

Revolutionizing mRNA for Life

Investor Handout, January 2021

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PIONEERS IN MEDICAL MRNA APPLICATIONS



- Founded in 2000
- Headquartered in Tübingen
- >550 employees
- Nasdaq listed

UNIQUE MRNA TECHNOLOGY



- Unmodified mRNA
- Balanced immune activation
- Low dose activity

DEEP CLINICAL PIPELINE



- Prophylactic Vaccines
- Immuno-oncology
- Protein Therapies

MANUFACTURING EXPERTISE











- 3 GMP suites online
- 1 large-scale suite in progress
- Broad European CMO network
- Flexible and mobile GMP units

STRATEGIC PARTNERSHIPS

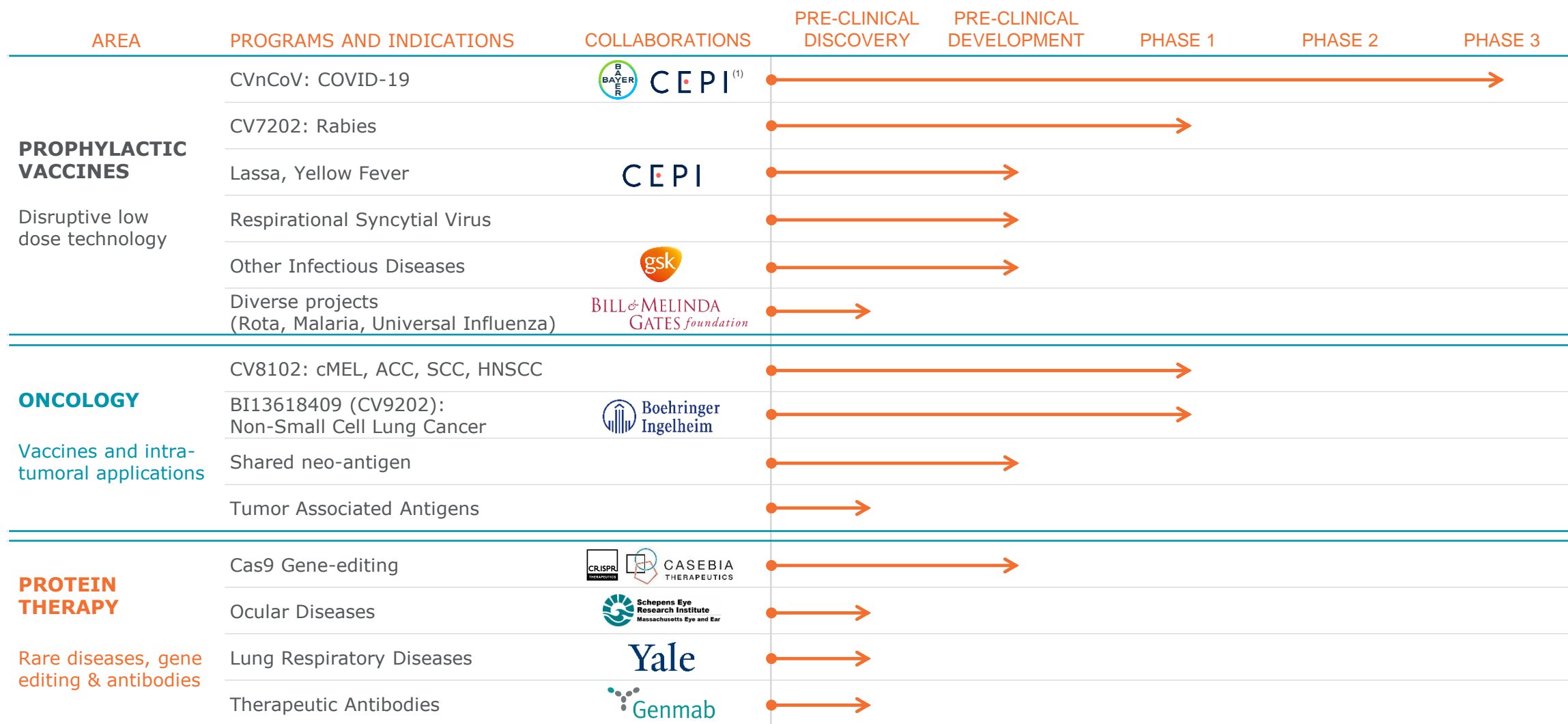


- Development support
- Medical affairs expertise
- Commercial execution power

Differentiated Technology Creates A New Class of Products

	FOCUS AREA	LEAD PROGRAM / COLLABORATION	FORMULATION
 Immune active applications	Prophylactic Vaccines <ul style="list-style-type: none"> Induction of antibody responses Induction of T-cell responses 	<ul style="list-style-type: none"> COVID-19 CVnCoV Rabies CV7202 	 Lipid nano-particle
	Oncology <ul style="list-style-type: none"> Induction of T-cell responses Induction of antibody responses Breaking of tolerance Activation of innate and adaptive immunity 	<ul style="list-style-type: none"> Tumor-associated antigens Shared neo-antigens CV8102 	 Lipid nano-particle  Peptide based
 Immune silent applications	Protein Therapy <ul style="list-style-type: none"> Oncology <ul style="list-style-type: none"> Use of the liver as a bioreactor Convey controlled immunogenicity Rare Diseases <ul style="list-style-type: none"> Ocular administration Mucosal delivery Other 	<ul style="list-style-type: none"> Genmab collaboration Harvard collaboration Yale collaboration CRISPR collaboration 	 Lipid nano-particle  Polymer based  Lipid nano-particle

CureVac Pipeline: A Diversified Portfolio



(1) CEPI early stage Phase 1 clinical trial funding

cMEL: Cutaneous melanoma; ACC: Adenoid cystic carcinoma; SCC: Squamous cell carcinoma; HNSCC: Squamous cell carcinoma of head and neck

2020 – Year of Corporate Transformation

COVID-19 PROGRAM

Rigorous pre-clinical candidate selection

Accelerated clinical development in Phase 1, 2, 3

Manufacturing optimization and scale-up



BUSINESS EVOLUTION

Growing talent base:
>550 employees

Management expertise expansion

Strategic partnership



FINANCIAL EXECUTION

CVAC | **Nasdaq** Listed

Strong cash position:
~\$1.04 billion*



Our Core Mandate 2021: Deliver a Safe and Effective COVID-19 Vaccine

Succeeding in the clinic

- Expect to provide first efficacy data in Q1 2021
- Expect to gain regulatory approval in Q2 2021

Creating capacity

- 3 in-house GMP certified suites
- 4th large-scale suite in progress
- Trans-European CMO network

Delivering the vaccine

- Bayer adding key operational and commercial support
- Cross-border and cross-institution collaborations



Executing on Corporate Growth With An Experienced Team

CureVac Management



Franz-Werner Haas
LLD, LLM
Chief Executive Officer



Pierre Kemula
B.Sc.
Chief Financial Officer



Mariola Fotin-Mleczek
PhD
**Chief Technology
Officer**



Florian von der Mülbe
PhD, MBA
**Chief Production
Officer
& Co-Founder**



Bernd Winterhalter,
MD, PhD
**Interim Chief
Development Officer**



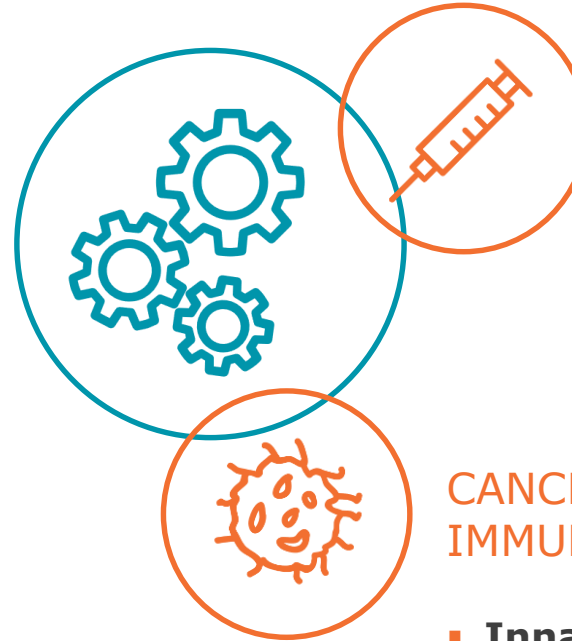
Igor Splawski
PhD
Chief Scientific Officer
NEW



Antony Blanc,
PhD
**Chief Business/
Commercial Officer**
NEW

UNIQUE MECHANISM OF ACTION

- Unmodified, natural mRNA
- Inducing type I interferons
- Inducing B and T cell responses
- Activating innate immune system
- Inducing boostable memory responses



