

BioStock Global Forum, Lund, Sweden  
Expres2ion Biotech Presentation 30 May 2024

# Innovative vaccines for a healthier world

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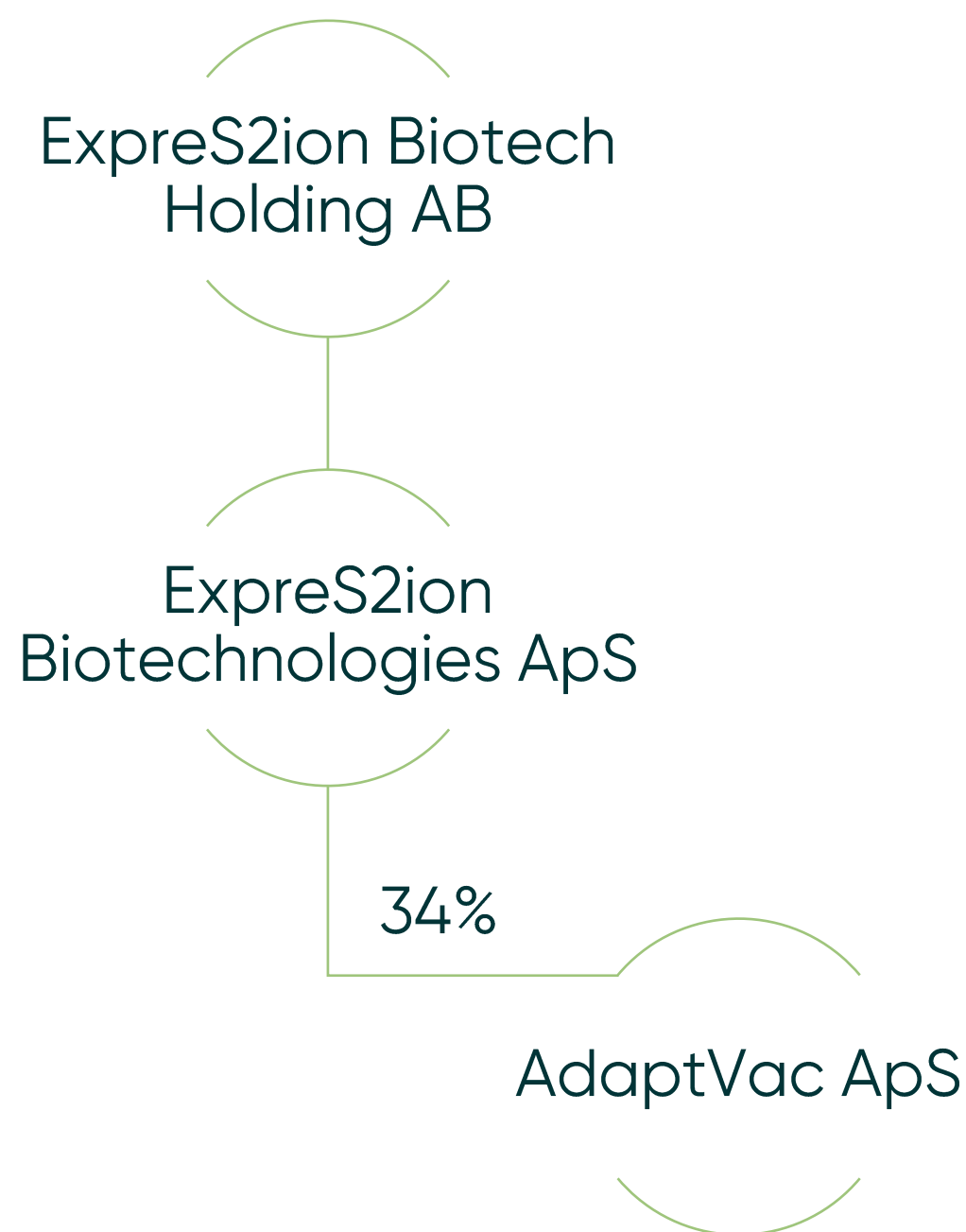
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# About Expres2ion



## Expres2ion Biotech Holding AB

- Listed on the Nasdaq First North Growth Market since 2016
- Holding company for Expres2ion Biotechnologies ApS, which it owns 100%

