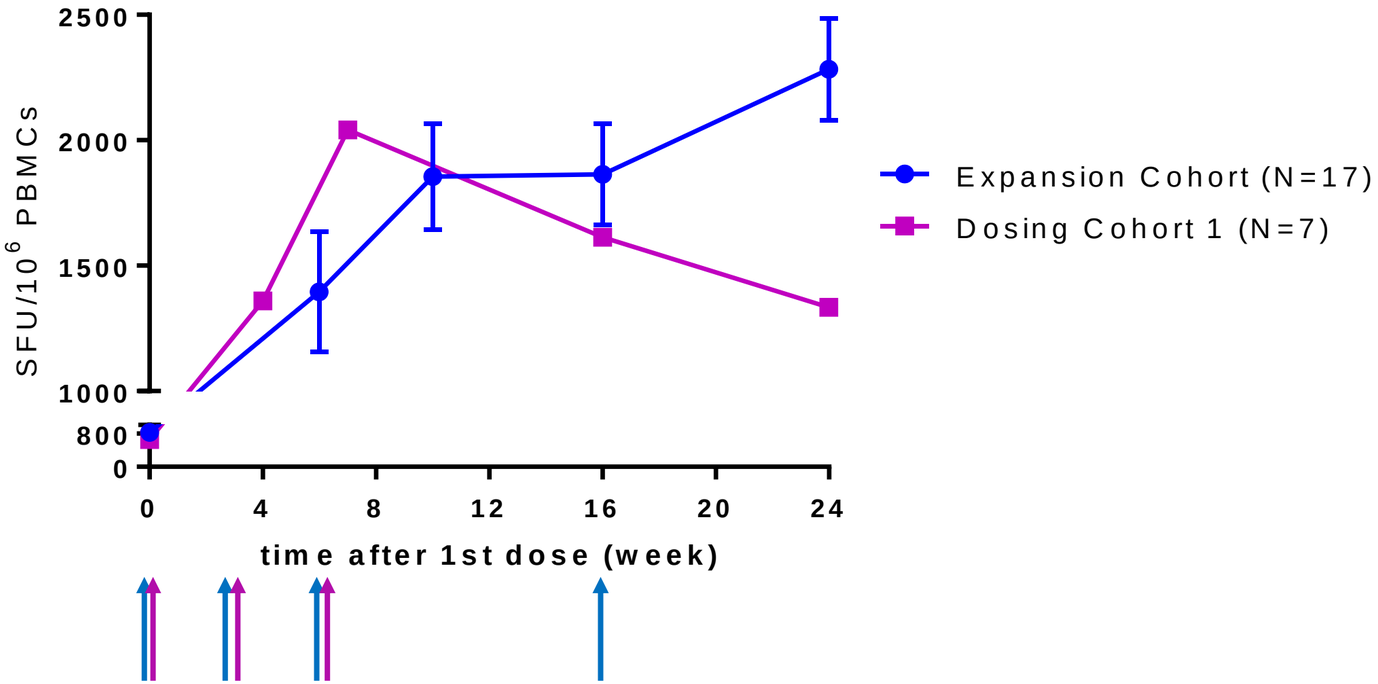
PharmaJet®





Targeting is elicited by the MIP-1α chemokine

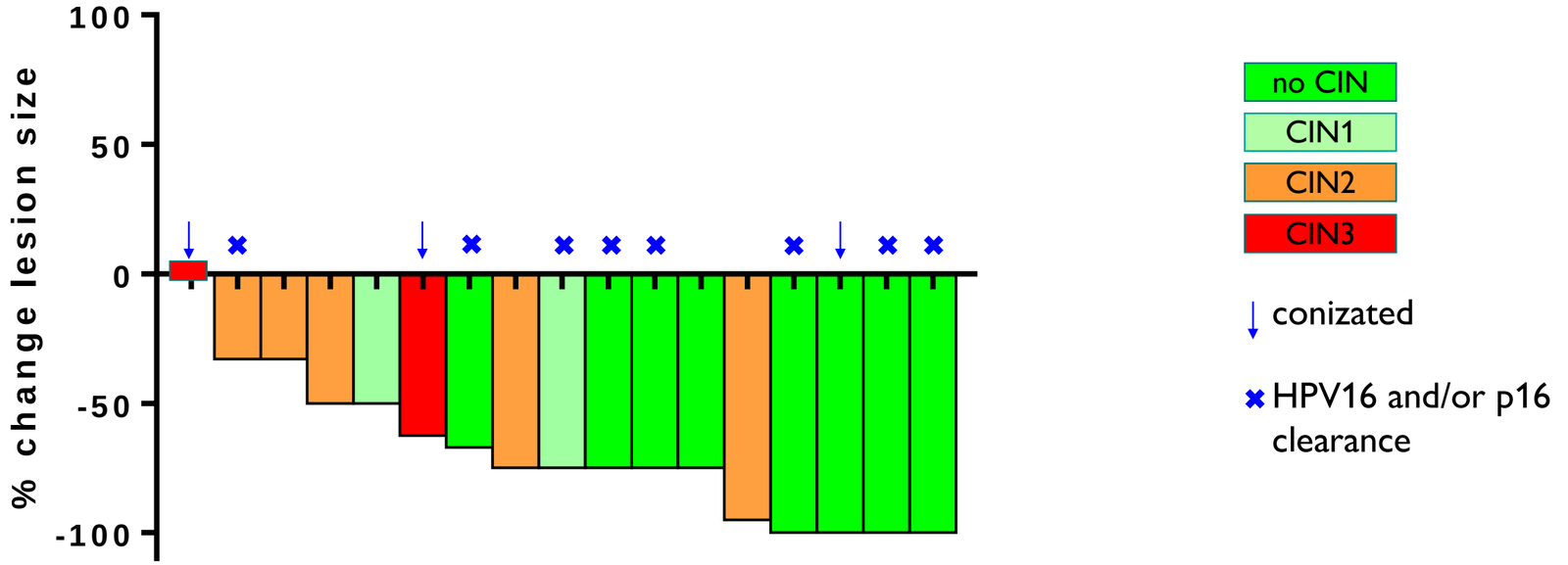
Strong, long-lasting immune responses. Effective homologous boost.