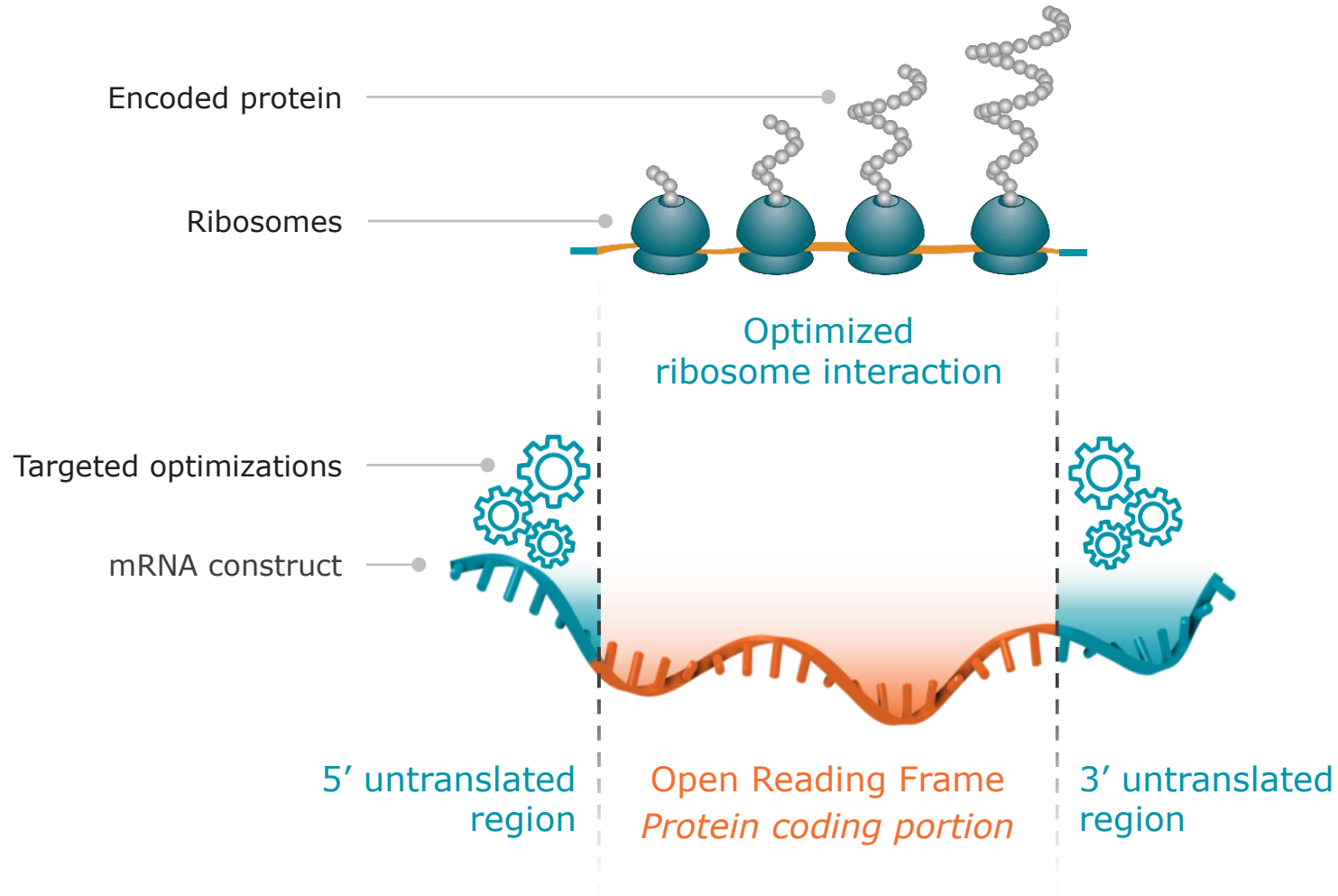
PROPHYLACTIC VACCINES

- Active at **low dose** in humans
- Enables **multivalent** vaccines
- Fast, **large-scale** GMP production
- Multiple product candidates

CANCER VACCINES & IMMUNO-MODULATION

- **Innate** and **adaptive** immune activation
- Key activation of **T cell responses**
- Demonstrated **breaking of tolerance**
- Multiple product candidates

Unmodified mRNA: Differentiated Mode of Action, Mimics Natural Immunity



- Optimizing untranslated regions based on potent, tissue-specific regulatory elements
- Optimizations allow for increased translation efficiency and immunogenicity
- Maximizing ribosome interaction for increased protein expression enables **low dose activity**

Prophylactic Vaccines: COVID-19 vaccine candidate, CVnCoV

Non-Human Primate Data Suggests CVnCoV Protection Against SARS-CoV-2

Humoral and cellular responses following vaccination with 8µg

- Strong **antibody induction**
 - High titers of Spike (1.6×10^3) and RBD (3.2×10^3) binding antibodies
 - High titer of virus neutralizing antibodies (2.7×10^4 at peak)
- Generation of **multiclonal T cell responses** in line with previous mouse data
- Dose efficiency comparable to 12 µg dose advanced into late-stage human clinical testing

SARS-CoV-2 challenge infection following vaccination with 8µg

UPPER RESPIRATORY TRACT: NOSE AND THROAT

- **Reduced** viral load

LOWER RESPIRATORY TRACT: LUNGS

- **Full lung protection,** no detectable viruses



Clinical Development of COVID-19 Vaccine Candidate, CVnCoV



Phase 1

Germany / Belgium



DOSE ESCALATION TRIAL

- 2-20µg, placebo controlled
- 280 participants, **fully recruited**
- Expected data update: **Q1 2021**

Phase 2a

Peru / Panama



DOSE CONFIRMATION TRIAL

- 6µg / 12µg, placebo controlled
- 690 participants, **fully recruited**
- Expected first data: **Q1 2021**

Phase 2b/3

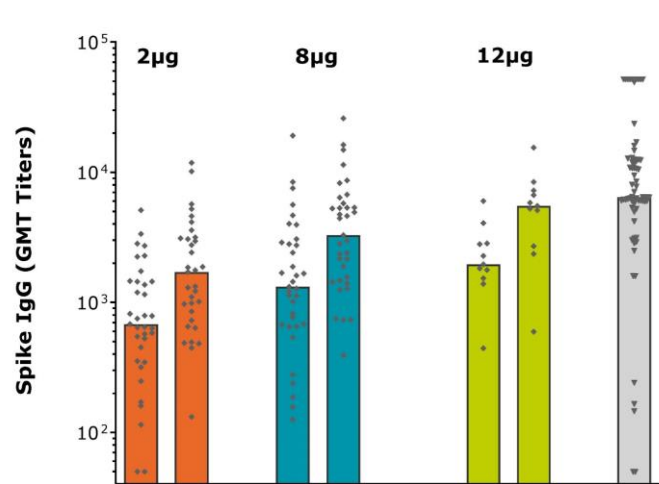
Europe / South America



SAFETY AND EFFICACY TRIAL

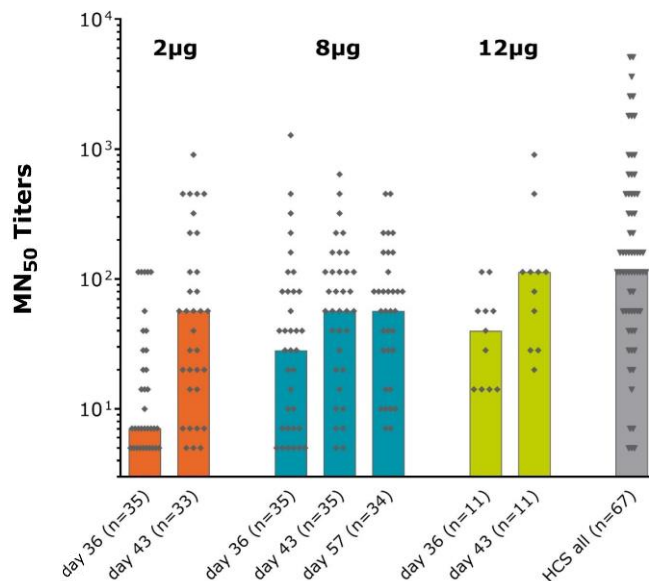
- 12µg, placebo controlled
- >37,000 participants, **recruiting**
- Expected interim data: **Q1 2021**

CVnCoV: SARS-CoV-2 Specific Antibody Responses



Spike protein binding antibodies

- Induction of anti-bodies across tested dose range
- Immune responses detected at lowest dose of 2µg

