Bent U. Frandsen – CEO
December 3, Redeye Life Science Day 2025

# The deadliest threat in women's health deserves a better defence


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STO: EXPRS2

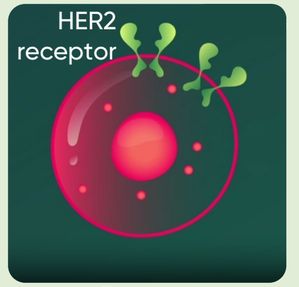
ExpreS2ion Biotech Holding AB
Org. Nr. 559033-3729

# Breast Cancer: The #1 Killer in Women's Health

## Current drugs save lives but leave too many behind

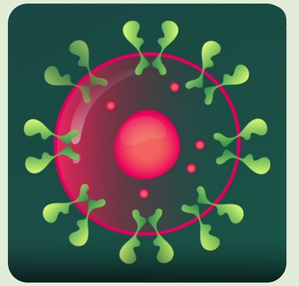
- 2.3 million women diagnosed each year[1] – the most common cancer globally
- 685,000 annual deaths[1] – the leading cause of cancer mortality in women
- HER2-expressing tumours ~80% of cases[2], but resistance to today's HER2 targeting drugs leaves many patients with limited options[3]
- Up to 50% of patients relapse even after the best available HER2 therapies[4]
- Rising incidence in younger women: Breast cancer is now the #1 cancer in women under 50, with incidence up nearly 80% since 1990[5]
- Outlook: By 2040, annual cases are projected to exceed 3 million, and deaths may surpass 1 million – unless new treatments are developed[6]

### HER2 Expression




Breast Cancer Cell

HER2 receptors send signals telling cells to grow and divide



Abnormal HER2+ Breast Cancer Cell (Overexpression)

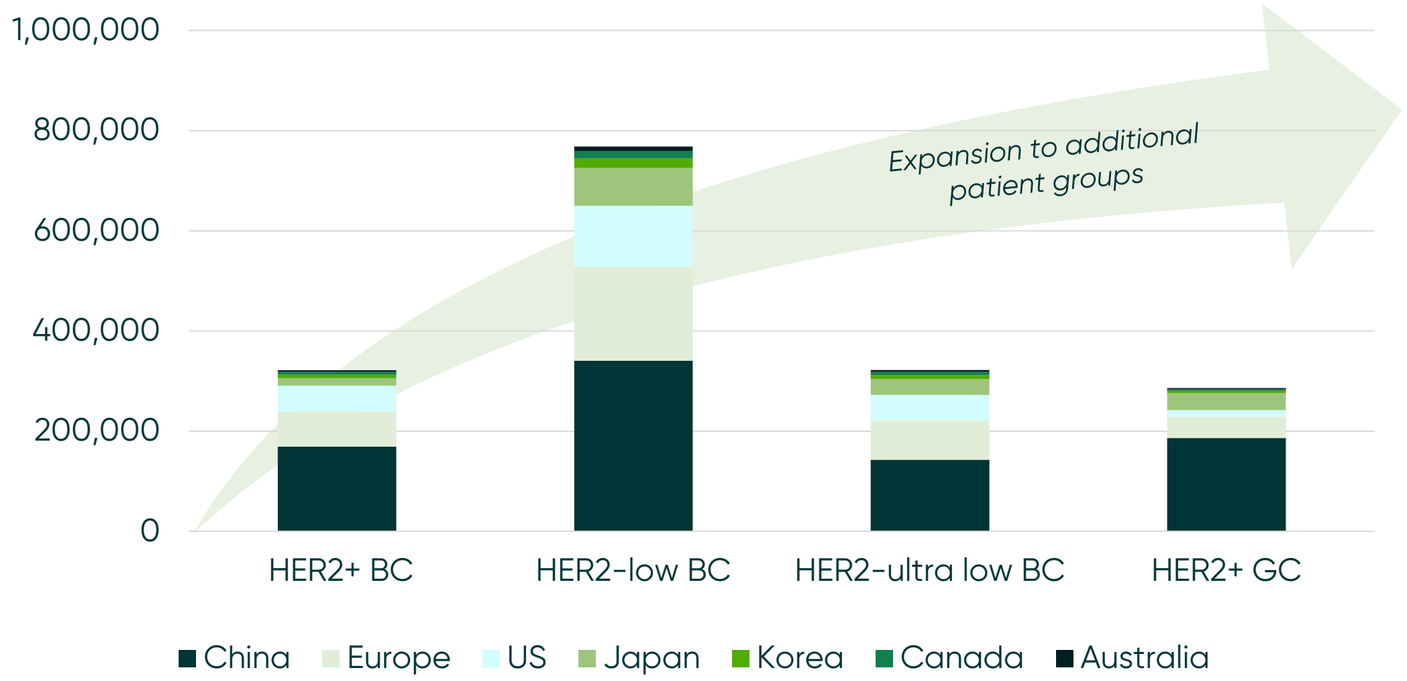
Too many HER2 receptors send more signals, causing cells to grow too quickly