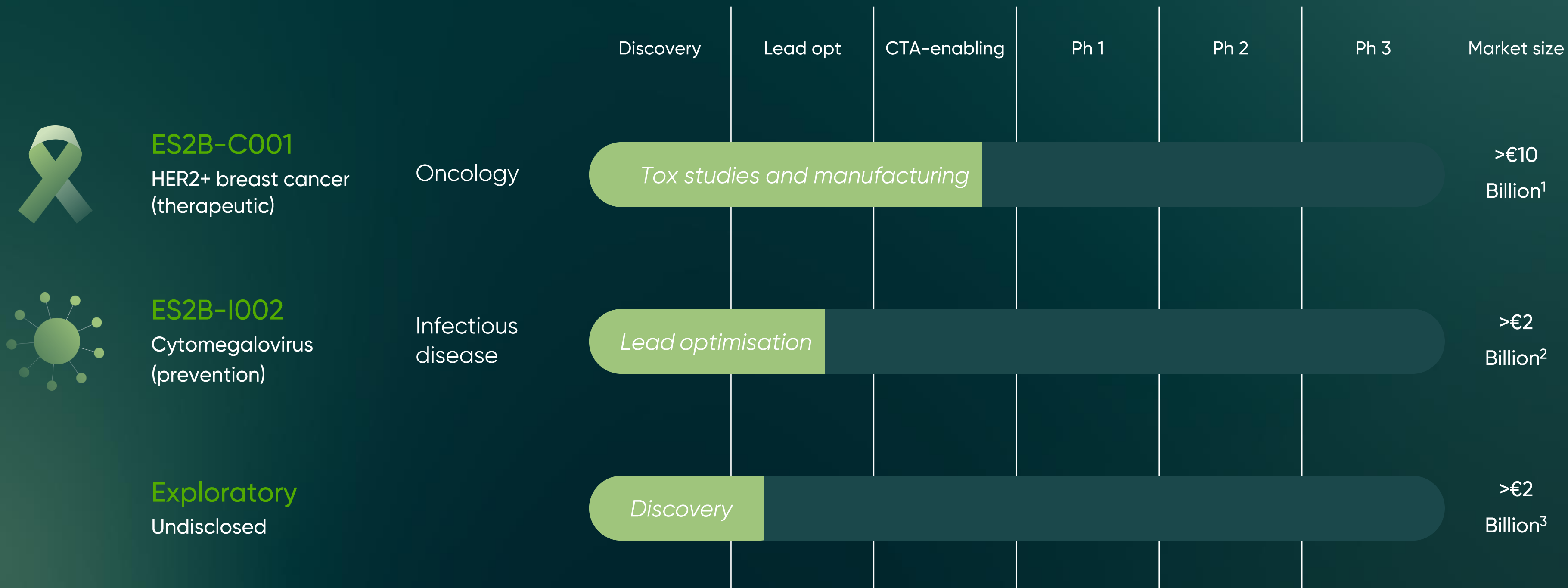
## Expres2ion Biotechnologies ApS

- Established in 2010
- **Protein expression platform technology, vaccine pipeline and CRO business**
- Located on the DTU Science Park
- Approximately 20 FTEs
- Owns 34% of AdaptVac ApS

## AdaptVac ApS

- Co-founded in 2017 by Expres2ion and researchers from Copenhagen University (NextGen Vaccines ApS)
- **Virus-like particle (VLP) platform** – AdaptVac's VLP is a delivery vehicle in two Expres2ion vaccines