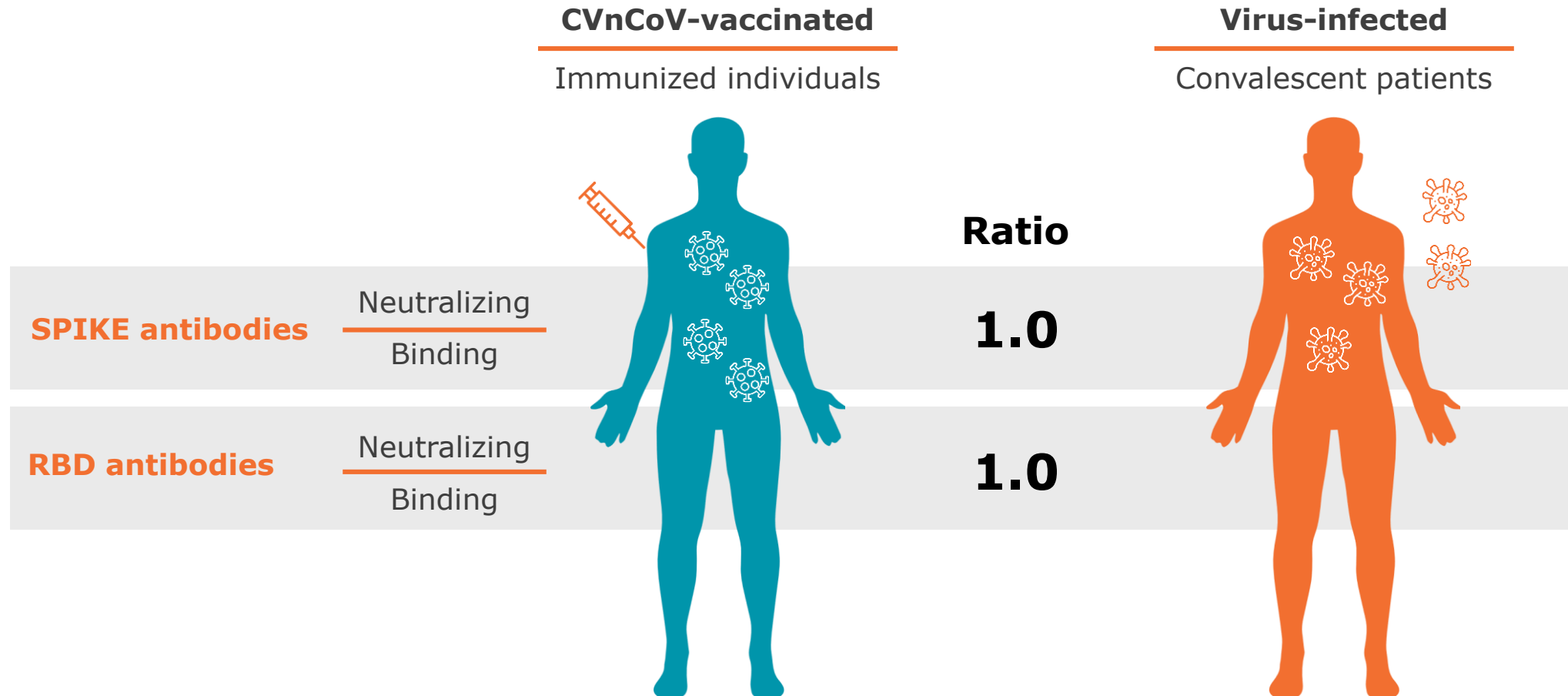


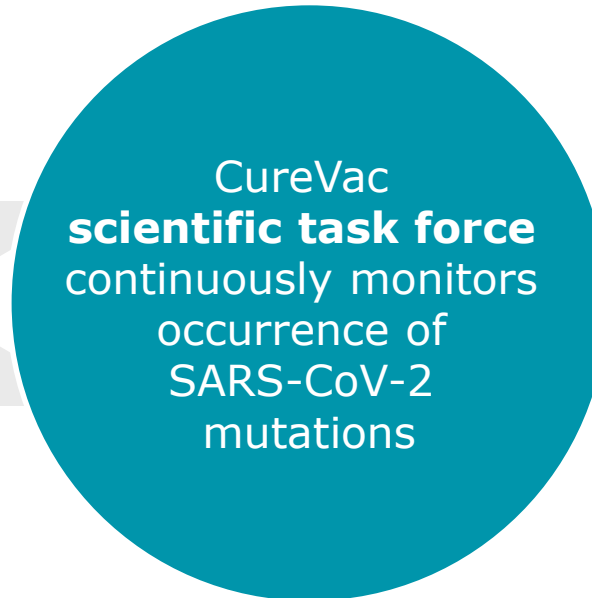
Virus neutralizing antibodies

- Antibody titers reach highly medically relevant HCS level at 12µg
 - HCS: Comparator with highest medical relevance
 - 51 patients with multiple symptoms, 16 hospitalized
 - Antibodies measured at peak times

CVnCoV: Phase 1 Proportion of Neutralizing vs. Binding Antibodies

Quality of immune response is reflected in antibody ratios, which are similar in CVnCoV-vaccinated subjects and convalescent patients





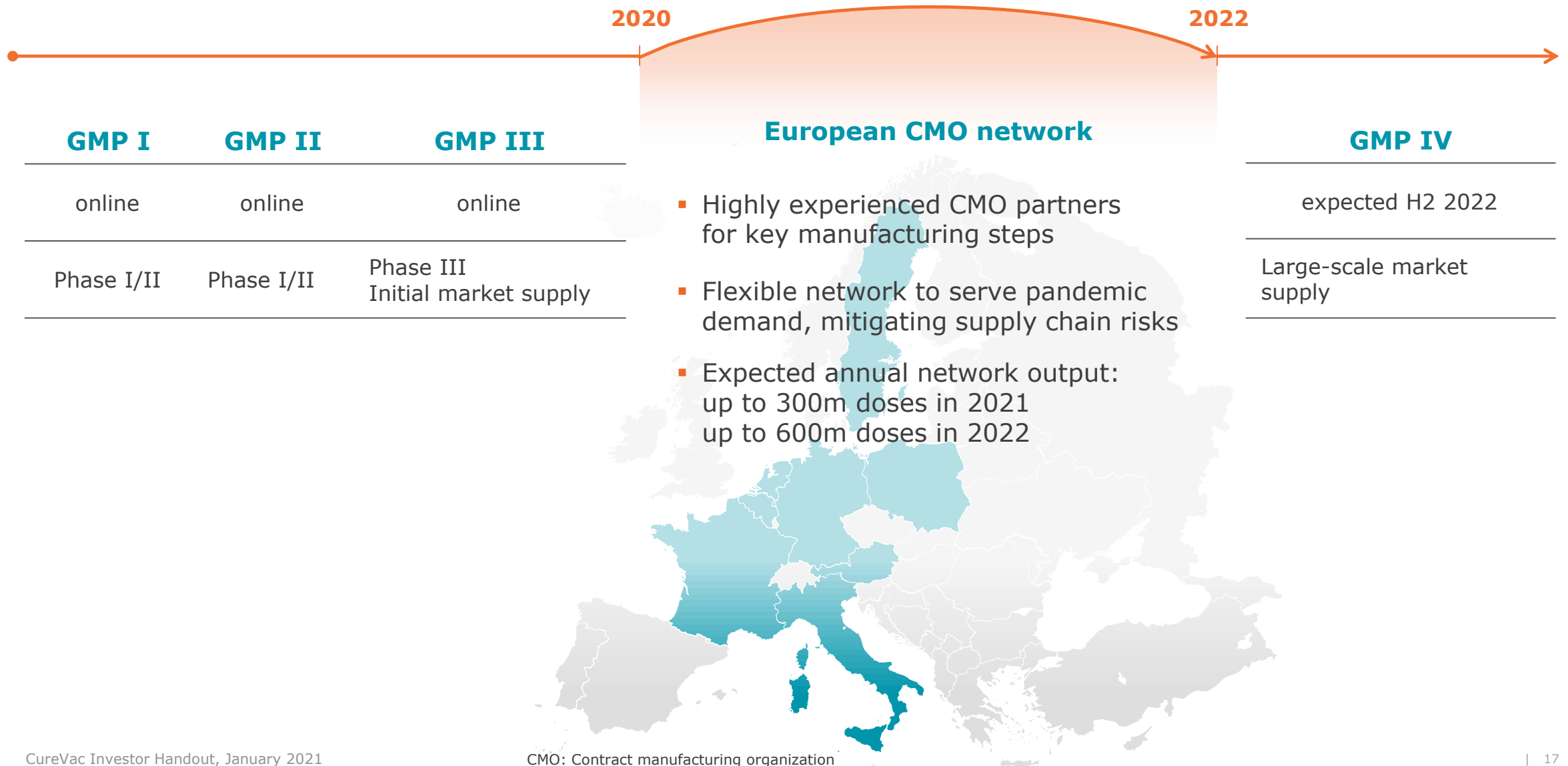
In vitro testing of CVnCoV efficacy toward mutated virus

- Neutralizing capability of induced antibodies toward mutated virus
- Test via exposing blood serum of trial participants to mutated virus
- Testing at partner labs ongoing with clinical trial blood samples

Bioinformatic pre-screening of CVnCoV efficacy toward mutated virus

- Monitoring of all available scientific data on mutation
- Computes structural impact of mutations on antibody binding sites
- Screening allows for first indication of potential severity of mutation

Scaling-up internal and external manufacturing capacities



RNA Printer™: Mobile Manufacturing Expected to Revolutionize GMP Process



Cloud based network
Rapid exchange of insights

GLOBAL HEALTH

PANDEMIC PREPAREDNESS in hospitals in outbreak regions

- Containing an outbreak at its origin with 1-3g output per week

HEALTHCARE

CUSTOMIZED, POINT OF CARE mRNA therapeutics

- Expected to rapidly provide therapeutics tailored to patients' needs

RESEARCH

CLINICAL DEVELOPMENT ACCELERATION at lower costs

- Realizing different constructs and supplying studies onsite



Delivering the Vaccine: CureVac and Bayer Join Forces on CVnCoV



Expertise and infrastructure



- Adding operational knowledge, broad international reach and regional access to support global supply of CVnCoV



Differentiated mRNA technology

Support of product development



- Adding muscle in areas such as clinical operations, regulatory affairs, pharmacovigilance, and supply chain performance



COVID-19 lead program, CVnCoV

Key territory operations



- Adding country support for EU member states, Norway, Iceland, Liechtenstein, UK, Switzerland
- CureVac to be Market Authorization Holder, option for Bayer in other markets outside the EU