- The vaccination regiment from cohort 1 (week 0, 3 and 6) plus a booster vaccination at W16 was introduced in phase IIa
- 16 of 17 patients (94%) from phase IIa elicited increased HPV16-specific T cell responses after vaccination with VB10.16.
  - Rapid, strong and long-lasting

Promising clinical efficacy with excellent safety, VB C-01

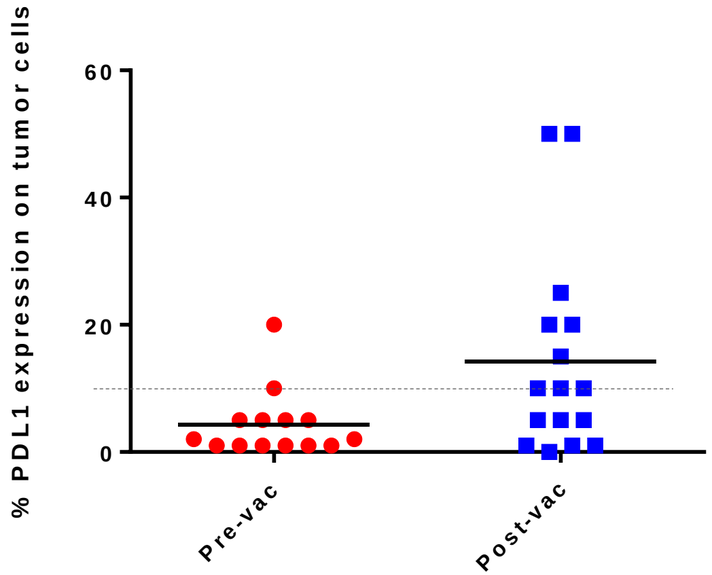
Best response data
(At enrollment: 10 CIN3 and 7 CIN2 patients)

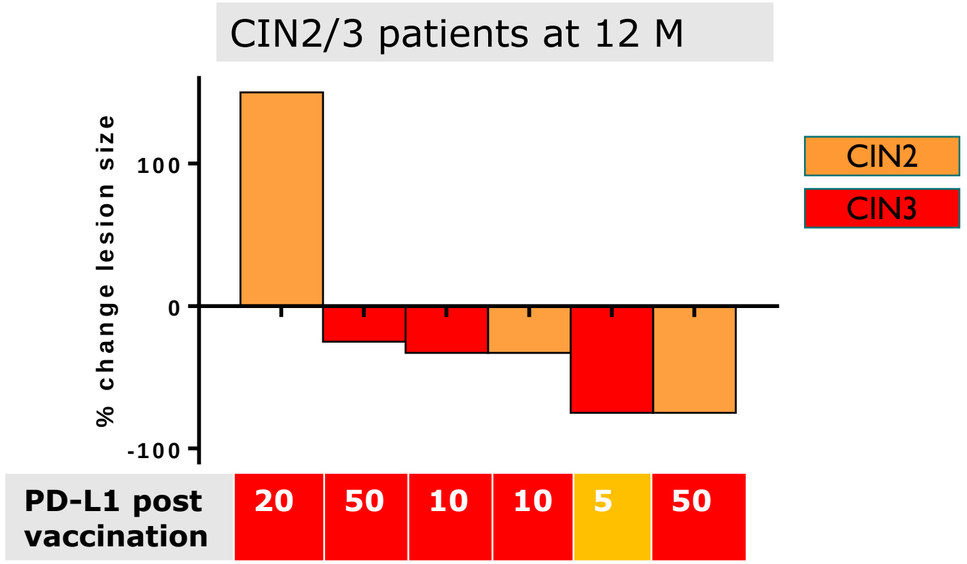


VB10.16 as a monotherapy in HPV16-positive, precancerous cervical lesions induces:

- Lesion size reduction in all patients followed >4 months
- CIN regression to CIN1 or no CIN in 10 patients
- HPV16 and/or p16 clearance in 8 patients

VB10.16 upregulates PD-L1, suggesting effect of combination therapy





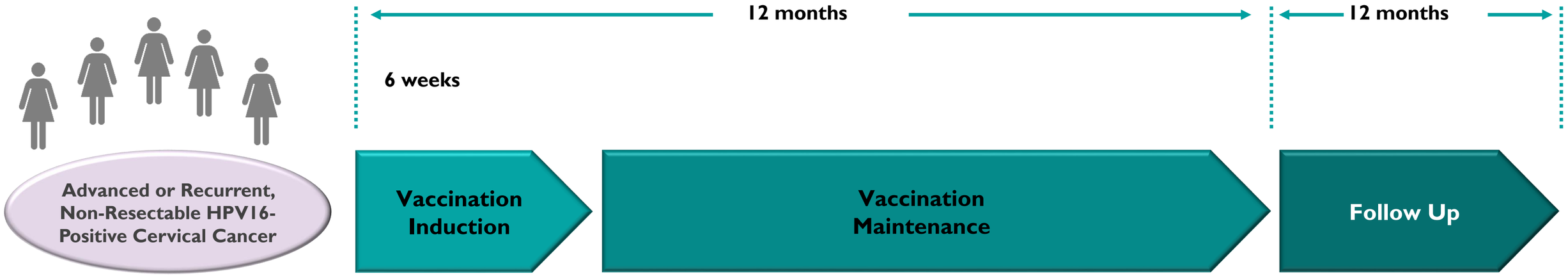
- 5 of 6 patients that were CIN2/3 after completing the study (12M) showed **upregulation of PD-L1** ≥10% (1 patient 5%)
- PD-L1 is upregulated by a strong local T cell response and may inhibit an efficacious long-term immune response
- Anti-PD-1/PD-L1 inhibitors blocks the brake and activates the immune system to attack PD-L1+ tumour cells
- VB10.16 induces a strong T cell response and creates a target for PD-1/PD-L1 inhibitors. Thus, there is a strong rationale for combination of VB10.16 with an anti-PD-1/PD-L1 checkpoint inhibitor to improve its effect, especially in PD-L1 negative patients

CPI: checkpoint inhibitor

Study design for VB10.16 + Tecentriq®

In patients with advanced or recurrent, non-resectable HPV16+ cervical cancer

- Dosing of VB10.16 in combination with Atezolizumab (Tecentriq®)
- Purpose is to assess the safety/tolerability, immunogenicity and the efficacy of multiple doses of 3 mg VB10.16 immunotherapy in combination with Atezolizumab
- **On track for first patient, first visit est. in Q1 2020**
- Up to 50 patients are planned to be enrolled
- The study will be conducted in Europe in 6 countries, including Norway



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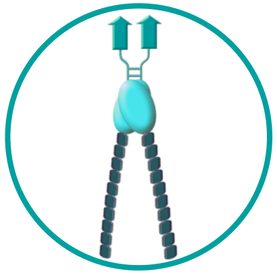