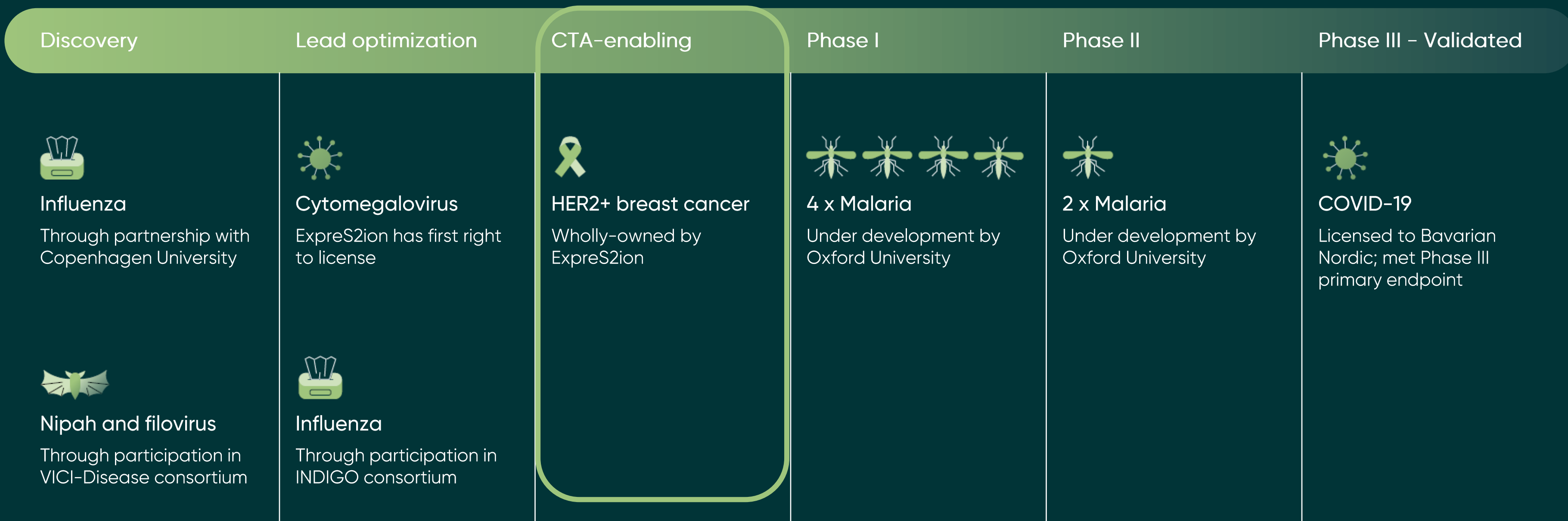
# Vaccine pipeline



<sup>1</sup> Global Data, 2022, for HER2+ breast cancer  
<sup>2</sup> Market estimate from Moderna, 41st Annual J.P. Morgan Healthcare Conference (Presentation)  
<sup>3</sup> Based on data for global market for existing therapies from Future Market Insights

# Expres2 platform proofs-of-concept

+ numerous additional pharmaceutical and biotech protein production projects



# ES2B-C001 therapeutic breast cancer vaccine

## Investment highlights

### Unmet medical need

- ExpreS2ion is developing a therapy for HER2+ breast cancer, the most common cancer

### Market size

- Estimate total market size in 2026 of €32 B<sup>1</sup>; obtainable market at launch conservatively estimated at €2.8 B

### Technical validation

- Clinically validated platform technology in use by broad mix of proprietary and partner-driven vaccine candidates

### Experienced team

- Proven leadership and experienced scientific team backed by Board of Directors & supportive Scientific Advisory Board

# Breast Cancer – The most common cancer



- 1 in 8 women will be diagnosed with invasive breast cancer
- In approximately 25% of breast cancer tumours, HER2 is overexpressed, which is associated with a more aggressive disease, higher recurrence rate, and increased mortality<sup>1</sup>
- 685,000 deaths worldwide in 2020 due to breast cancer<sup>2</sup>

<sup>1</sup> Mitri Z et al. The HER2 Receptor in Breast Cancer: Pathophysiology, Clinical Use, and New Advances in Therapy (Chemother Res Pract. 2012; 2012: 743193)

<sup>2</sup> Breast Cancer Research Foundation (<https://www.bcrf.org/breast-cancer-statistics-and-resources>)

# Competitive landscape - Drawbacks to current therapies leave room for improvement



Monoclonal antibodies (mAbs) and chemotherapy are the standard of care for most stage II and III HER2+ breast cancers after surgery<sup>1</sup>

- mAbs target the HER2 receptor on tumour cells to reduce proliferation and induce tumour cell destruction



Antibody drug conjugates (ADC) are novel treatments for HER2 positive and HER2 low breast cancer

- ADCs target delivery of a toxin agent payload guided by HER2 receptor on tumour cells