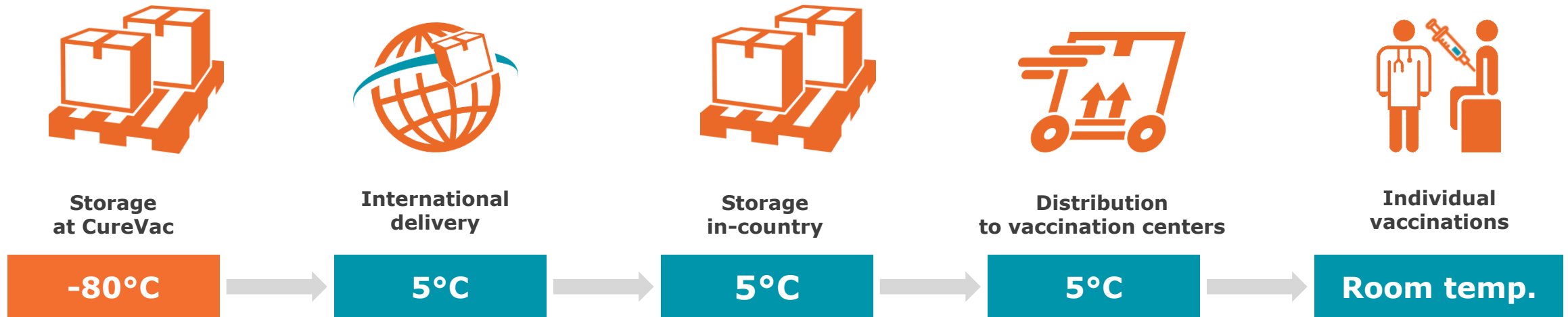


Manufacturing capacity

CVnCoV Shelf Life Allows for Established Cold-Chain Distribution

— 5°C (41°F) SHELF LIFE OF AT LEAST 3 MONTHS* —

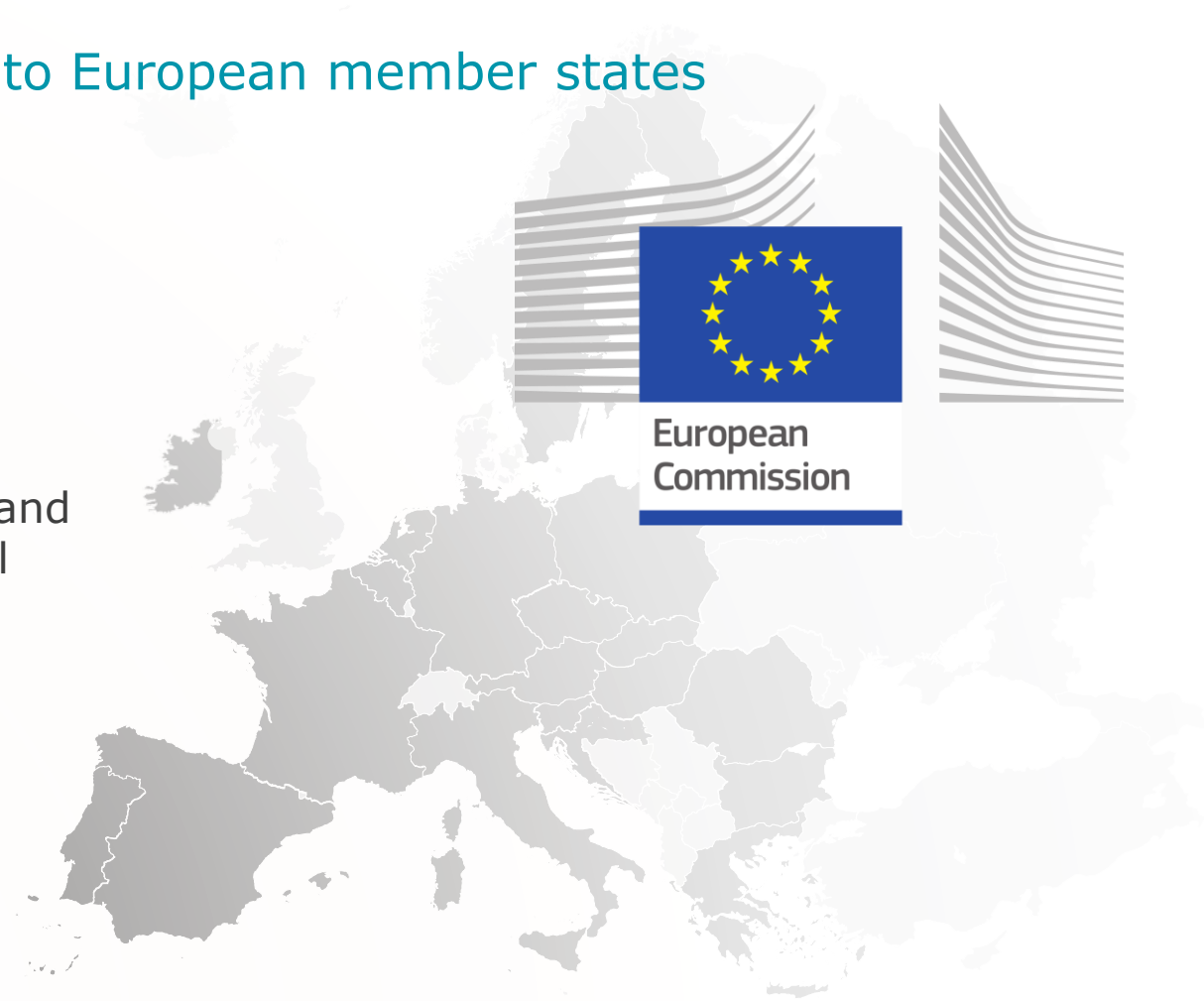
FOR 24 HOURS*



- Facilitated logistics for decentralized storage and large-scale vaccination efforts
- Expected positive impact on distribution, cost and waste compared to ultra-low cold chain requirements

Delivering up to 405 million doses of CVnCoV to European member states

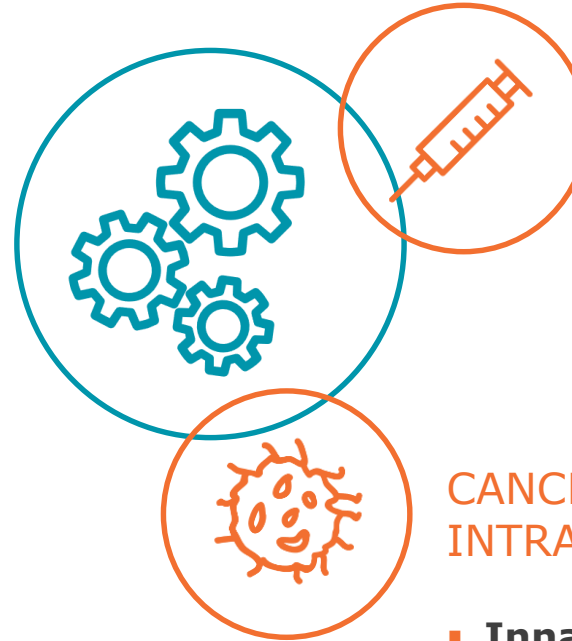
- Agreement for 225m doses and an additional 180m dose option
- Upfront payment expected to mitigate project costs and help to de-risk production before regulatory approval
- Leveraging in-house manufacturing as well as integrated European manufacturing network



Oncology: Solid Tumor lead program, CV8102

UNIQUE MECHANISM OF ACTION

- Unmodified, natural mRNA
- Inducing type I interferons
- Inducing B and T cell responses
- Activating innate immune system
- Inducing boostable memory responses



PROPHYLACTIC VACCINES

- Active at **low dose** in humans
- Enables **multivalent** vaccines
- Fast, **large-scale** GMP production
- Multiple product candidates

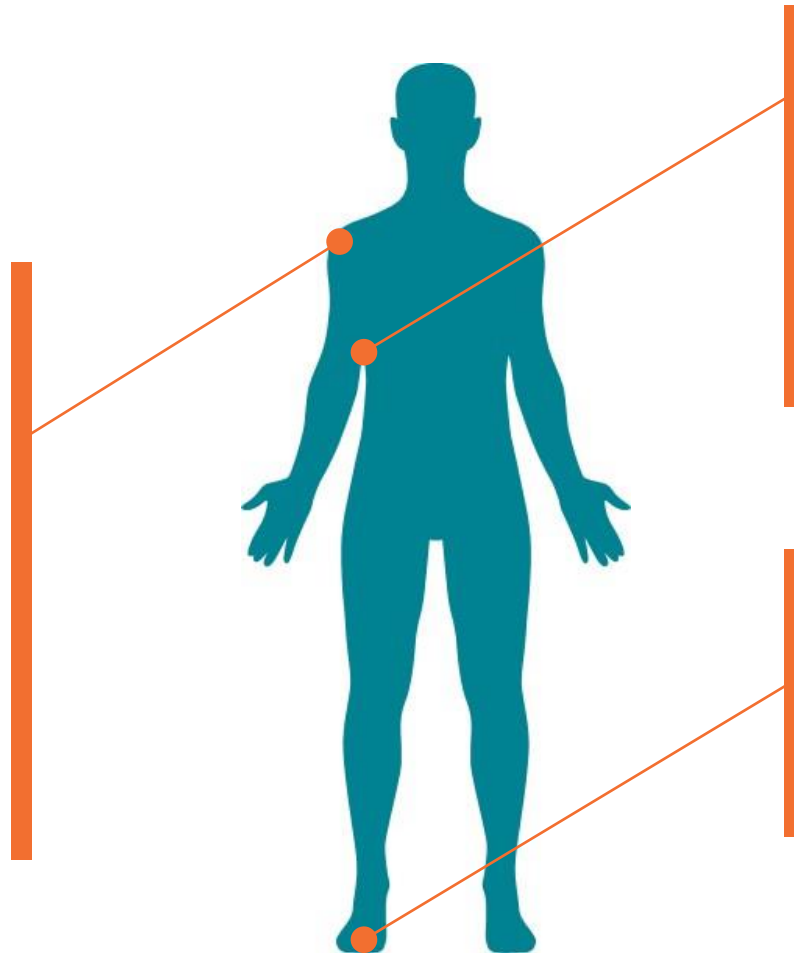
CANCER VACCINES & INTRA-TUMORAL IMMUNOMODULATION