3. Update on VB10.NEO program

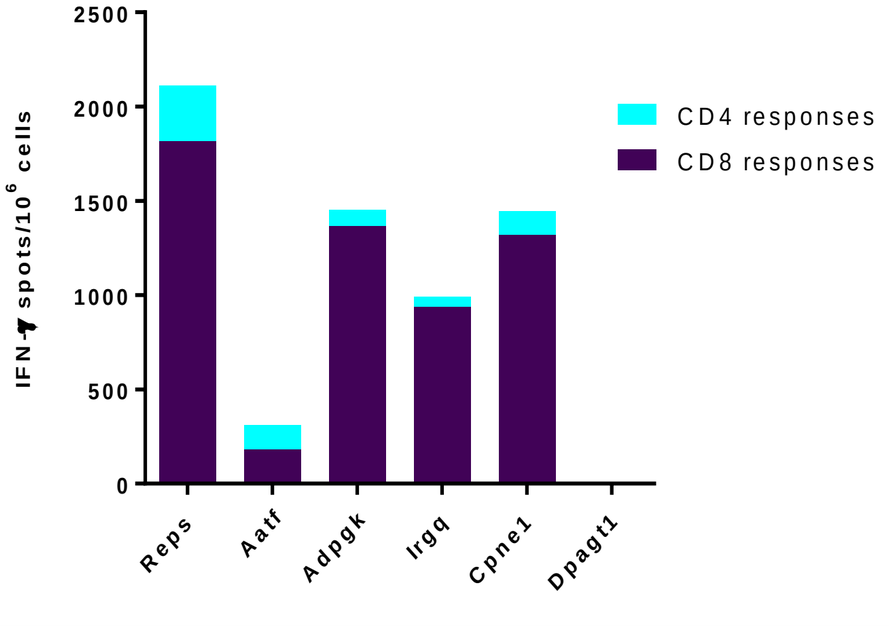
4. Outlook

Substantiation of VB10.NEO's unique ability to induce strong neoepitope-specific CD8 responses-in mice

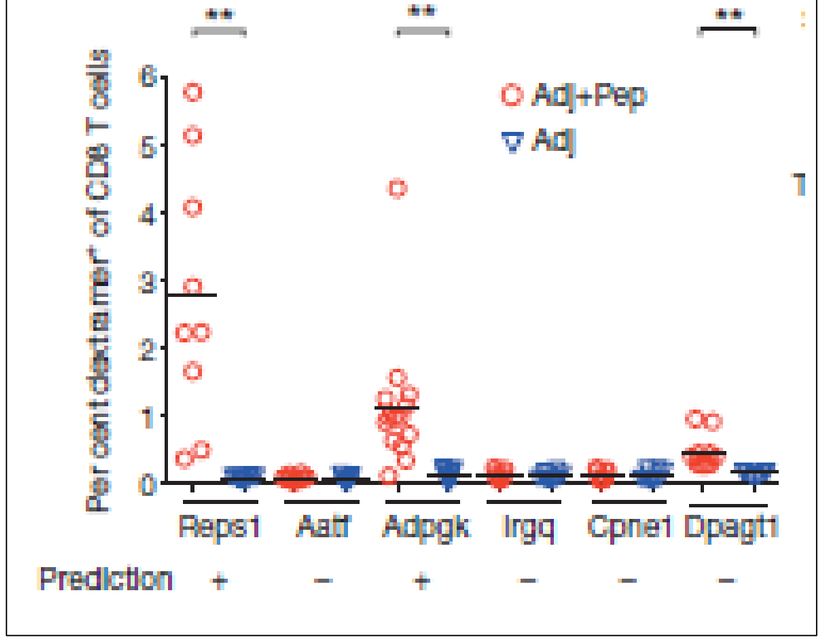
MC38 colon carcinoma

Yadav et al., 2014

VB10.NEO



Peptide + poly I:C + anti-CD40 mAb



-VB10.NEO induces a strong CD8 T cell response, combined with a CD4 response **to 5 of 6** MC38 neoantigens.

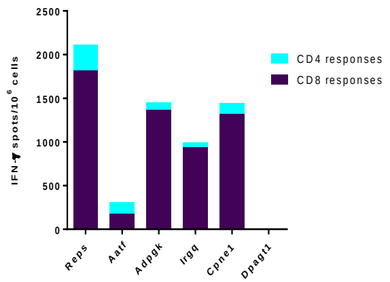
-3 of these neoepitopes have been shown to be **non-immunogenic delivered as peptide + adjuvant**

-Confirmation of VB10.NEO's ability to induce best in class CD8 responses to neoantigens, both broader and stronger

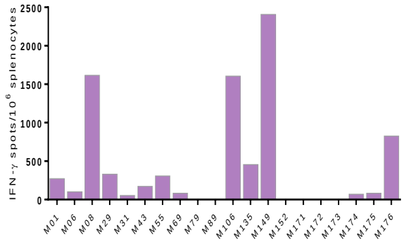
VB10.NEO proven to induce an effective anti-tumour response

VB10.NEO induce unique neoepitope-specific CD8+ T cell responses → T cells traffic to the tumor → Creates «hot» immune signatures in tumor-bearing mice → T cells in tumor are able to kill tumor cells *in vitro* → Complete tumour regression is observed *in vivo*

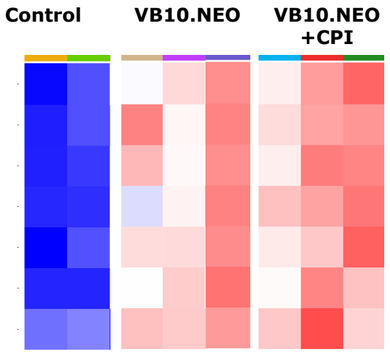
Neoepitope-specific CD8+ T cell response in spleen



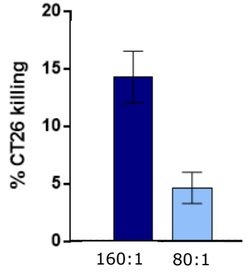
Neoepitope-specific T cell response in tumor



Influx of cytotoxic T cells in tumor (TILs)