**Serious drawbacks exist with these therapies (mAbs and ADCs)**

- Resistance to mAbs and ADCs may develop<sup>2</sup>
- Challenging Compliance/Costs due to repeated intravenous infusions required: time intensive for patients and resource intensive for hospitals

<sup>1</sup> <https://www.breastcancer.org/research-news/perjeta-plus-herceptin-and-chemo-shows-benefits>  
<sup>2</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3471537/> (resistance to trastuzumab) & <https://onlinelibrary.wiley.com/doi/full/10.1002/cac2.12387> (resistance to ADCs)



# ES2B-C001 HER2-cVLP vaccine targets multiple epitopes of ECD

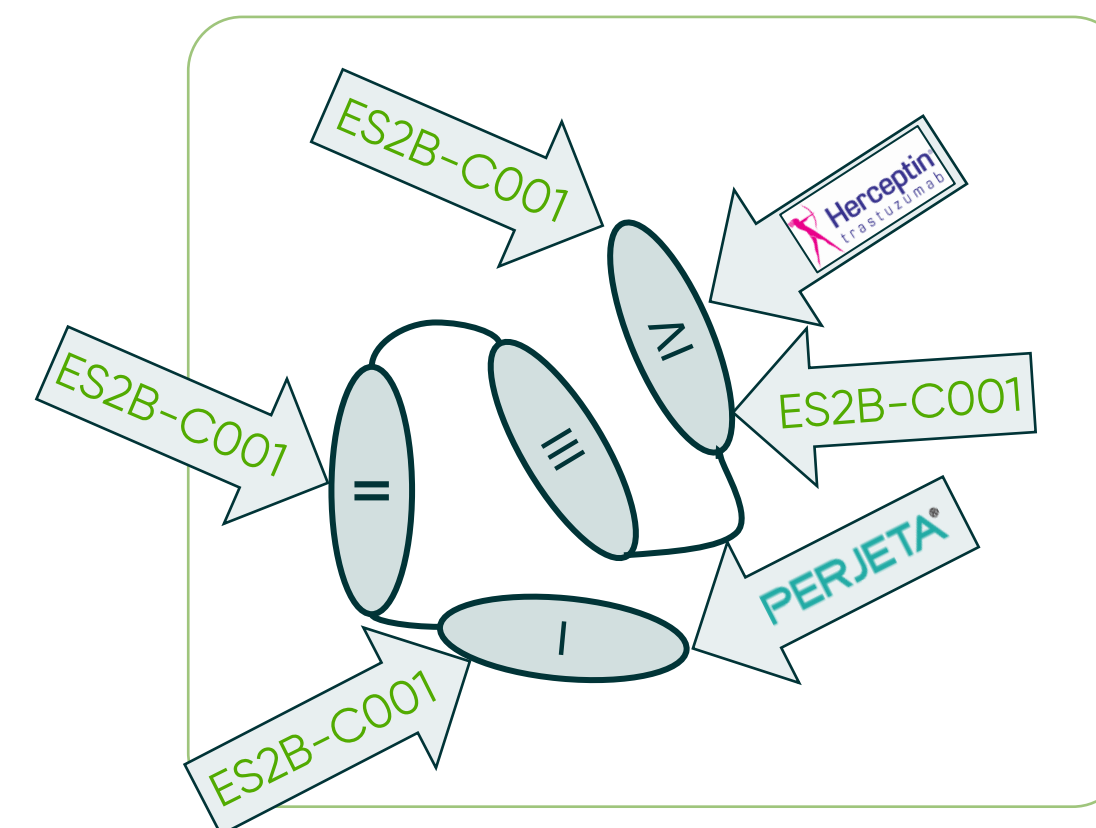
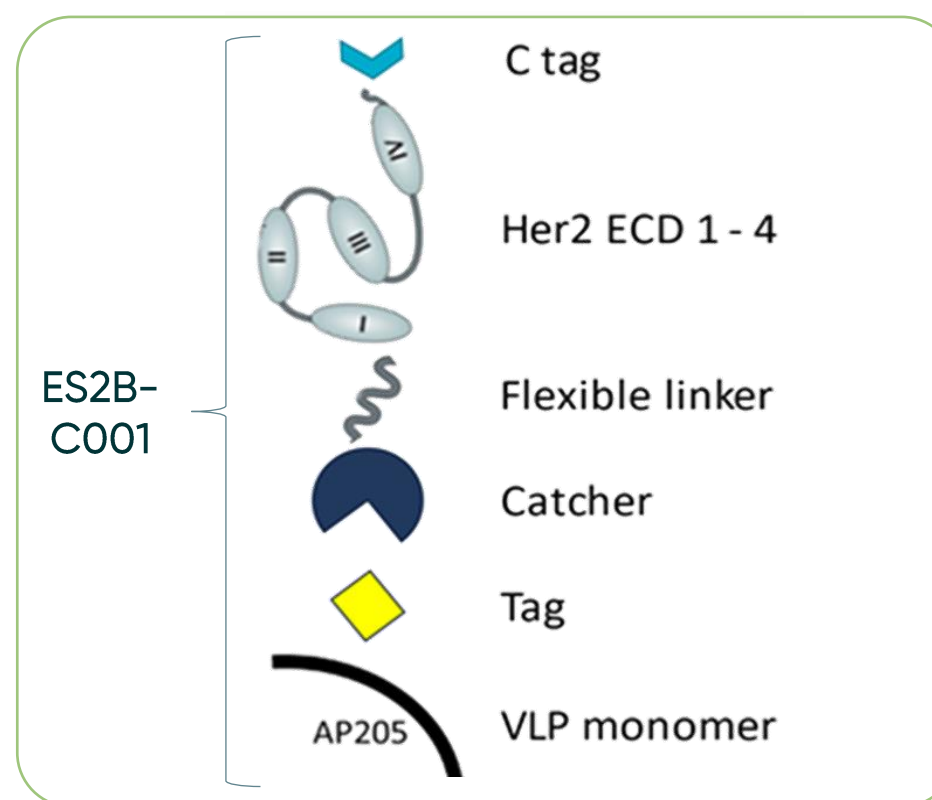
Indication	HER2-expressing cancers, in first instance HER2+ breast cancer (BC)
Delivery method	Intramuscular (i.m.)
Development stage	Preclinical (CTA-enabling)