- **Innate** and **adaptive** immune activation
- Key activation of **T cell responses**
- Demonstrated **breaking of tolerance**
- Multiple product candidates

CV8102 targets immune receptors TLR 7, TLR8 and RIG-I

TREATED TUMOR LESION

- Induction of cytokines, chemokines
- Antigen release and presentation
- Activation of innate immune cells
- NK and T-cell activation
- Tumor growth inhibition



DRAINING LYMPH NODE

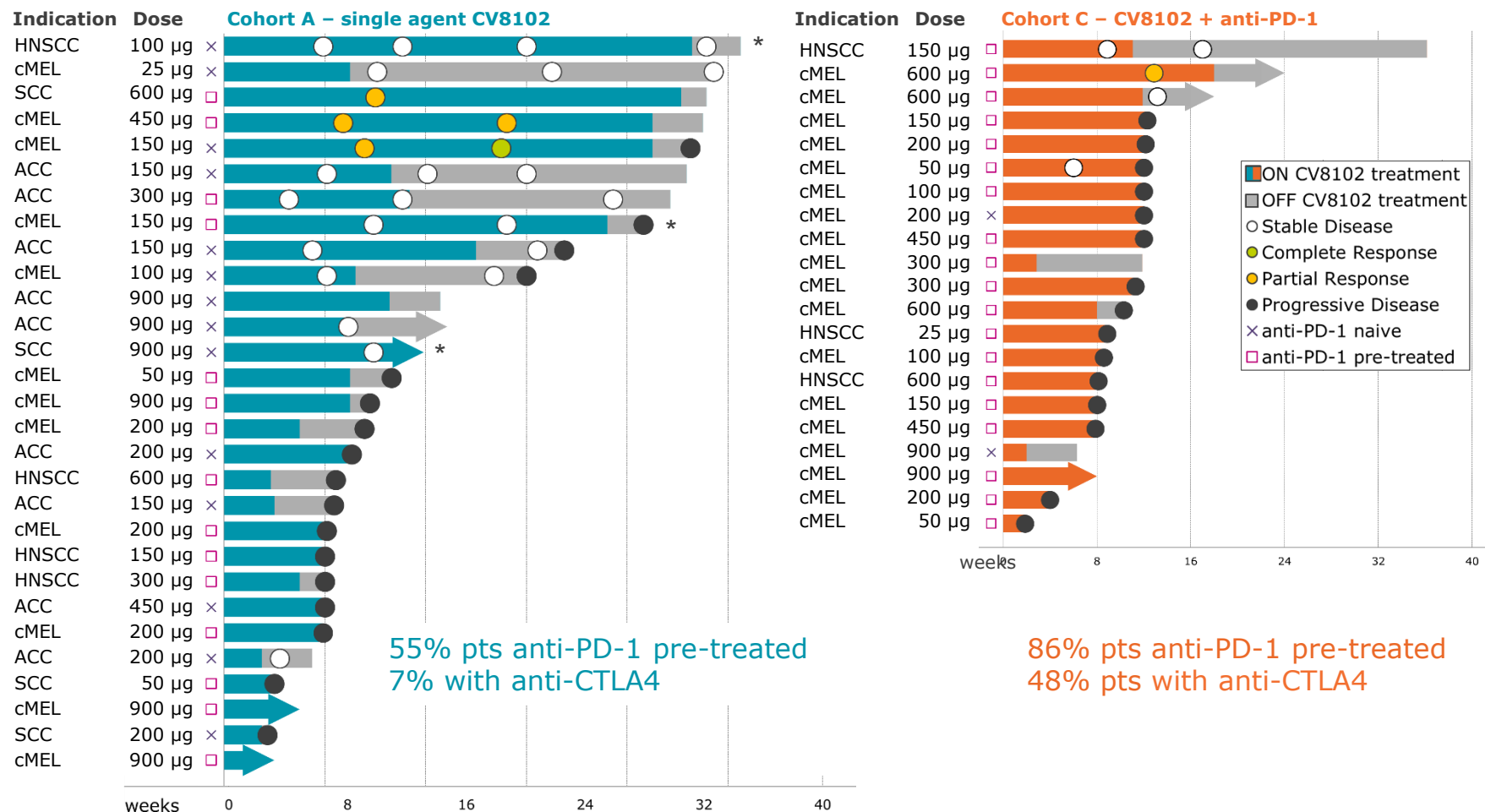
- Activation of immune cells
- Antigen presentation, T cell priming
- NK, T- and B-cell activation

DISTAL TUMORS

- Tumor growth inhibition
- Amplification of immune response

CV8102: Preliminary Efficacy Data Update

Preliminary data on overall tumor response and duration (data cut-off October 5, 2020)



Preliminary efficacy: single agent

- 1 Complete Response (cMel)
- 2 Partial Responses (cMel, cSCC)
- 3 Stable Diseases with shrinkage of injected and/or non-injected lesions* (HNSCC, Melanoma, cSCC)

Preliminary efficacy: combination with PD-1 antibodies

- 1 Partial Response (cMel)
- 2 Stable Diseases (cMel, HNSCC)
- Patients more heavily pre-treated than patients in single agent cohort

cMEL: Cutaneous melanoma; ACC: Adenoidcystic carcinoma; SCC: Squamous cell carcinoma; HNSCC: Squamous cell carcinoma of head and neck

Case study 1

150 µg Complete Response (CR)

Lesion
pre-treatment



5 injections
CV8102



8 injections
CV8102



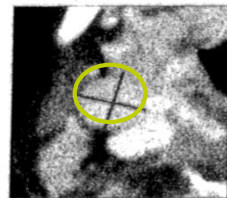
74-year-old female patient, stage IIIC melanoma with multifocal in-transit metastases

- CR of injected and non-injected cutaneous lesions
- CR of subcutaneous lesion (MRI)
- Marked transient rise in serum IL-6 and CRP following the first intra-tumoral injection
- Partial regression of injected tumor lesion after 5 injections
- CR of in-transit metastases on MRI, CR of all skin metastases at week 12
- Patient continued to receive injections at monthly intervals for 9 months without recurrence

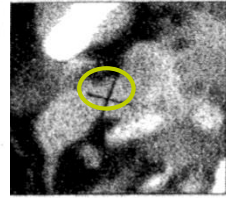
Case study 2

100 µg CV8102 (SD)

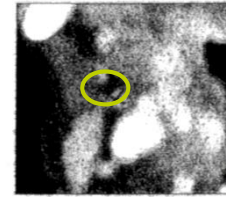
Metastatic LN
pre-treatment



6 injections
CV8102



13 injections
CV8102



91-year-old male patient, stage IV HNSCC with large buccal and small lip lesion and a contralateral cervical metastatic LN, pretreated with cetuximab, external beam radiation and multiple surgeries

- Buccal and lip lesions remained stable for 9 months (study duration)
- Untreated metastatic LN showed ongoing regression
- Overall stable disease according to RECIST 1.1 for 9 months
- Early increase in IL-6

Case study 3

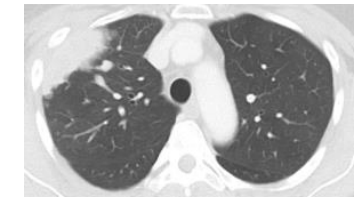
450 µg CV8102 (PR)

Pre-treatment

Noninjected pleural lesion

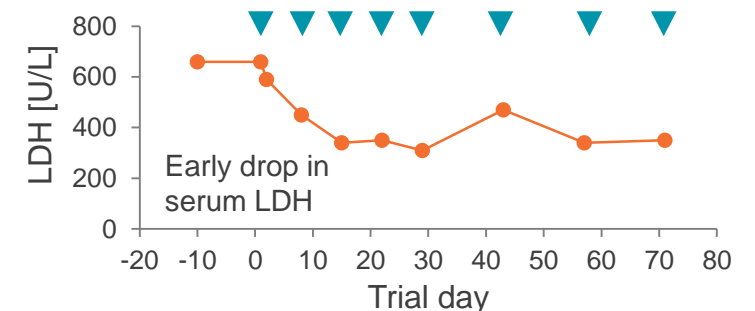


after 8 CV8102
injections



50-year-old female patient, patient with anti-PD-1 refractory melanoma, stage IV N3c M1b at study entry, early progression on adjuvant Nivolumab treatment