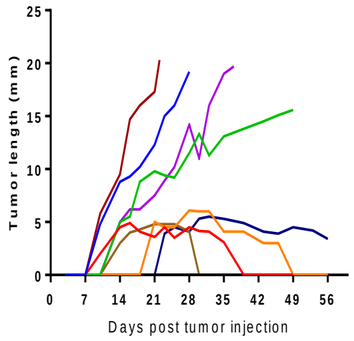


TILs recognize and kill tumor cells



Effector:target cell ratio

Tumor protective immune responses elicited in vaccinated mice

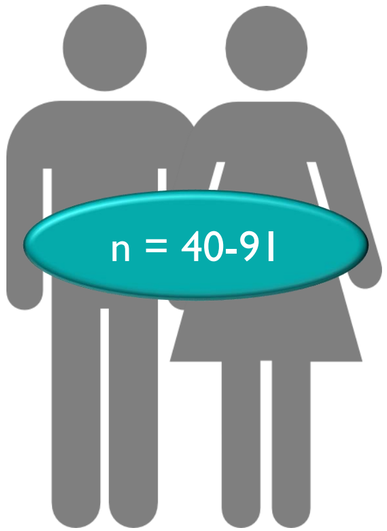


Clinical Trial VB N-01

VB N-01: An open labelled first human dose phase 1/2a study to evaluate safety, feasibility and efficacy of multiple dosing with individualised VB10.NEO immunotherapy in patients with locally advanced or metastatic melanoma, NSCLC, clear renal cell carcinoma, urothelial cancer or squamous cell carcinoma of head and neck, who did not reach complete responses with current standard of care immune checkpoint blockade

VB10.NEO

VB N-01



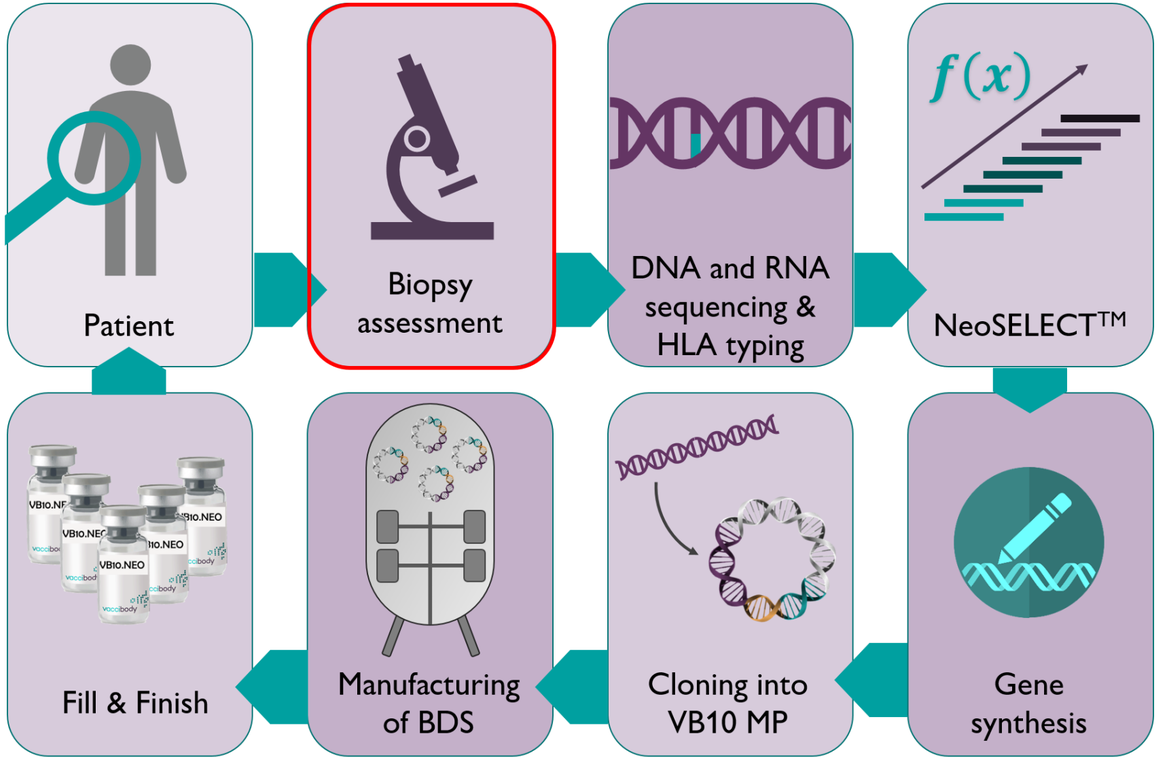
- Melanoma
- NSCLC
- Clear Renal Cell Carcinoma
- Urothelial Cancer
- Squamous Cell Carcinoma of the Head and Neck

- Approved CPI as SOC
- Moderate to high mutational load

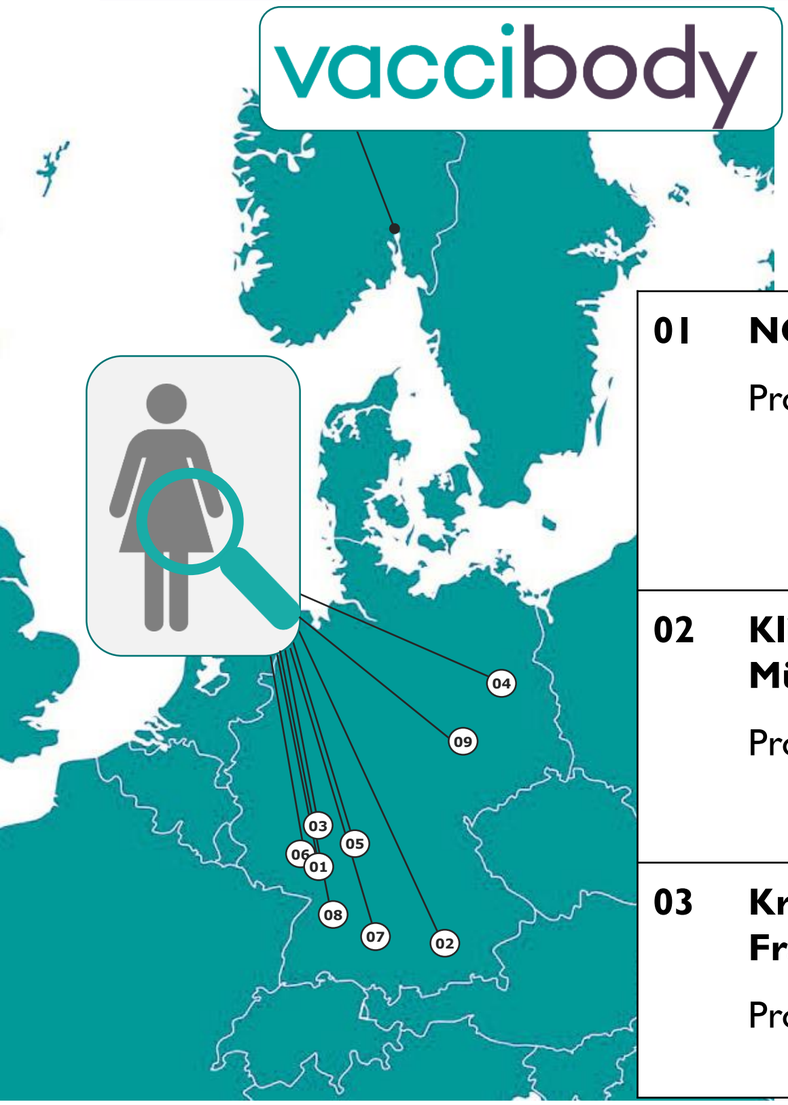
High focus on successful and fast manufacturing