## Description

Extracellular domain (ECD) of HER2 protein coupled to the Acinetobacter Phage 205 (AP205) capsid virus-like particle (cVLP)

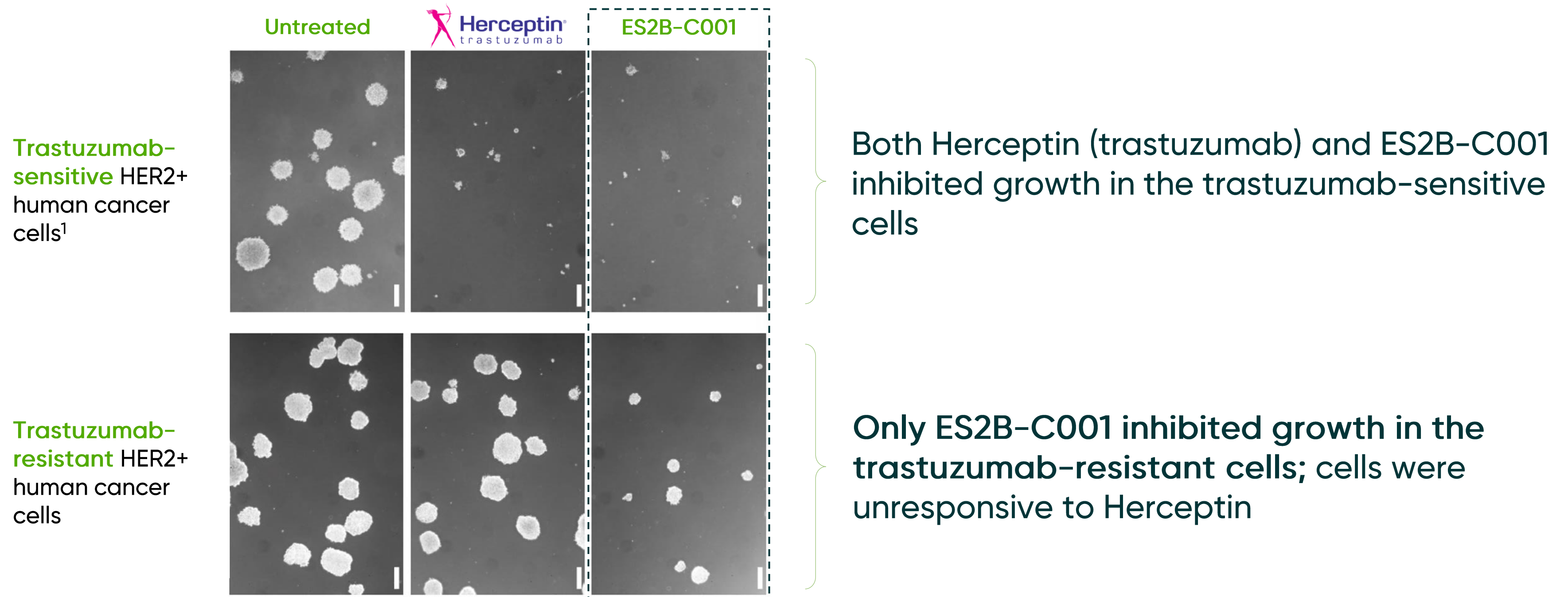
## Benefits vs. commercial mAbs

Polyclonal antibodies generated by ES2B-C001 target numerous epitopes