1 WHO/IARC. GLOBOCAN 2020: Breast Cancer Fact Sheet. Global Cancer Observatory, Lyon, France. Available at: https://gco.iarc.fr/
2 Kim J, Harper A, McCormack V, et al. Global patterns and trends in breast cancer incidence and mortality across 185 countries. Nat Med. 2025;31:1154–1162.
3 Wolff AC, et al. Human Epidermal Growth Factor Receptor 2 Testing in Breast Cancer: ASCO/CAP Guideline Update. J Clin Oncol. 2018;36:2105-2122.
4 Escrivá-de-Romaní S, et al. "Resistance to HER2-targeted therapies in breast cancer." Cancer Treat Rev. 2018; 71:28–41.
5 Sung H, et al. "Global burden of early-onset cancer in 2019 and projections to 2030." BMJ Oncology. 2023;2:e000049. doi:10.1136/bmjonc-2022-000049.
6 WHO/IARC. Global Cancer Observatory: Cancer Tomorrow (Projections to 2040). Lyon, France; 2021. Available at: https://gco.iarc.fr/tomorrow/

# Significant Market Opportunity

## ES2B-C001 is a First-in-Class breast cancer immunotherapy, targeting the entire extracellular domain of HER2

### Patient distribution by region and cancer type[1]




BC: Breast Cancer; GC: Gastric Cancer, including gastro-oesophagus junction

- Global market size: The Breast cancer therapy market is **€27B globally with a projected 7% annual growth rate over the next 5 years**[2]
- Proven commercial value of HER2 drugs
  - Herceptin®: USD 1.7B (USD 7B at peak)
  - Herceptin® biosimilars: USD 3.25B[3]
  - Perjeta®: USD 4.1B
  - Enhertu®: USD 2.6B
- Key growth drivers
  - Earlier LoT
  - Low HER2 expression in BC
  - Other HER2 expressing cancers
  - International expansion
- Our addressable opportunity: **ES2B-C001's sales potential > €5B at peak (est.)**

[1] ExpreS2ion Biotechnologies, AstraZeneca (Xu, Wang and Gibson, Isabel. "Epidemiology Data 2024 [Excel file]." AstraZeneca. https://www.astrazeneca.com/content/dam/az/Investor_Relations/Epidemiology-data-2024.xlsx. 20 May 2024),
[2] www.mordorintelligence.com. (n.d.). Breast Cancer Therapy Market | 2024 - 29 | Industry Share, Size, Growth - Mordor Intelligence. [online] Available at: https://www.mordorintelligence.com/industry-reports/breast-cancer-therapeutics-market.
[3] Research and Markets. Adalimumab, Infliximab, Etanercept, Trastuzumab Biosimilars Global Market Report 2024 [Internet]. Dublin: Research and Markets; 2024 [cited 2025 Mar 10]. Available from: https://www.researchandmarkets.com/reports/6044811/adalimumab-infliximab-etanercept-trastuzumab

# Big Pharma Bets Billions on HER2 Therapies

## Multi-billion dollar M&A and licensing deals show strong demand for innovative HER2 treatments

### Key transactions

**2009**

- Roche $47B acquisition of Genetech, including Perjeta (mAb), Herceptin (mAb) and Kadyla (ADC)

**2015**

- Novartis $16B asset swap with GSK, including lapatinib (Tykerb)

**2019**

- AstraZeneca $7B acquisition of Daiichi Sankyo's Enhertu (ADC)

**2019-2021**

- Merck $4B acquisition of Seattle Genetic's Ladiratuzumab Vedotin (ADC) and Tukysa (TKI)
- Pierre Fabre $700M+ acquisition of Puma Biotech's Nerlynx (TKI)

**2023**

- Abbvie's $10B+ acquisition of ImmunoGen, including Elahere (ADC)