- So far, 100% manufacturing success rate for patients providing a successful biopsy **-Best in class**
  - Top choice of 20 neoepitopes used for every patient
  - Proven feasibility and stability data from all initial batches

- Consistent efforts to improve manufacturing lead time
  - Latest batches approximately 12 weeks
  - Further improvements on lead time to be expected
    – scientific advice November 2019



Expansion of Clinical Sites - speeding up enrollment



23 patients enrolled in 3 clinical sites

Plan to activate all 6 new sites H2 2019

01	**NCT Heidelberg** Prof. Krauss*	04	**Charité Campus Benjamin Franklin, Berlin** Dr. Ochsenreither	07	**Universitätsklinikum Ulm** Dr. Laban
02	**Klinikum rechts der Isar, München** Prof. Krackhardt	05	**Universitätsklinik Würzburg** Dr. Gesierich	08	**Universitätsklinikum Tübingen** Dr. Mauz
03	**Krankenhaus Nordwest, Frankfurt** Prof. Jäger	06	**Universitätsmedizin Mannheim** Prof. Utikal	09	**Universitätsklinkum Halle (Saale)** Dr. Eisenmann

Status: 23rd August 2019

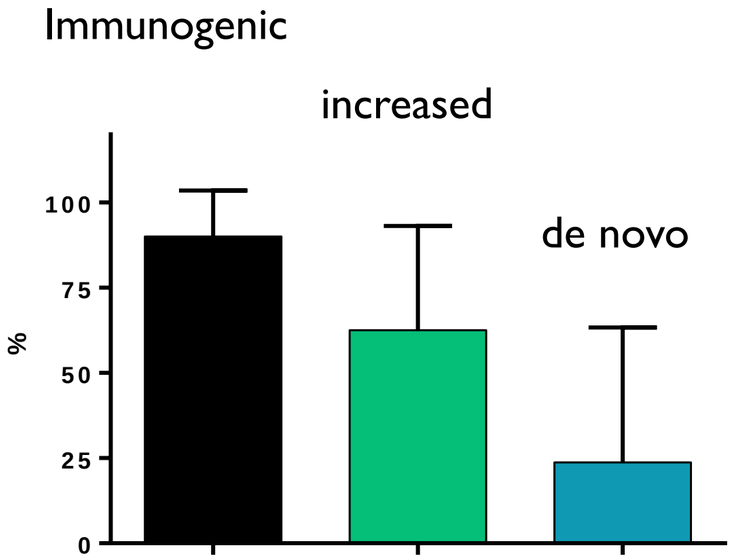
Site not yet activated

* Coordinating Investigator

VB10.NEO induce best in class, broad and strong immune responses even in patients with low TMB

First 4 patients tested after 3-6 vaccinations

Patient	Indication	TMB	#months on CPI before VB10.NEO	Disease at VB10.NEO start
1	RCC	Low (1.7)	18	Stable
2	SCCHN	Low (2.6)	32	Relapsed
3	SCCHN	Low (3.2)	15	Stable
4	RCC	Low (2.1)	12	Stable



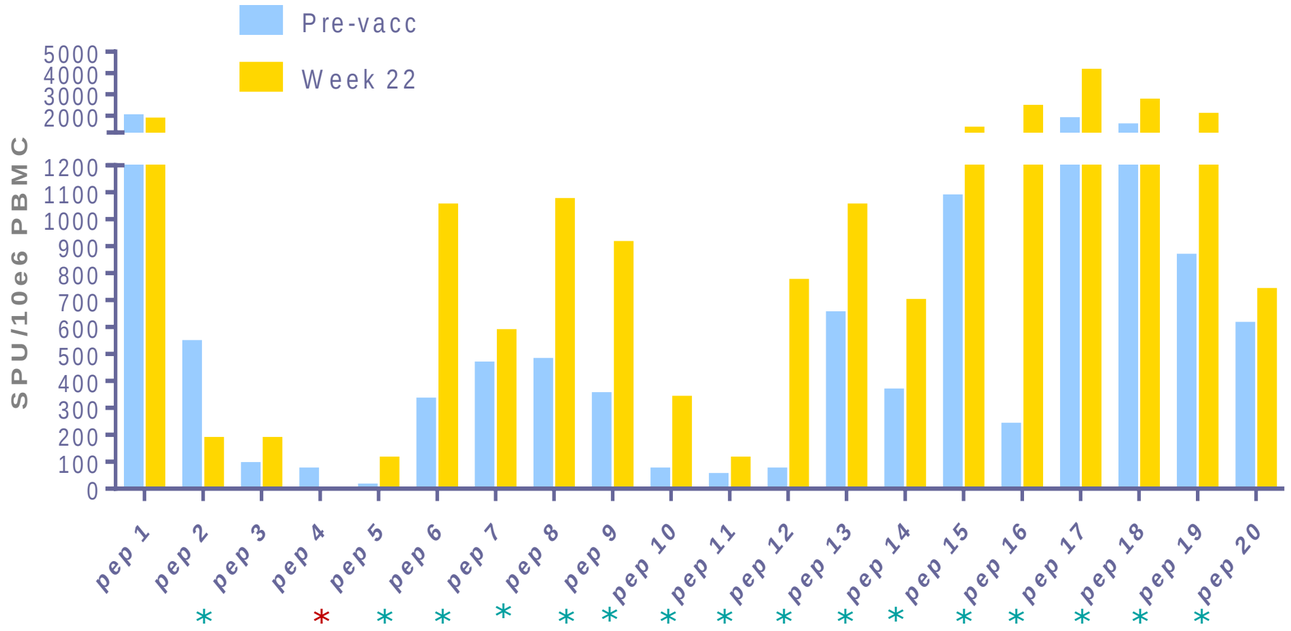
- First patients are all low TMB and with SD as best response to long-term CPI treatment.
- One patient relapsed before VB10.NEO treatment.