within the ECD of HER2 protein, whereas mAbs target only one epitope within one domain (e.g., I or IV) of HER2 protein



# Overcomes Herceptin resistance

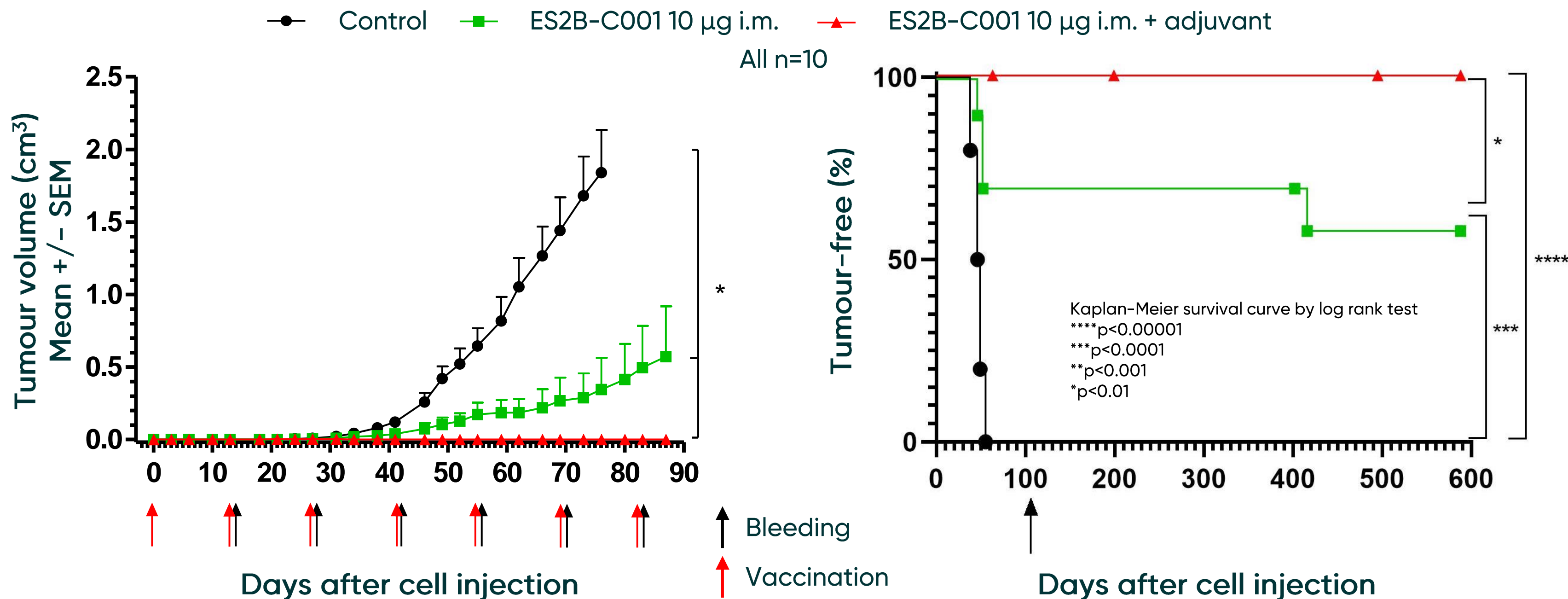
The soft agar human cancer cell growth inhibition assay provides *in vitro* evidence