### Key metrics

| Year | Product - generic name | Seller | Acquirer | Up-front ($M) | Milestones ($M) | Royalties | Geography |
|---|---|---|---|---|---|---|---|
| 2025 | STX-478 | Scorpion Therapeutics | Eli Lilly | 2,500 | | N/D | Global |
| 2023 | ZN-A-1041 | Zion Pharma | Roche | 70 | 610 | N/D | Global |
| 2023 | Mirvetuximab soravtansine | ImmunoGen | AbbVie | Acquired in ImmunoGen acquisition | | | Global |
| 2020 | Tucatinib | Seattle Genetics | Merck | 210 | 65 | N/D | Asia, ME, LatAM+ |
| 2020 | Ladiratuzumab Vedotin | Seattle Genetics | Merck | 1,600 | 2,600 | N/D | Global |
| 2019-2021 | Nerlynx | Puma Biotech | Pierre Fabre | 114 | 588 | 10-20% | Global ex-US |
| 2019 | Trastuzumab deruxtecan | Daiichi Sankyo | AstraZeneca | 1,350 | 5,550 | 20-25% (est) | Global |
| 2015 | Lapatinib | GlaxoSmithKline | Novartis | Part of $16Bn asset swap deal | | | Global |
| 2009 | Pertuzumab, Trastuzumab and Trastuzumab emtansine | Genentech | Roche | Acquired in Genentech acquisition | | | Global |

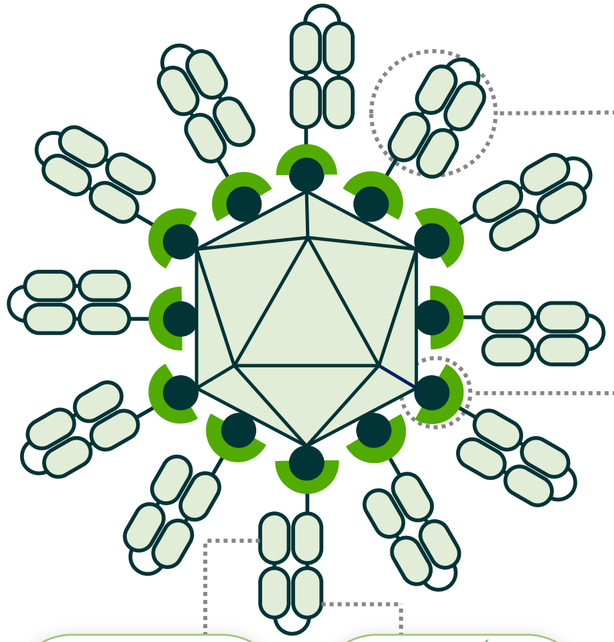
Source: ExpreS2ion and company reports

N/D = Not disclosed


# The Product – A Breakthrough HER2 Immunotherapy

# ES2B-C001 – a First-in-Class BC Vaccine

Based on technology already having clinical PoC and Phase III validation (COVID-19, >4,000 subjects)



HER2 protein
(all 4 extra-cellular domains, i.e. polyclonal effect)

ExpreS2™ platform

Unique high-density display of HER2 in VLP (virus-like particle)
(groundbreaking vaccinology)

VLP technology

Herceptin® trastuzumab
Domain IV

PERJETA® pertuzumab
Domain II

*HER2 directed SoC mAbs target only single epitope*

- VLP concept exists in approved vaccines; HPV vaccine against cervical cancer and HBV vaccine against liver cancer
- Our proven VLP concept has demonstrated safety and superior immunogenicity
- Combinable with Standard of Care (SoC)
- Off-the-shelf, scalable, and cost effective
- OVERCOMES LIMITATIONS OF SoC AND OTHER HER2 VACCINES

mAb = monoclonal antibody treatments
SoC = standard of care
PoC = proof of concept

BC = breast cancer
VLP = virus-like particle
HER2 = human epidermal growth factor receptor 2