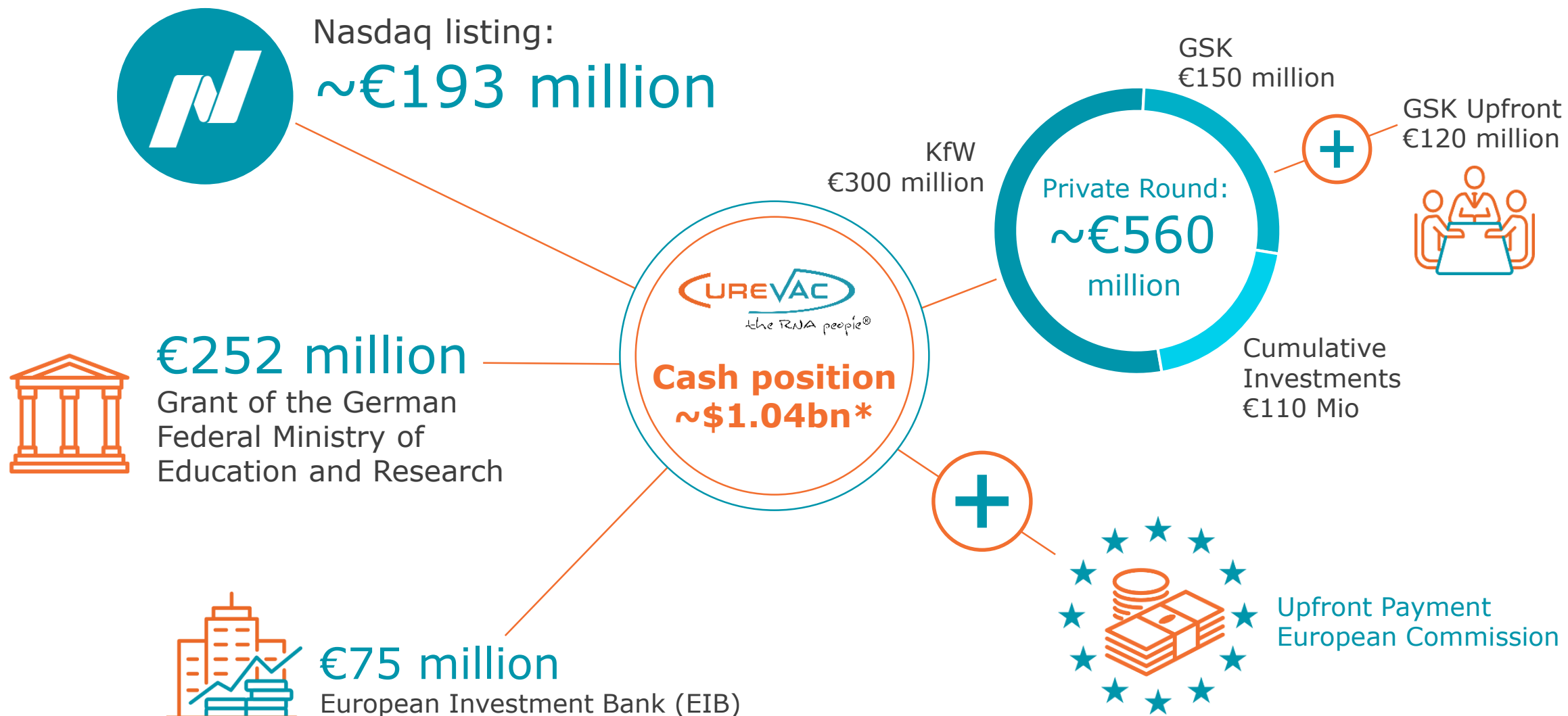
- After 8 IT injections of CV8102
 - ⇒ PR per RECIST 1.1 with shrinkage of injected and several non-injected lesions





Financial Overview Q3 and First Nine Months of 2020

Our Financial Strength Enables the Company Transformation



Key Takeaways



On track to
finalize late stage
clinical CVnCoV
development

Positioned to
bring CVnCoV
to market in
H1 2021

Broaden
operational
infrastructure
along CVnCoV
momentum

Focused pipeline
strategy
in our three
key areas

Grow the talent
base for
transformation
from biotech to
biopharma

Appendix



Financial Results for Q3 and first Nine Months 2020

	Three Months ended September 30		Nine Months ended September 30	
	2020	2019	2020	2019
(in € thousands)	unaudited		unaudited	
Revenue	5.162	1.096	42.830	10.600
Cost of sales	-1.973	-6.999	-7.049	-18.872
Selling and distribution expenses	200	24	-809	-485
Research and development expenses	-34.570	-5.349	-76.337	-30.665
General and administrative expenses	-9.422	-9.124	-33.147	-28.504
Other operating income	3.964	1.333	11.695	3.838
Other operating expenses	-119	-126	-357	-339
Operating loss	-36.758	-19.145	-63.174	-64.427
Financial result	-68	141	-9.416	209
Loss before income tax	-36.690	-19.004	-72.590	-64.218
Income tax benefit/ (expenses)	-144	644	1.615	335
Net loss for the period	-36.834	-18.360	-70.975	-63.883
Diluted earnings per share (In € per share)			-0.61	-0.66

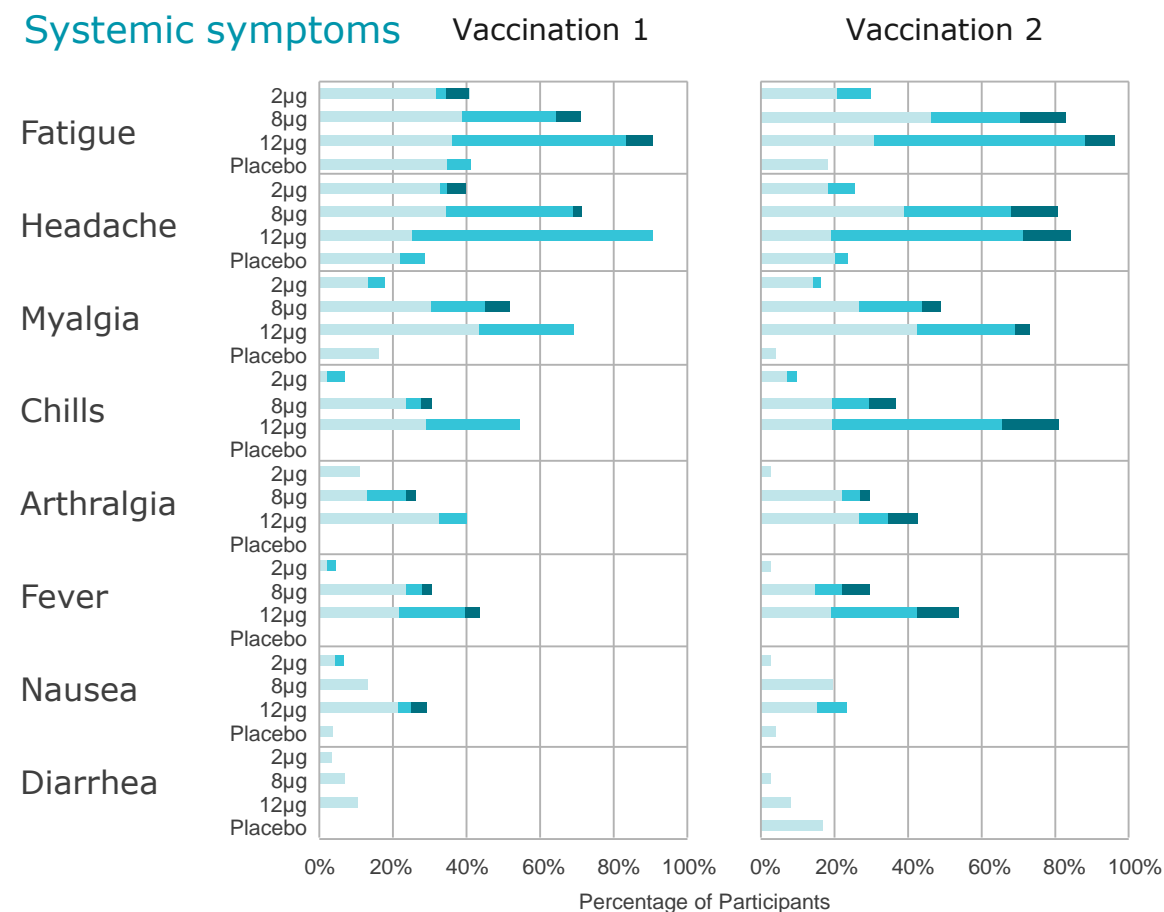
			Seronegative	Seropositive	Fully recruited
12µg	12µg	Sentinel group (11)	24	4	✓
8µg	8µg	Full cohort	46	6	✓
6µg	6µg	/	46	10	✓
4µg	4µg	/	46	10	✓
2µg	2µg	Full cohort	46	10	✓
Day 1 Prime vaccination	Day 29 Boost vaccination	Reported here: Day 36 & 43	Total: 220	Total: 41	

- Partially blinded, placebo-controlled, dose-escalation study in healthy adults (18-60 years)
- Clinical sites in Germany and Belgium
- Intra-muscular vaccinations on day 1 and 29
- Data Safety Monitoring Board (DSMB) approval of tolerability and dose escalation

