ExpreS²ion Biotech Holding AB

Q3 2022 Financial Report

Proteins for Life

17th November 2022

H C Andersen Capital Webinar

Bent U. Frandsen, CEO
Keith Alexander, CFO

EXPRES²ION BIOTECHNOLOGIES

Disclaimer

This presentation does not constitute or form part of any offer or invitation to purchase or subscribe for, or any offer to underwrite or otherwise acquire, any shares or any other securities in ExpreS^{2}ion Biotech Holding AB (the "**Company**"). Neither shall the presentation or any part of it, nor the fact of its distribution or communication, form the basis of, or be relied on in connection with, any contract, commitment or investment decision in relation thereto.

This presentation contains forward-looking statements, which are subject to risks and uncertainties because they relate to expectations, beliefs, projections, future plans and strategies, anticipated events or trends and similar expressions concerning matters that are not historical facts. All statements other than statements of historical fact included in this presentation are forward-looking statements. Forward-looking statements give Company's current expectations and projections relating to its financial condition, results of operations, plans, objectives, future performance and business. These statements may include, without limitation, any statements preceded by, followed by or including words such as "target," "believe," "expect," "aim," "intend," "may," "anticipate," "estimate," "plan," "project," "will," "can have," "likely," "should," "would," "could" and other words and terms of similar meaning or the negative thereof. Such forward-looking statements involve known and unknown risks, uncertainties and other factors, which may cause the actual results, performance or achievements of Company or the industry in which it operates, to be materially different than any future results, performance or achievements expressed or implied by such forward-looking statements. Given these risks, uncertainties and other factors, recipients of this presentation are cautioned not to place undue reliance on these forward-looking statements. The forward-looking statements referred to above speak only as at the date of the presentation. Company will not undertake any obligation to release publicly any revisions or updates to these forward-looking statements to reflect future events, circumstances, anticipated events, new information or otherwise except as required by law or by any appropriate regulatory authority.

The information included in this presentation may be subject to updating, completion, revision and amendment and such information may change materially. No person, including Company and its advisors, is under any obligation to update or keep current the information contained in this presentation and any opinions expressed in relation thereto are subject to change without notice. Neither Company nor any of its owners, affiliates, advisors or representatives (jointly the "Disclosers") make any guarantee, representation or warranty, express or implied, as to the accuracy, completeness or fairness of the information and opinions contained in this presentation, and no reliance should be placed on such information. None of the Disclosers accept any responsibility or liability whatsoever for any loss howsoever arising from any use of this presentation or its contents or otherwise arising in connection therewith.

By attending this presentation or by accepting any copy of this document, you agree to be bound by the foregoing limitations.

Investment Highlights

Key player in advanced protein sciences, with deep pipeline of novel vaccines addressing high-value markets

High-potential pipeline of key focus within infections diseases and oncology, backed up by strong intellectual property rights

Vaccine development platform with track record and partner validation. Now clinical Phase III-stage. +500 proteins produced while posting +90% success rate

Global vaccine market rapidly growing, from USD 33bn (2019) to USD 187bn (2021), corresponding to 460% growth

ExpreS²ion is advancing towards key catalysts during 2022-23, further de-risking the company's pipeline. COVID-19 vaccine clinical Phase III initiation in Q3 2022. Progressing towards rolling submission in 2023.

Management Team

>200 years of professional skills and experience from the *life sciences* industry

Management

- **Bent U. Frandsen**, Chief Executive Officer
- **Keith Alexander**, Chief Financial Officer
- **Dr. Max Soegaard**, VP R&D and Technology
- **Dr. Mette Thorn**, VP Preclinical Development
- **Dr. Mattis F. Ranthe**, Chief Medical Officer

Board of Directors

- **Dr. Martin R. Jensen**, Chairman & Co-founder
- **Jakob Knudsen**, Member of the Board
- **Dr. Karin Garre**, Member of the Board
- **Sara Sande**, Member of the Board

New Scientific Advisory Board

Key Opinion Leaders (KOLs) providing clinical advise on our oncology development programme

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. 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. 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. 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. 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. 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.