Note that this data was generated for AdaptVac's predecessor vaccine candidate (HER2-VLP very similar to ES2B-C001)  
<sup>1</sup>Palladini, A. et al. (2018), "Virus-like particle display of HER2 induces potent anti-cancer responses", *Oncolimmunology*, pub. Vol 7, no 3

# Therapeutic vaccination in FVB mice

Completely inhibited QD cells tumour growth in FVB mice



# Advancing our proprietary pipeline

ES2B-C001: Therapeutic HER2+ breast cancer vaccine



## Preclinical Safety

- Study completed in Q2 2024

## CMC (Chemistry, Manufacturing and Controls)

- Drug substance manufacturing completed in May '24
- Drug product manufacturing initiated with completion and quality control expected in summer

## Clinical

- Design of Phase I clinical trial nearly completed including selection of trial manager
- IMPD, Investigator's Brochure, and Protocol nearing completion

## Regulatory

- Clinical trial application (CTA) submission pending completion of the above

# Oncology Scientific Advisory Board

Advised by the leading specialists in oncology and specifically breast cancer



**Dr. Giuseppe Curigliano, MD, PhD**

Associate Professor of Medical Oncology at the University of Milano and the Head of the Division of Early Drug Development at the European Institute of Oncology, Italy (IRCCS). Dr. Curigliano is recognized among the leading experts in the world within the field of HER2 expressing breast cancer and has authored or co-authored more than 650 peer-reviewed scientific papers.



**Dr. Ulrik Lassen, MD, PhD**

Professor at University of Copenhagen, Department of Clinical Medicine. In 2017, he was appointed Head of the Department of Oncology at Copenhagen University Hospital, Rigshospitalet, Denmark. As a Clinical Oncologist he has been working with Phase 1 Oncology trials since 2005 and is ESMO board certified in Medical Oncology. Dr. Lassen has (co-)authored ~300 peer reviewed publications.



**Dr. Javier Cortes, MD, PhD**

Doctor in Medical Oncology, and Head of the International Breast Cancer Centre (IBCC) in Barcelona. Dr. Cortes He is an active member of the Spanish, European, and American Societies of Medical Oncology (SEOM, ESMO, ASCO), and is a member of expert panels that develop the treatment guidelines for metastatic breast cancer. He is the author of more than 380 publications.



**Dr. Michael Andersson, MD, DMSci**

Dr. Andersson is a Clinical Oncologist working as consultant at the Breast Oncology Unit in the Copenhagen University Hospital, Rigshospitalet, Denmark since 1998. He has special interest in HER2-positive breast cancer and has published on and been Principal Investigator in several national and international studies of HER2-positive early and metastatic breast cancer. Dr. Andersson has authored or co-authored more than 140 peer reviewed publications.



**Dr. Daniel Lenihan, MD, FACC, FESC, FIC-OS**

Dr. Lenihan has been active in cardio-oncology, for over 25 years. He has previously held positions at MD Anderson Cancer Center in Houston, Texas, Vanderbilt University in Nashville, Tennessee, and Washington University in St Louis, Missouri. His current research projects include early phase clinical trials in cardio-oncology, heart failure and amyloidosis. Dr. Lenihan serves as editor on several scientific journals and has authored or co-authored more than 210 peer-reviewed scientific papers.