- High% of immunogenic neoepitopes selected with NeoSELECT prediction.
- Majority of neoepitopes increased by VB10.NEO
- Boosting pre-existing as well as de novo responses

VB10.NEO induce best in class immune responses

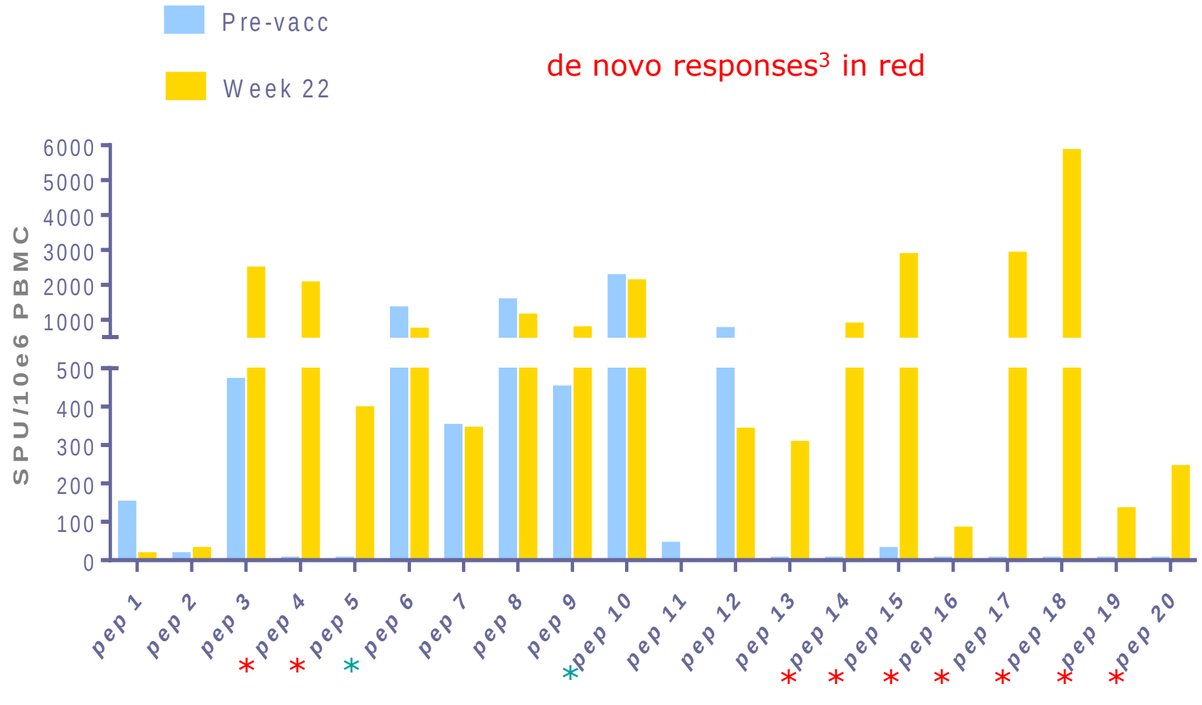
Example of T cell response to the 20 neoepitopes in the vaccine for 2 Head & Neck patients (week 22)

Patient 2



Patient 3

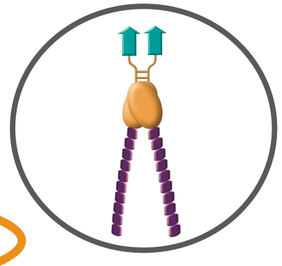
de novo responses[3] in red

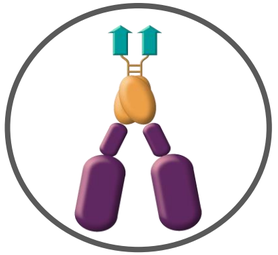


- Strongly increased T cell responses to the majority of the selected neoepitopes after VB10.NEO vaccination.
- Highest number of neoepitopes increased for patient 2 (85%), but biggest fold increase (~>1000 times) and highest number of *de novo* responses observed for patient 3 (83%).