Deep Pipeline for Value Creation

Market Potential	DISEASE	Project/Target	Development Progress: Discovery / Pre-clinical Pharmacology / cGMP / Tox / Phase I / Phase II / Phase III	Partner/Funding
>€30 billion[1]	Coronavirus	ABNCoV2/SARS-CoV-2 cVLP	Ph. III initiated	adaptVAC, BAVARIAN NORDIC, European Commission PREVENT-nCoV
>€10 billion[2]	Breast Cancer	ES2B-C001/HER2 cVLP	Progressed into cGMP/Tox	100% ExpreS²ion
>€4 billion[3]	Influenza	Hemagglutinin		European Commission INDIGO
>€0.4 billion[3]	Malaria:			
	1: Blood-Stage	RH5		European Commission MultiViVax, THE JENNER INSTITUTE, UNIVERSITY OF OXFORD
	2: Blood-Stage	RH5-VLP		wellcome trust, THE JENNER INSTITUTE, UNIVERSITY OF OXFORD
	3: Transmission	Pfs 48/45		European Commission OptimalVax, THE JENNER INSTITUTE, UNIVERSITY OF OXFORD
	4: Placenta-Borne	VAR2CSA		UNIVERSITY OF COPENHAGEN, EBERHARD KARLS UNIVERSITÄT TÜBINGEN
	5: Blood-Stage	CYRPA complex		Walter+Eliza Hall Institute of Medical Research, DISCOVERIES FOR HUMANITY

Note: AdaptVac is a joint venture between ExpreS²ion (34% owned) and NextGen Vaccines (66% owned)

[1] 2024 estimate from Evaluate Pharma for top 10 products and other, as of 9 June 2022
[2] Global Data, 2022, for HER2+ breast cancer
[3] Company estimate

Significant events in 2022

BREAST CANCER

EXPRES²ION BIOTECHNOLOGIES

The Most Common Cancer

1 in 8

women will be diagnosed with invasive breast cancer in her lifetime

~25%

have overexpression of HER2 receptors, associated with more aggressive tumors and reduced survival[2]

685,000

deaths worldwide in 2020 due to breast cancer[1]

1. Breast Cancer Research Foundation (https://www.bcrf.org/breast-cancer-statistics-and-resources. 2. Mitri Z et al. The HER2 Receptor in Breast Cancer: Pathophysiology, Clinical Use, and New Advances in Therapy. Chemother Res Pract. 2012; 2012: 743193)

EXPRES²ION BIOTECHNOLOGIES

Breast Cancer Overview

The ES2B-C001 vaccine can offer significant benefits compared to current treatment options

Monoclonal antibodies are the cornerstone of treatment for HER2+ breast cancer (>USD 11bn sales)[1]

- Target the HER2 receptor on tumor cells to reduce proliferation and induce tumor cell destruction

Herceptin® trastuzumab

PERJETA® pertuzumab

Serious drawbacks exist with these therapies[2]

- **Resistance** to monoclonal antibodies may develop
- **Potential for cardiac toxicity**
- **Repeated administration required**: 28-day half-life requires administration every 3rd week until remission or resistance develops, costs USD 30-50k

ExpreS²ion's HER2-targeted vaccine approach offers potential to overcome some of the drawbacks through *internal polyclonal antibody production*

[1] GlobalData, 2022
[2] Pallerla et al. 2021. Cancer Vaccines, Treatment of the Future: With Emphasis onHER2-Positive Breast Cancer, International Journal of Molecular Sciences.; Krasniqi et al. 2019. Immunotherapy in HER2-positive breastcancer: state of the art and future perspectives, Journal of Hematology & Oncology.