HPV = human papilloma virus
HBV = hepatitis B virus

# Preclinical Proof-of-Concept: Robust Immune Response & Tumour Control

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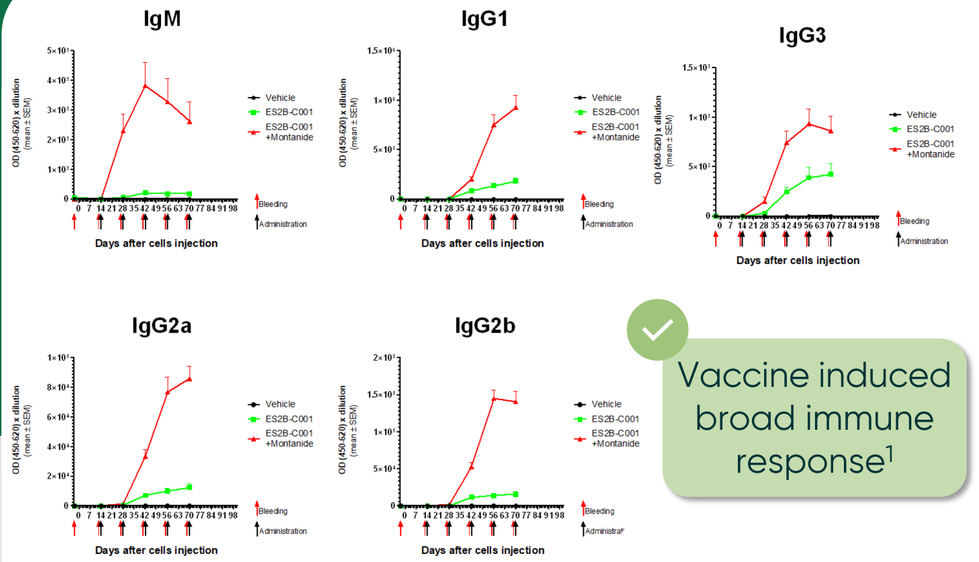
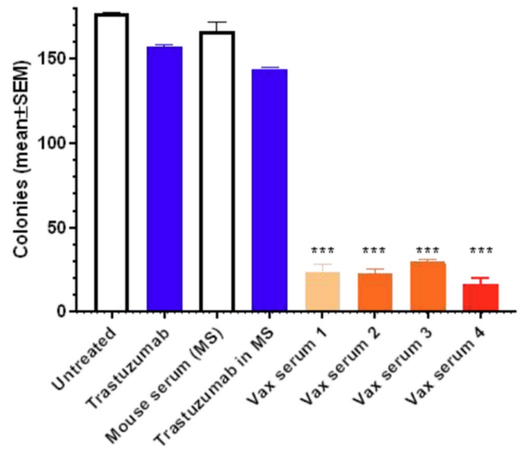
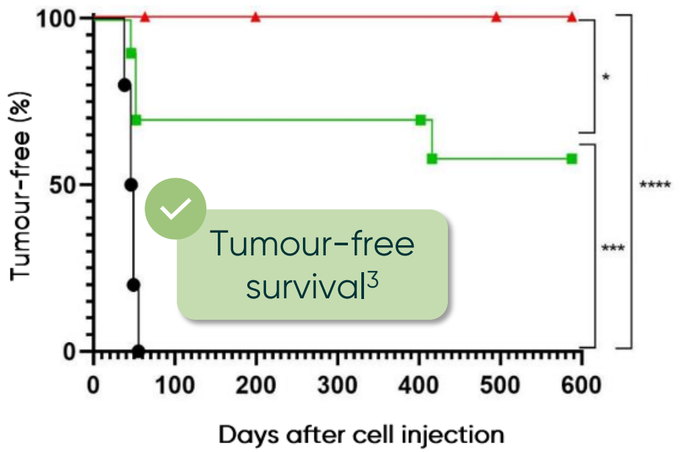


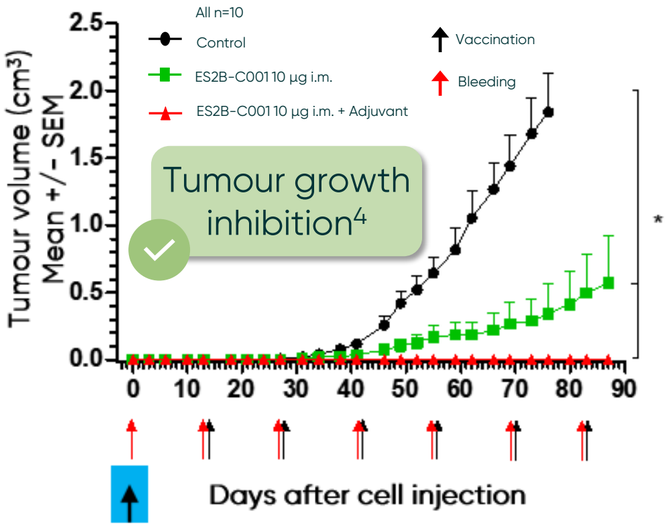

Vaccine induced broad immune response[1]




ES2B-C001 suppressed resistant tumour colony growth[2]




Tumour-free survival[3]




Tumour growth inhibition[4]

- **Broad immune response:** Vaccine induced polyclonal antibodies vs. HER2
- **Tumour growth inhibition:** Suppressed tumour growth in resistant models
- **Metastasis prevention:** Vaccinated animals remained tumour-free while controls developed metastases
- **Durable effect:** Prevented spread in animals

1 HER-2 specific IgM and IgG isotypes elicited by ES2B-C001 therapeutic vaccinations. Each point represents the mean (and SEM) of the specific mouse group. 2 Assay tests ES2B-C001 generated sera's ability to inhibit colony formation of human breast cancer cells. Colonies (diameter > 90 µm) were counted 18–30 days after seeding. 3 **p<0.01 by the log-rank test; Delta16 mice spontaneously develop tumour and have been further inoculated with tumour cells to accelerate tumour development 4 FVB mice (genetically near identical inbred mice) challenged with tumours: Published in Ruzzi, et al., Biomedicines 2022, 10, 2654. Data shown are from animal models; clinical relevance remains to be established.