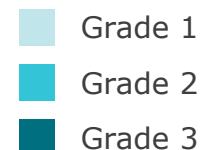
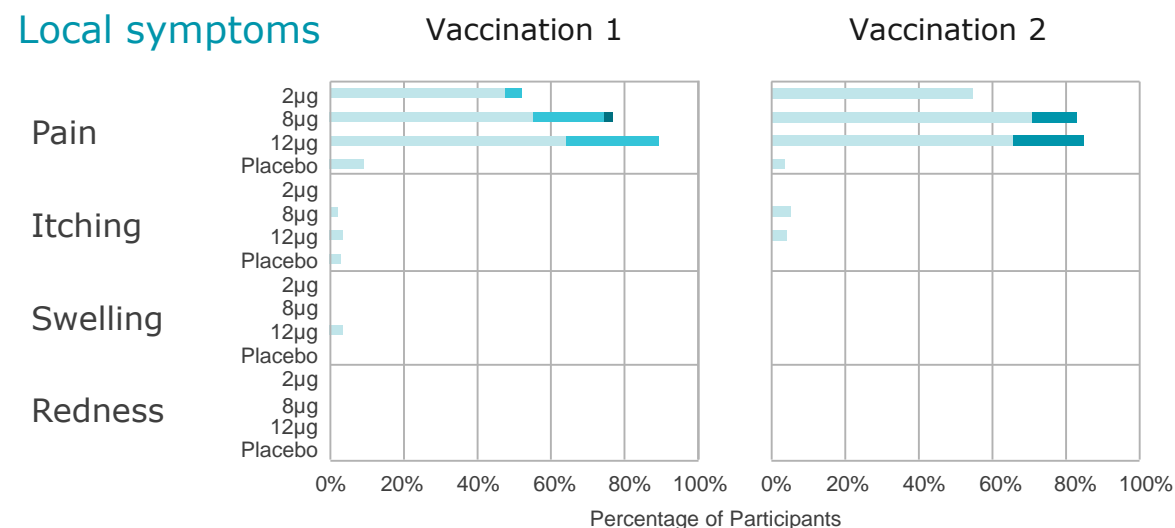
CVnCoV Phase 1 Reactogenicity Data

No serious adverse events or dose limitations were observed
All symptoms were transient and resolved rapidly within 24 to 48 hours

Systemic symptoms



Local symptoms



Binding antibodies:

- Measured by ELISA
- Spike protein (S1+S2)
- Receptor Binding Domaine (RBD)

Virus neutralizing antibodies:

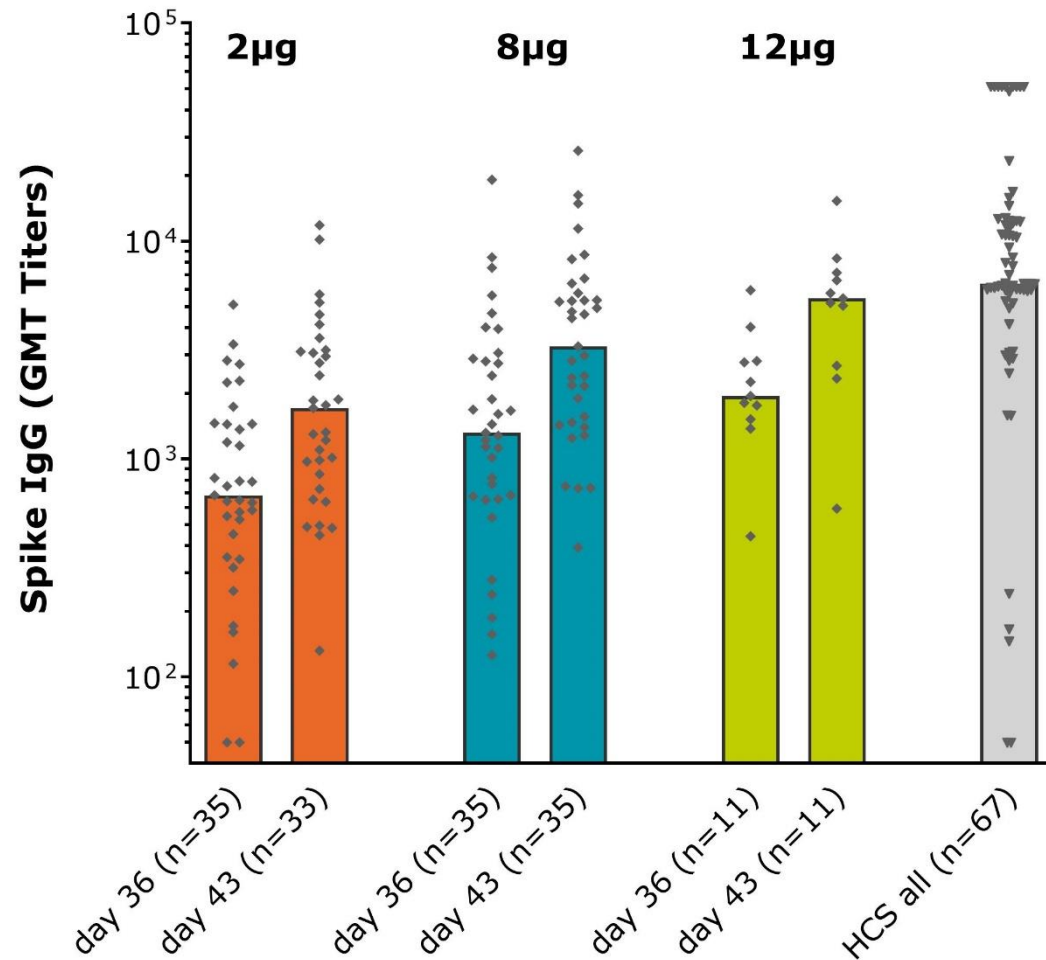
- Measured by micro-neutralization assay
- Live human SARS-CoV-2 virus
- Positive titers by 50% of neutralization

Human Convalescent Sera (HCS) panel:

- Comparator with highest medical relevance
- 51 patients with multiple symptoms, 16 hospitalized
- Antibodies measured at the peak time

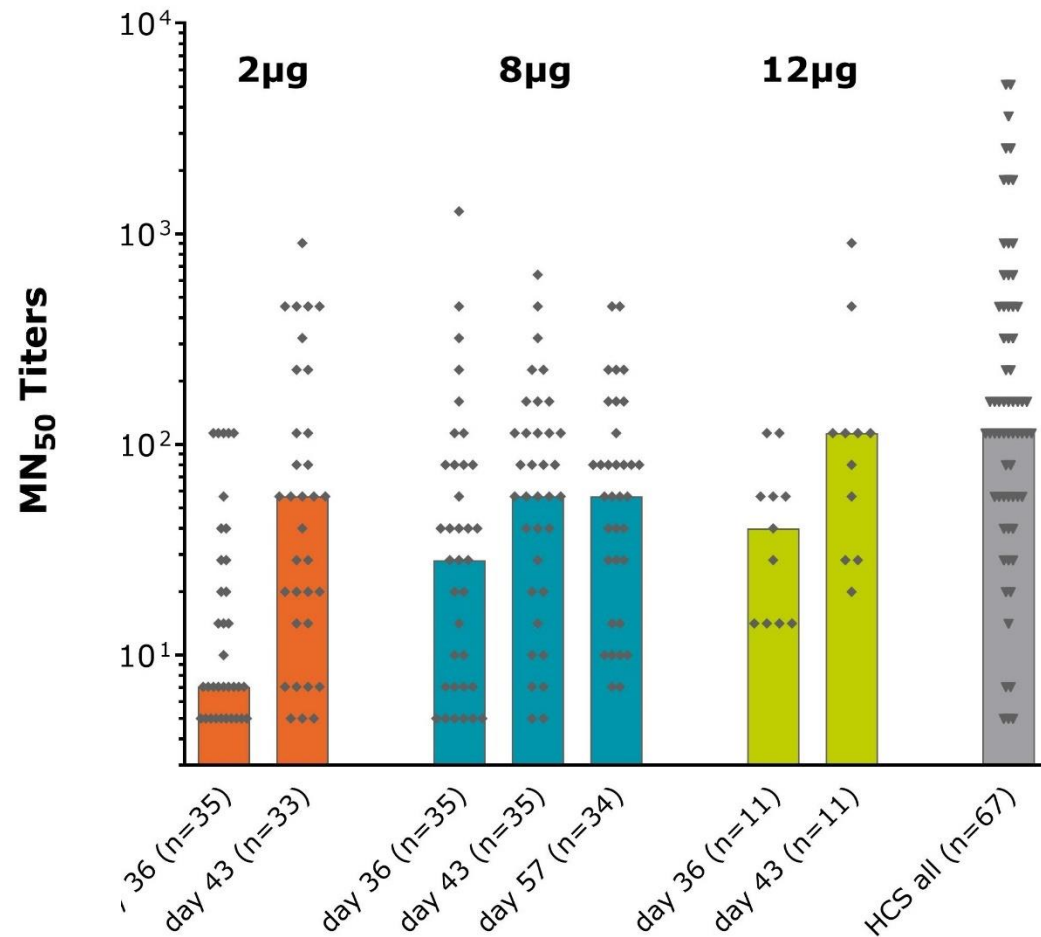


CVnCoV Phase 1 Spike Binding Antibodies: Show dose-dependent induction



- Dose-dependent induction of binding antibodies across tested dose range
- Immune response detected at lowest dose of 2μg
- Binding antibody titers reach highly medically relevant HCS level at 12μg