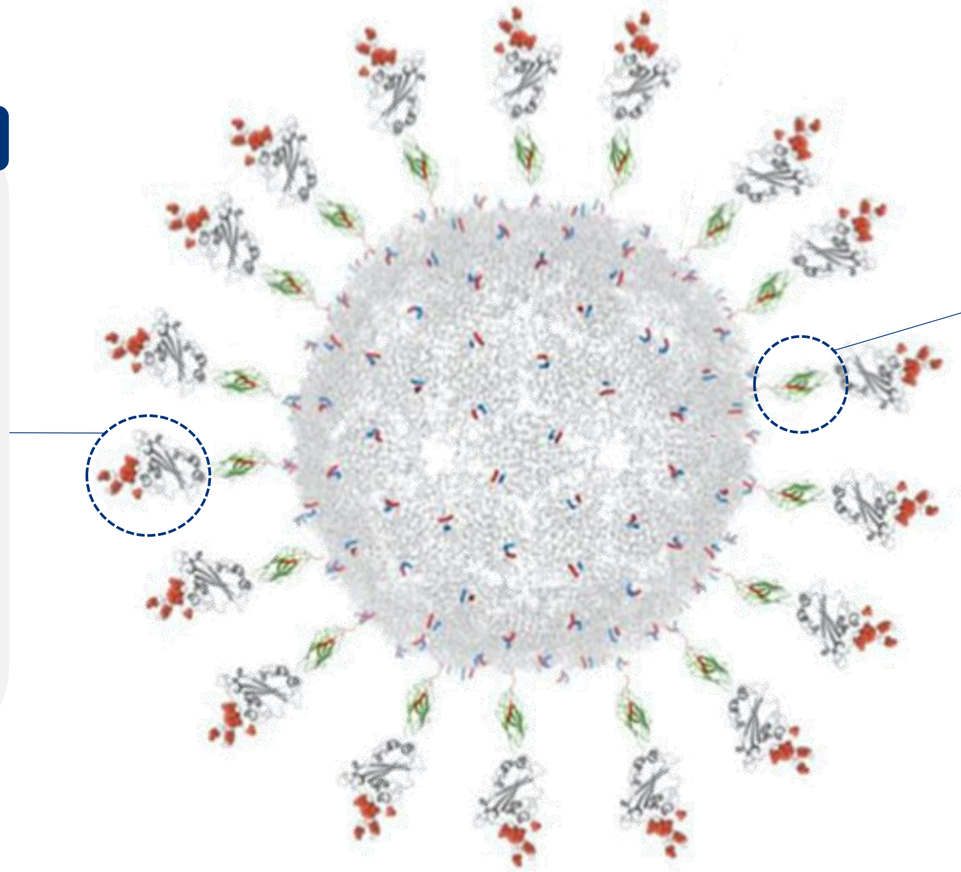
Unique Technology Platforms

Our HER2 vaccine ES2B-C001 combines a highly immunogenic antigen with unique presentation technology

ExpreS² platform

- Combines S2 cells with patented expression vectors (add a specific gene into a target cell and command the cell to produce the gene encoded protein), adapted culture agents and reagents (stimulating cell growth)
- Produces the complex surface proteins (antigens), like HER2, which are critical to immune system recognition and response

100% ownership

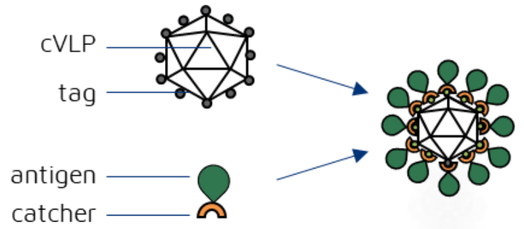


ExpreS² protein (antigen) combined with AdaptVac's cVLP containing no viral genetic material causing an immune reaction

Particle (VLP) technology

- AdaptVac's proprietary virus-like particles (VLP) technology securely attaches our proteins to the surface of a capsid (outer protein protective shell of a virus), mimicking a virus to elicit an immune response

34% ownership



cVLP: Capsid Virus Like Particle

[1] Schneider I (1972). "Cell Lines Derived from Late Embryonic Stages of *Drosophila melanogaster*". *J. Embryol. Exp. Morphol.* 27: 363–365. *Drosophila melanogaster* is also known as the fruit fly.