# ES2B-C001 Phase I trial – Design and Progress

## Trial Design

- Who? ~27 patients with advanced HER2-positive or HER2-low breast cancer (patients who have already been through standard treatments)
- Where? Medical University of Vienna + 2 referral sites
- What's the treatment? A vaccine shot in the muscle, given 5 times, with 3 increasing dose levels to find a safe dose. Some patients may also receive a standard antibody-drug (ADC) alongside, to see if the combo is safe.
- Goals: Primarily to confirm safety. Secondarily to see immune response (anti-HER2 antibodies) and potential tumour response. If safe, we aim to move to Phase Ib once the dose is chosen.
- Timelines: Phase Ia data estimated mid-2026. Phase Ib data estimated end-2026. Timelines subject to patient recruitment, drop-outs and other factors beyond the Company's control.
- Phase I outcome: Confirm recommended Phase II dose

## Trial Progress

| Patient | Dosage* | Doses Received | Study Stage |
|---|---|---|---|
| 1 | 50 µg | (5/5) | Completed + Follow-up |
| 2 | 50 µg | (4/5) | Ongoing |
| 3 | 50 µg | (2/5) | Ongoing |
| 4 | 50 µg | (1/5) | Ongoing |
| 5 | 50 µg | (1/5) | Ongoing |

"Significant immune response" – Sept 2025

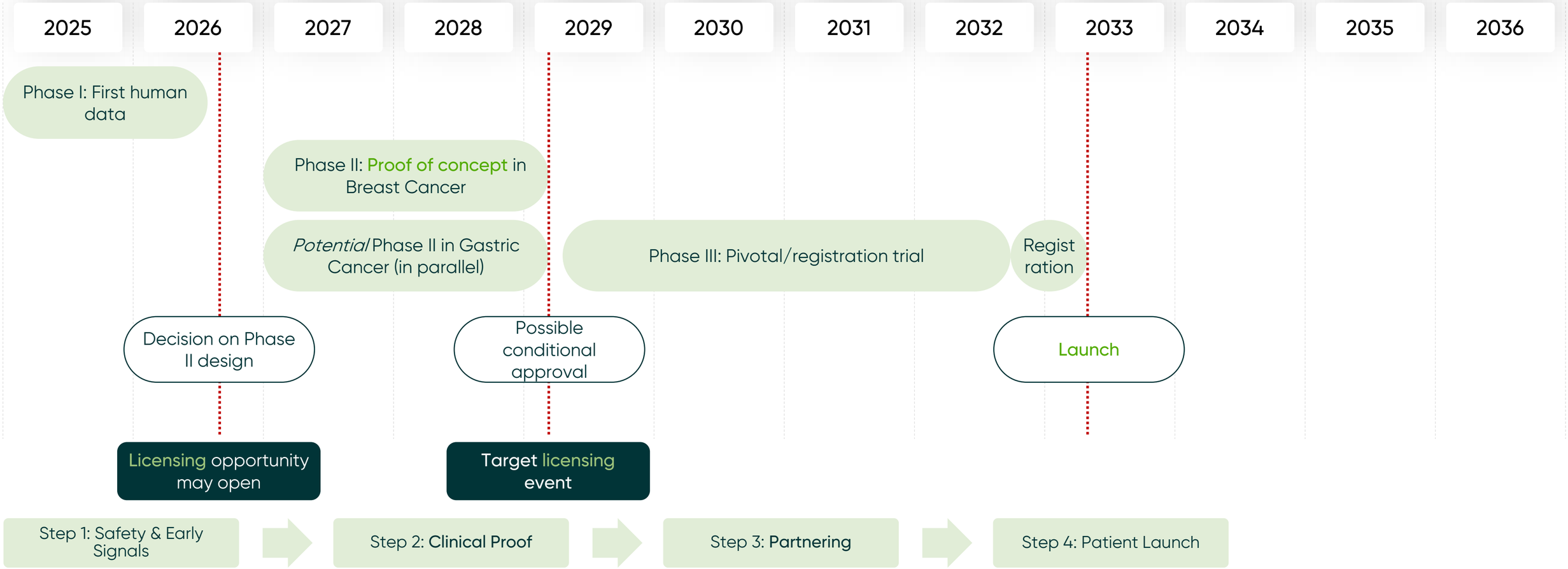
* ES2B-C001 + adjuvant

**Next update:** DSMB #1 (est late-December) to evaluate safety after ≥3 patients receive ≥3 doses and decide on potential dose escalation to 150 µg