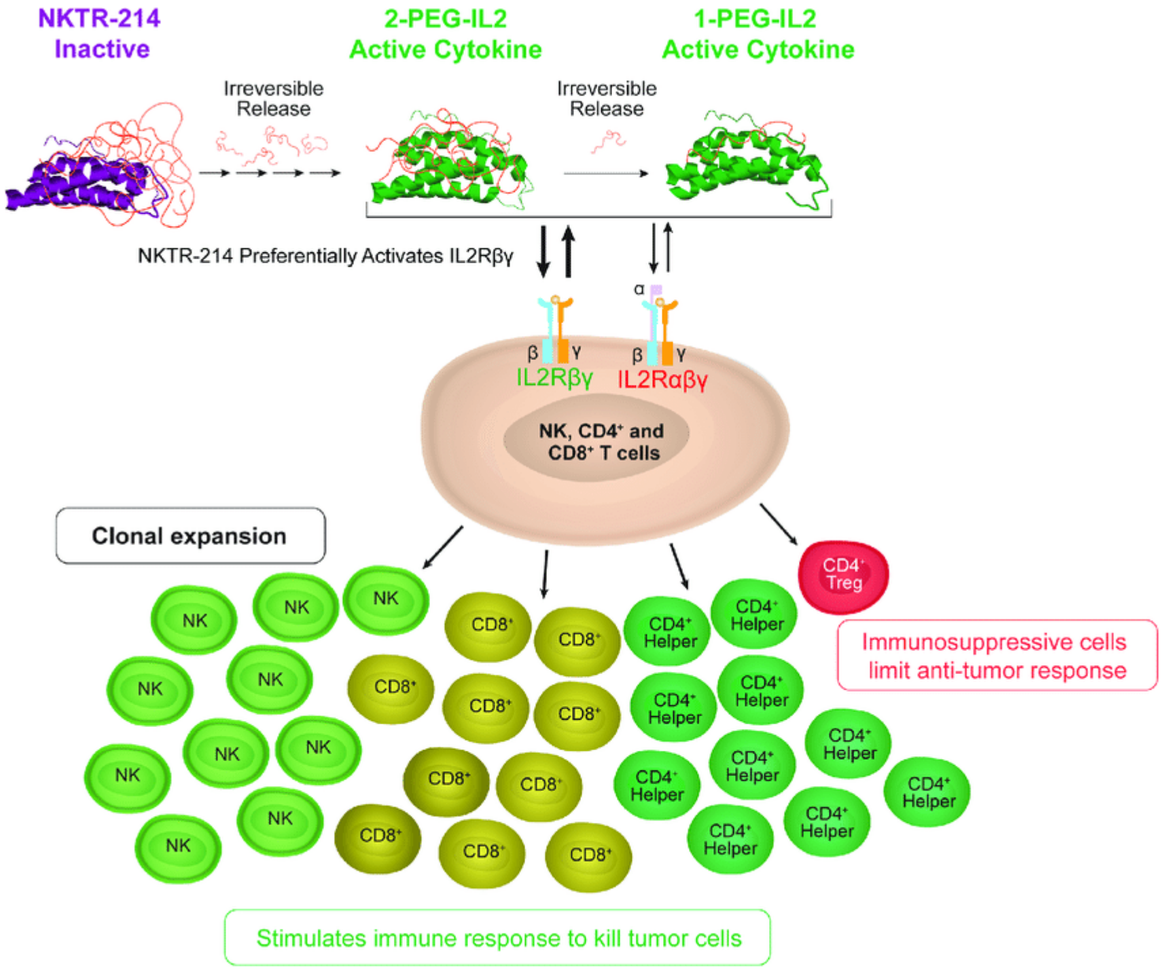
Vaccibody Product Pipeline

PROGRAM	DISCOVERY	PRE-CLINICAL	PHASE I	PHASE II	PHASE III
MELANOMA LUNG (NSCLC) BLADDER RENAL HEAD AND NECK	VB10.NEO				
HEAD AND NECK	VB10.NEO + NKTR-214			NEKTAR®	
PRECANCEROUS CERVICAL LESIONS	VB10.16				
CERVICAL	VB10.16 + Atezolizumab (CPI)*		Roche		

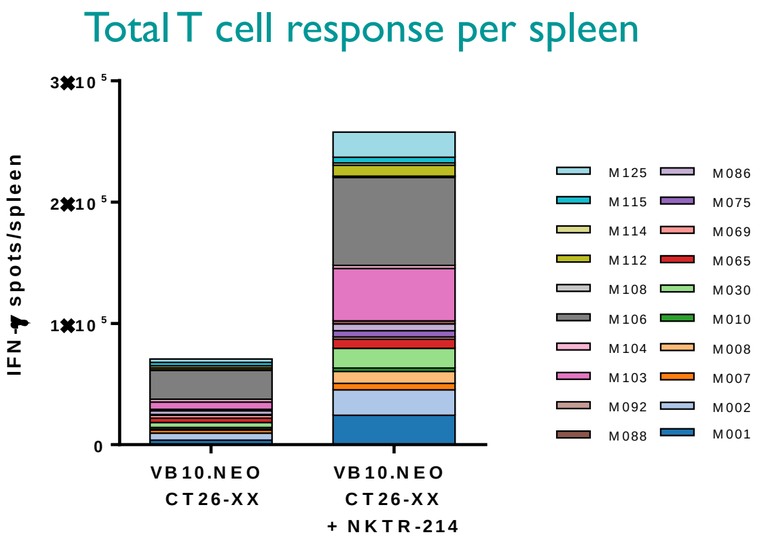


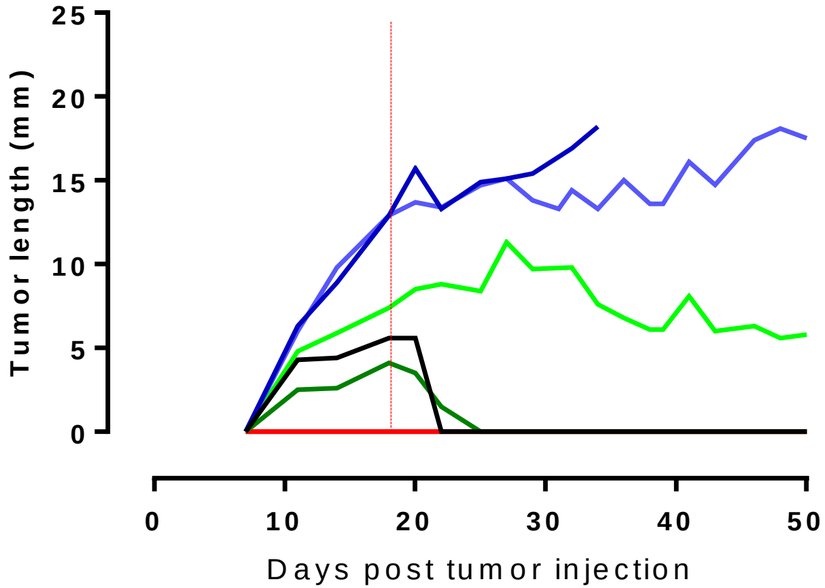


Bempegaldesleukin (NKTR-214) has the potential to significantly expand T cells



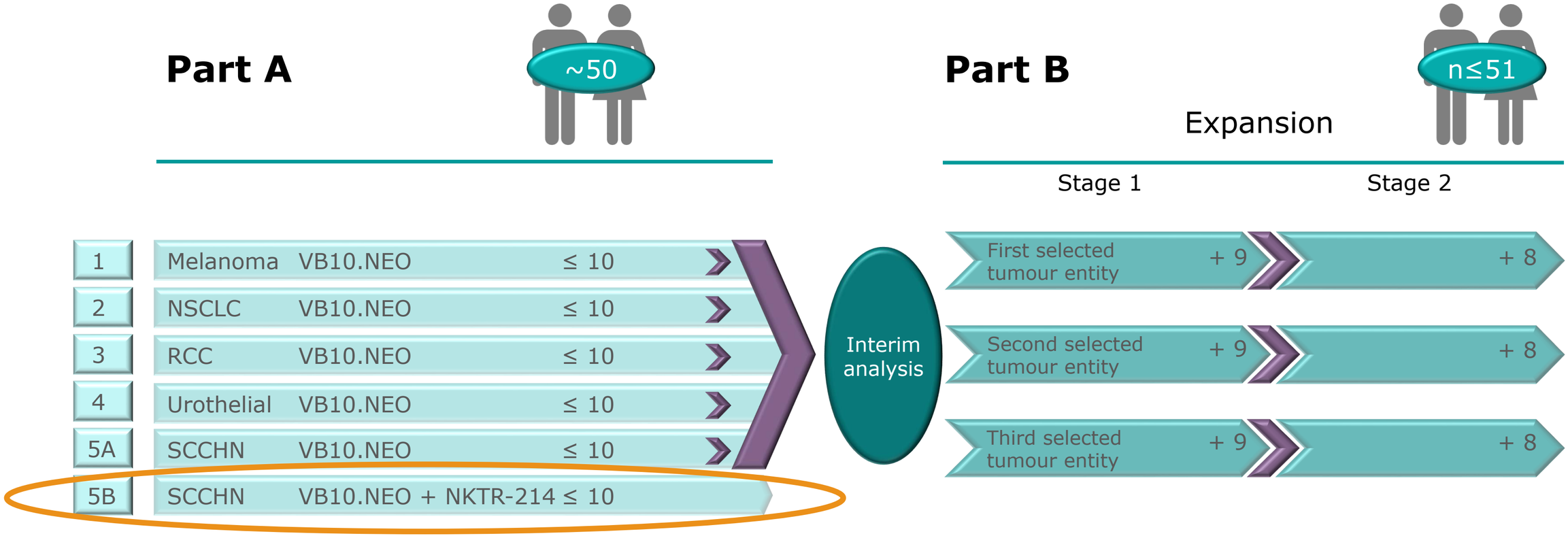
Combination of VB10.NEO and NKTR-214 greatly synergizes