**Dr. Rupert Bartsch, MD**

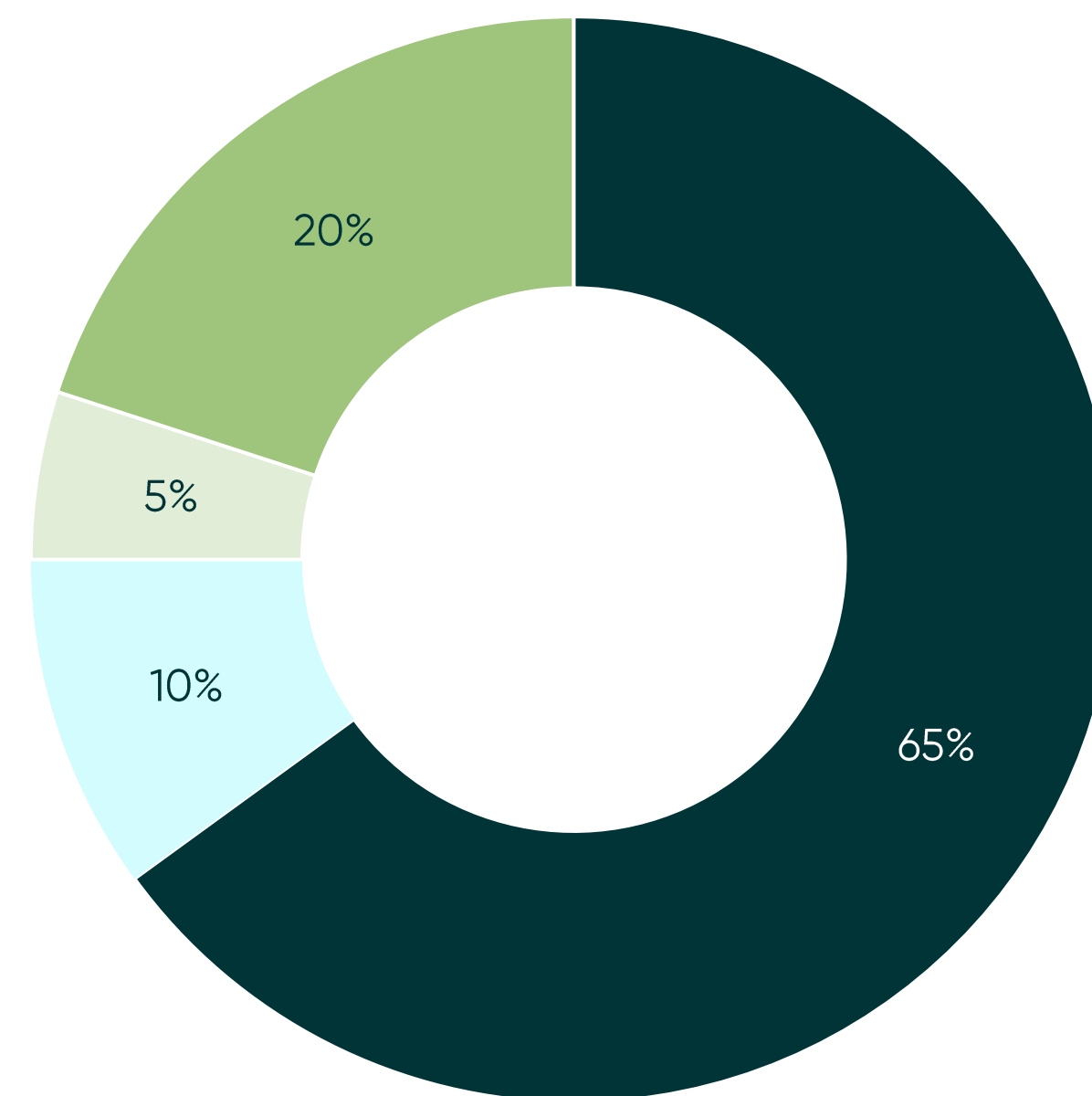
Associate Professor of medicine at the Medical University of Vienna in Austria and serves as the director of the Breast Cancer Programme at the Department of Oncology. Dr. Bartsch has a longstanding clinical and scientific focus on breast cancer and brain metastases. Together with his colleagues, he has published over 150 articles in peer-reviewed journals.

# Rights issue

Subscription period June 12–27, subject to AGM vote

- Amounting to approximately SEK 60 million
- Subscription intentions and guarantee commitments of approximately 50%, or SEK 30 million
- Includes two warrant series, for subscription in Q4 '24 and Q3/Q4 '25
- Use of proceeds:
  - 65%: ES2B-C001 clinical phase initiation & progression
  - 10%: Early preclinical development of a CMV vaccine candidate
  - 5%: Internal costs related to grant-sponsored projects
  - 20%: Working capital incl. discovery pipeline & platform development

Approximate allocation of proceeds





# Investor Relations

investor@  
expres2ionbio.com