DSMB = Data Safety Monitoring Board

# From First Signals to Pharma Deal

## Goal: Out-license when Phase II delivers proof – or earlier if signals are strong




Timelines and trial design subject to regulatory and clinical factors; outcomes may differ from expectations

# Big Shots, Small Waistline

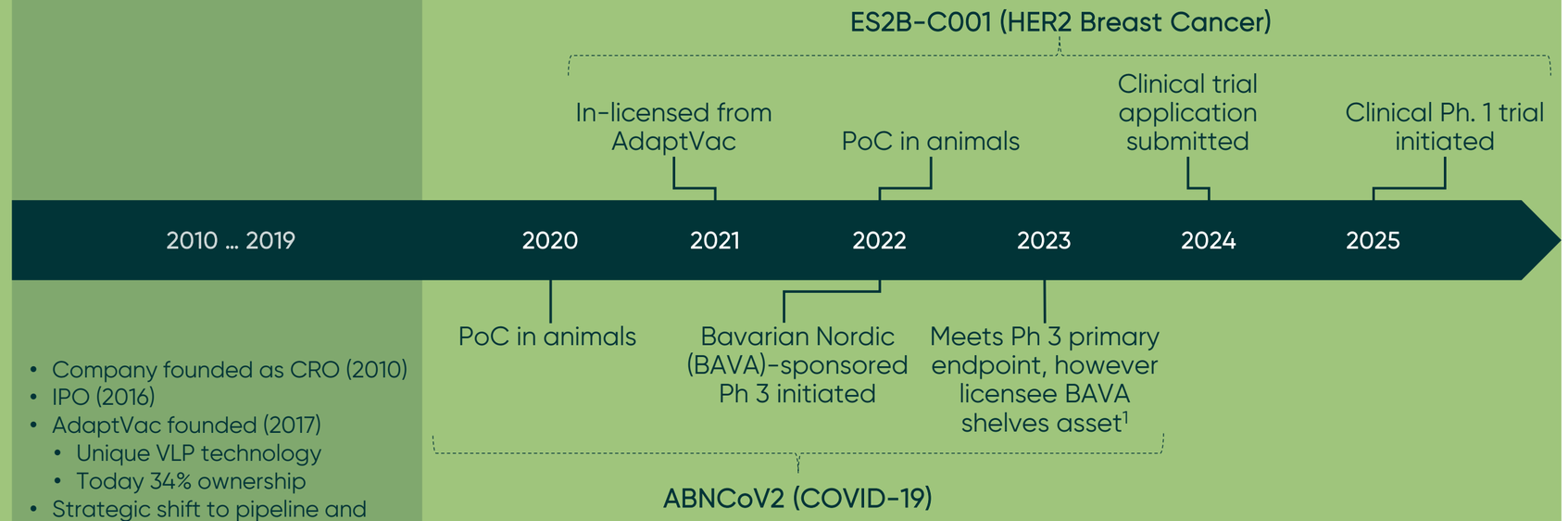
# About ExpreS2ion

## From early contract research organisation (CRO) to primary focus on own pipeline assets

### Founding & Strategy

- Company founded as CRO (2010)
- IPO (2016)
- AdaptVac founded (2017)
  - Unique VLP technology
  - Today 34% ownership
- Strategic shift to pipeline and partnering focus (December 2019)

### Pipeline Projects




### Grants & CRO Business

**Grant Initiatives** - *Grants fund platform development and IP, and can result in license agreements*

- Influenza: Indigo (2020-2025)
- Influenza: MucoVax (2023-2028)
- Nipah: VICI (2023-2027)