- Combination of VB10.NEO and bempegaldesleukin (NKTR-214) synergizes to elicit greater breadth and depth of neoantigen-specific T cell responses than each individual treatment
- Adding NKTR-214 (from day 18) to a VB10.NEO and anti-PD-1 treatment induce rapid, complete and durable tumour regression of small tumours and long-lasting stabilization of large tumours.

Expansion of the study planned in 2019– add NKTR-214 and expansion cohorts



- First patient enrolled planned H2 2019

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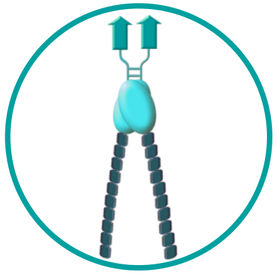

3. Update on VB10.NEO program

4. Outlook

Outlook for the next 12 months

Clinical trial for cancer neoantigen vaccine (VB10.NEO)

- Complete enrolment of phase I trial
- Interim data

Nektar collaboration

- First patient dosed in clinical trial evaluating the combination of VB10.NEO and NKTR-214

Clinical trial in cervical cancer combining VB10.16 and checkpoint inhibitor atezolizumab

- Submission of the clinical trial application (Ph IIa) to regulatory bodies
- First patient dosed in the clinical trial evaluating the combination of VB10.16 and atezolizumab

In Summary

Achievements

- Vaccibody technology platform provides best in class broad and strong immune response across indications
- Clinical proof of concept for both VB10.16 and VB10.NEO
- Cutting edge experience in manufacturing and supply chain
- Strong collaboration partners to improve positioning

Key priorities to drive asset value

- Progress clinical activities
- Expand footprint
- Strengthen manufacturing setup
- Leverage our technology platform

Vaccibody team ready to execute and deliver!

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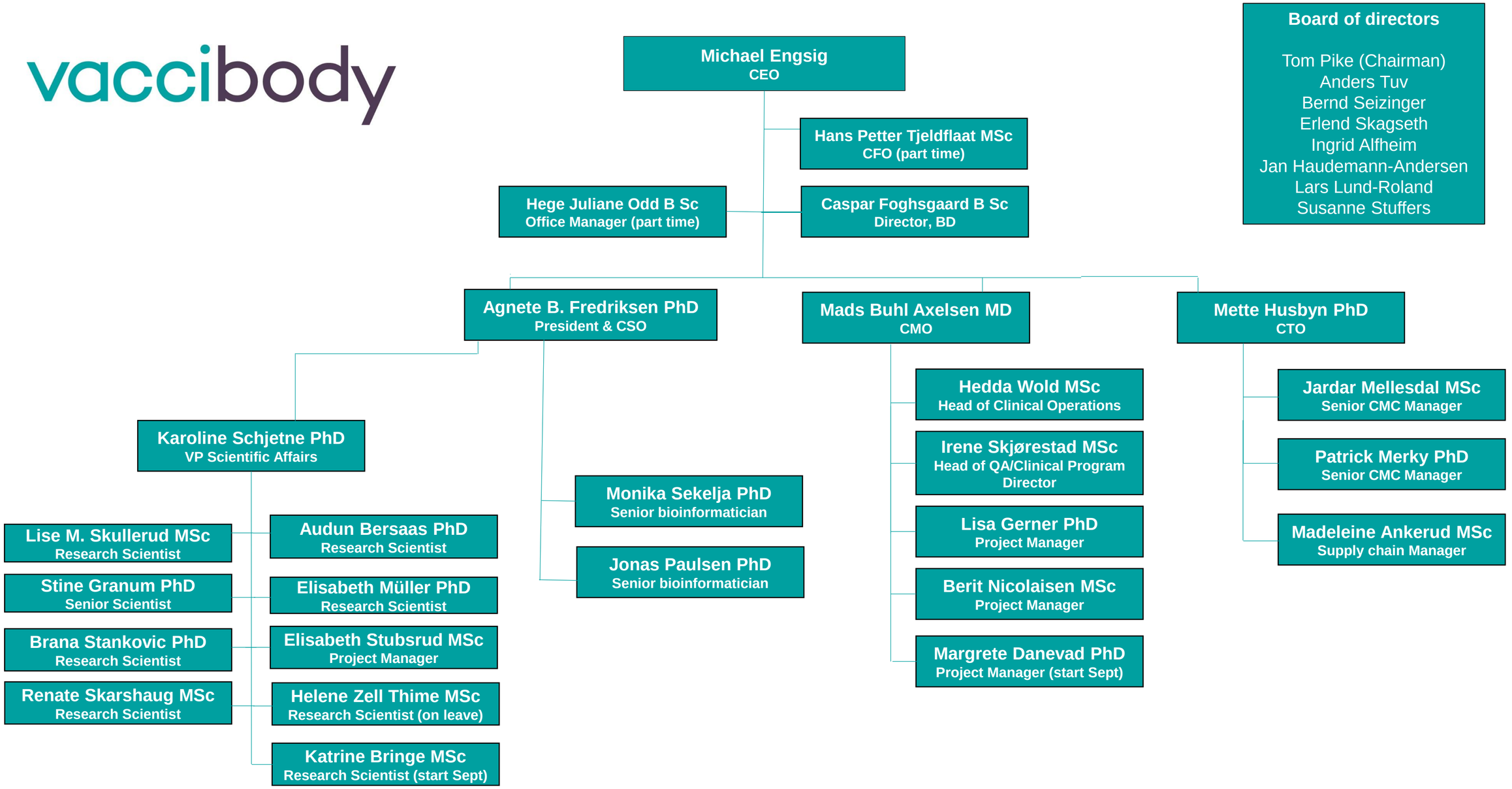
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