CVnCoV Phase 1 Neutralizing Antibodies: Reach highest relevant HCS level



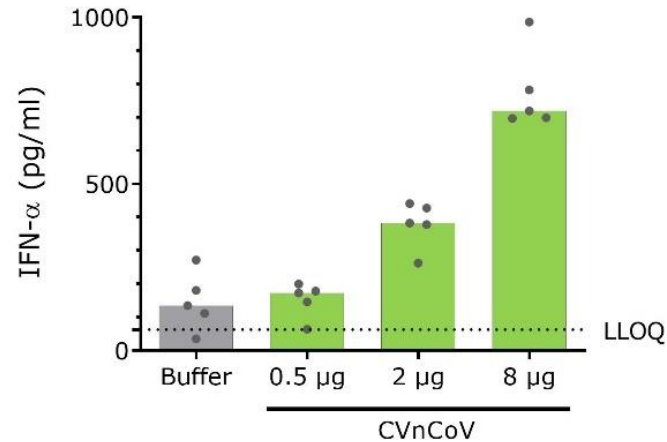
- Titers remain stable after reaching peak level
- Immune response already at lowest dose of 2μg detected
- Neutralizing antibody titers reach highly medically relevant HCS level at 12μg

Unique Mechanism of Action Mediated by Interferon Type 1

In animal models...

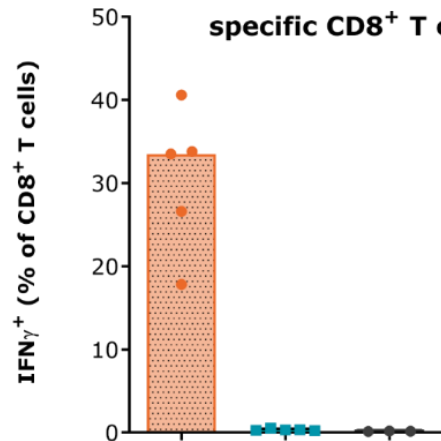
Rat model
Day 1 after 1 dose

**Dose dependent
induction of
IFN-α in rats**

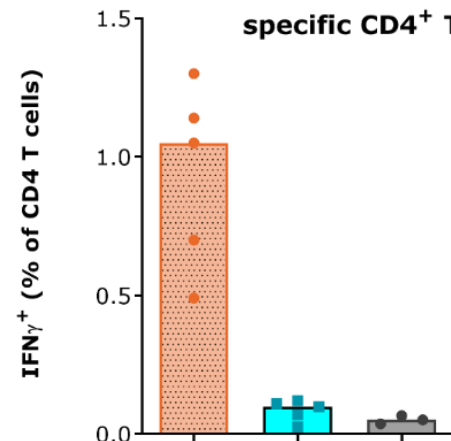


Mouse model
Day 15 after 2nd dose

**Induction of SARS-CoV-2
specific CD8⁺ T cells**

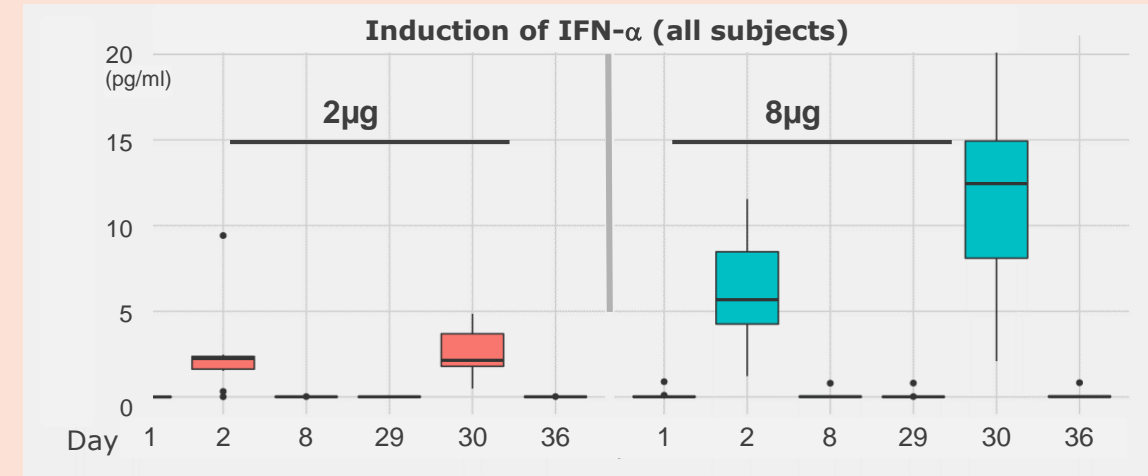


**Induction of SARS-CoV-2
specific CD4⁺ T cells**



CureVac Investor Handout, January 2021

...and in humans



Science

RESEARCH ARTICLES

Cite as: P. Bastard *et al.*, *Science*
10.1126/science.abd4585 (2020).

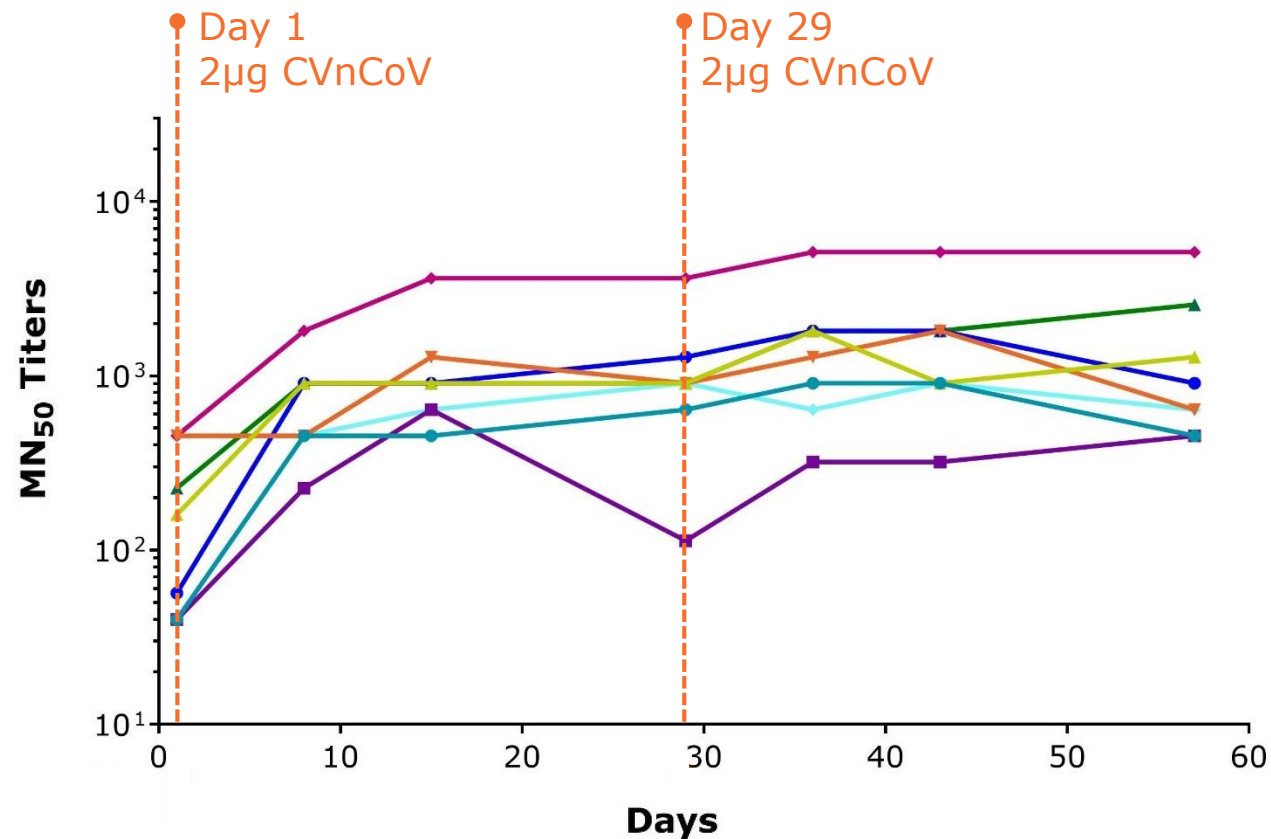
Auto-antibodies against type I IFNs in patients with life-threatening COVID-19

medRxiv preprint doi: <https://doi.org/10.1101/2020.04.19.20068015>; this version posted April 23, 2020. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. It is made available under a CC-BY-NC-ND 4.0 International license.

Impaired type I interferon activity and exacerbated inflammatory responses in severe Covid-19 patients

Jérôme Hadjadj^{1,2,*}, Nader Yatim^{3,*}, Laura Barnabei¹, Aurélien Corneau⁴, Jeremy

Long-lasting booster effect of neutralizing SARS-CoV-2 antibodies induced with 2 μ g CVnCoV in seropositive subjects



- CVnCoV vaccine was well tolerated in seropositive subjects
- All seropositive subjects benefited from the vaccination
- Stable antibody titers imply induction of immune memory for long-term protection