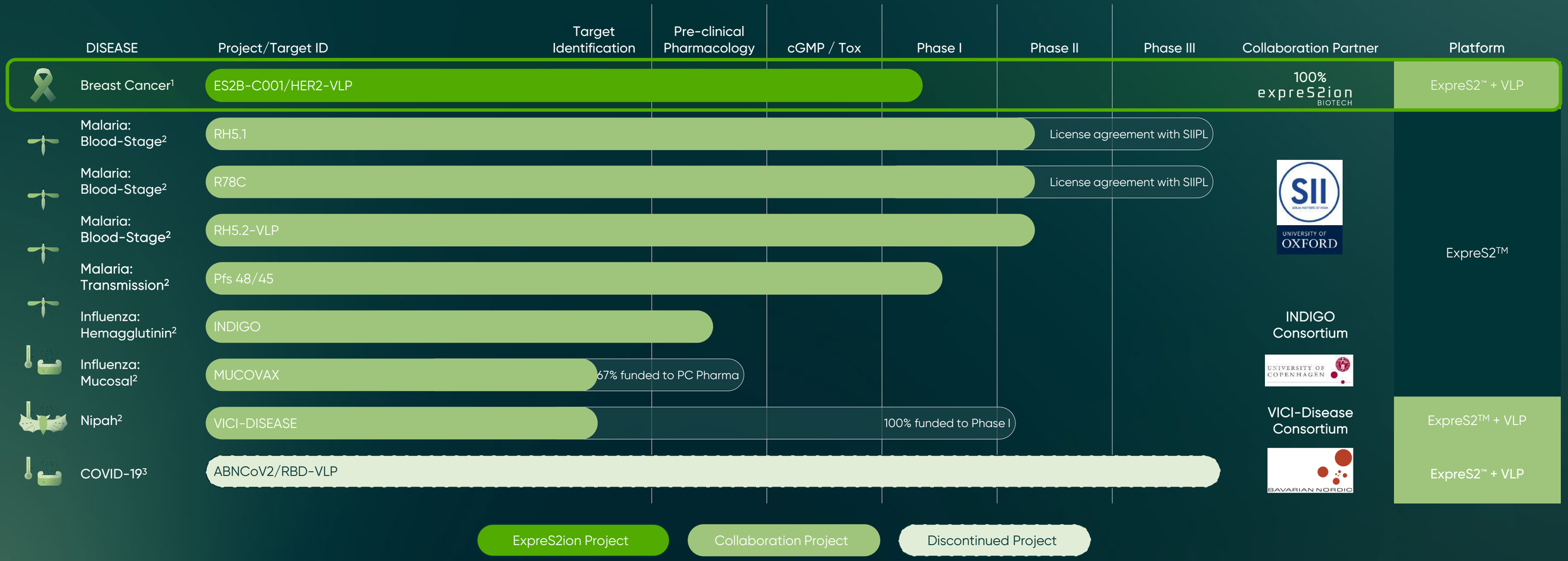
**Sales & Licenses** - *ExpreS2ion leverages its platform to produce licensable pipeline candidates, licenses its platform to other biopharma companies for their own projects, and produces proteins for use by biopharma clients*

- 2014-2025+: ExpreS2 platform
- 2020: ABNCoV2 COVID-19
- 2025: SIIPL ExpreS2 Technology Licensing agreement (malaria)

1 Bavarian Nordic (BAVA) decided in Q3 '23 to discontinue further development of ABNCoV2 for commercial reasons.

# Pipeline overview

## Multiple shots on goal across cancer and infectious diseases, powered by our ExpreS2 platform




All programs rely on ExpreS2-based manufacturing, often combined with AdaptVac's VLP technology

1 ES2B-C001 is fully sponsored by ExpreS2ion
2 Vaccine project funded by non-diluting funding. For RH5.1 and R78C, ExpreS2ion and Serum Institute of India have entered a licensing agreement in Q4 '25 regarding development and commercialisation. For RH5.2-VLP, University of Oxford applies their own VLP technology.
3 ABNC0V2 was fully sponsored by Bavarian Nordic ("BN"), who proved the platform's viability in more than 4,000 people in Phase II and Phase III. BN decided in Q3 '23 to halt the program for commercial reasons.

# Extensive Vaccine Development and Oncology Experience

expreS2ion BIOTECH

Fully capable of executing to phase II POC

## Leadership Team

### Executive Management

**Bent U. Frandsen** CEO
MSc, Copenhagen Business School

30 years life science management, business development and finance experience

**Dr. Max Søgaard** CSO
PhD, University College London

25 years research experience

**Keith Alexander** CFO
MBA, The Wharton School

24 years in finance and management consulting

**Dr. Farshad Guirakhoo** Sr. Strategic Advisor Vaccine R&D
PhD, Medical University of Vienna

35 years broad translational research experience in vaccine development

**Thomas K. Jørgensen** Program & CMC Project Lead
MSc, University of Southern Denmark

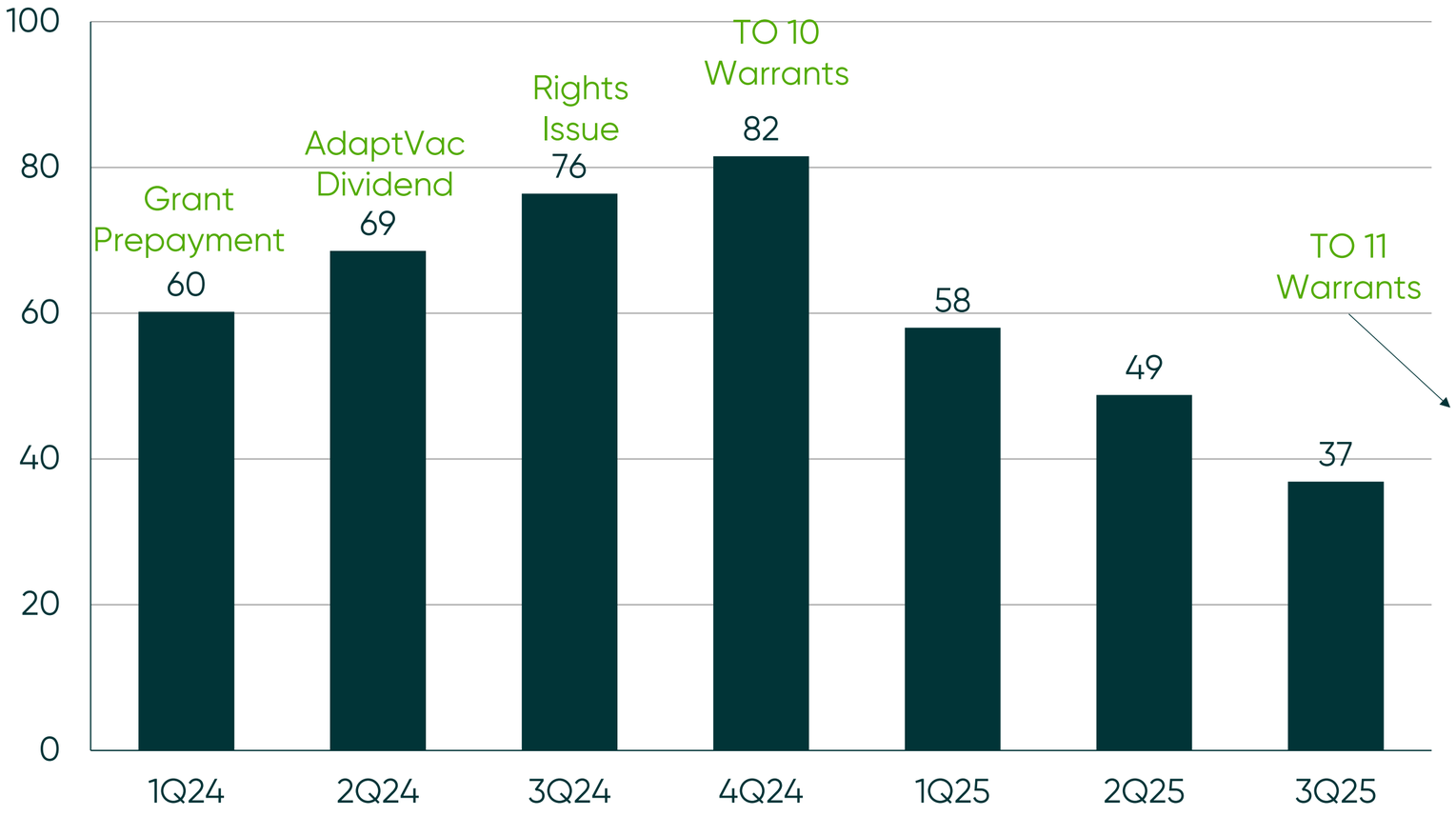
30 years CMC and program management experience

**Dr. Timothy R. Howe, Esq.** Business Development
PhD, OHSU School of Medicine J.D., Univ. of San Diego SOL

35 years experience in licensing & tech transfer

# Cash Balance & Key Drivers (1Q24 – 3Q25)

SEK millions




- Q3 2025 cash (mSEK): 36.9
- Oct 2025 TO 11 gross proceeds (mSEK): 11.8
- Current runway: Q2 2026
- Target milestones: Phase Ia (Q2'26) & Phase Ib (Q4'26)
- Timelines: Subject to recruitment pace, drop-out rates and other factors

# Summary (Why Invest)

- Large unmet medical need
- Differentiated therapeutic approach
- Strong preclinical proof-of-concept
- Catalysts ahead from clinical progress
- Significant market & revenue potential
- Experienced team & partnerships
- Financially prudent with cash for near-term milestones

Timing and success of future events are subject to uncertainties (regulatory approvals, trial results, etc.)

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