Notes: ExpreS²ion Biotech founders invented an Improved Vector System derived from S2 cells; granted patent until 2032 (US); glyco-engineered S2 cells pending patents until 2040.
The ExpreS2™ platform is 100% owned by ExpreS²ion. The VLP technology applied in ES2B-C001 and ABNCoV2 is 100% owned by AdaptVac, which ExpreS²ion owns 34% of.

BREAST CANCER

EXPRES²ION BIOTECHNOLOGIES

New Publication Supports ES2B-C001

biomedicines

MDPI

Article

Prevention and Therapy of Metastatic HER-2⁺ Mammary Carcinoma with a Human Candidate HER-2 Virus-like Particle Vaccine

Francesca Ruzzi [1,†], Arianna Palladini [1,2,†], Stine Clemmensen [3], Anette Strøbæk [3], Nicolaas Buijs [3], Tanja Domeyer [3], Jerzy Dorosz [3], Vladislav Soroka [3], Dagmara Grzadziela [3], Christina Jo Rasmussen [3], Ida Busch Nielsen [3], Max Soegaard [3], Maria Sofia Semprini [1], Laura Scalambra [1], Stefania Angelicola [1], Lorena Landuzzi [4], Pier-Luigi Lollini [1,*,‡] and Mette Thorn [3,‡]

[1] Alma Mater Institute on Healthy Planet and Department of Experimental, Diagnostic and Specialty Medicine (DIMES), University of Bologna, 40126 Bologna, Italy
[2] Department of Molecular Medicine, University of Pavia, 27100 Pavia, Italy
[3] ExpreS2ion Biotechnologies, SCION-DTU Science Park, 2970 Hørsholm, Denmark
[4] Experimental Oncology Laboratory, IRCCS Istituto Ortopedico Rizzoli, 40136 Bologna, Italy
* Correspondence: pierluigi.lollini@unibo.it; Tel.: +39-051-2094786
† These authors contributed equally to this work.
‡ Pier-Luigi Lollini and Mette Thorn jointly supervised this work.

Abstract: Vaccines are a promising therapeutic alternative to monoclonal antibodies against HER-2⁺ breast cancer. We present the preclinical activity of an ES2B-C001, a VLP-based vaccine being developed for human breast cancer therapy. FVB mice challenged with HER-2⁺ mammary carcinoma cells QD developed progressive tumors, whereas all mice vaccinated with ES2B-C001+Montanide ISA 51, and 70% of mice vaccinated without adjuvant, remained tumor-free. ES2B-C001 completely inhibited lung metastases in mice challenged intravenously. HER-2 transgenic Delta16 mice developed mammary carcinomas by 4–8 months of age; two administrations of ES2B-C001+Montanide prevented tumor onset for >1 year. Young Delta16 mice challenged intravenously with QD cells developed a mean of 68 lung nodules in 13 weeks, whereas all mice vaccinated with ES2B-C001+Montanide, and 73% of mice vaccinated without adjuvant, remained metastasis-free. ES2B-C001 in adjuvant elicited strong anti-HER-2 antibody responses comprising all Ig isotypes; titers ranging from 1–10 mg/mL persisted for many months. Antibodies inhibited the 3D growth of human HER-2⁺ trastuzumab-sensitive and -resistant breast cancer cells. Vaccination did not induce cytokine storms; however, it increased the ELISpot frequency of IFN-γ secreting HER-2-specific splenocytes. ES2B-C001 is a promising candidate vaccine for the therapy of tumors expressing HER-2. Preclinical results warrant further development towards human clinical studies.

Keywords: breast cancer; vaccine; virus-like particles (cVLP); HER-2; tyrosine kinase receptor; target therapies; cancer immunotherapy; metastasis

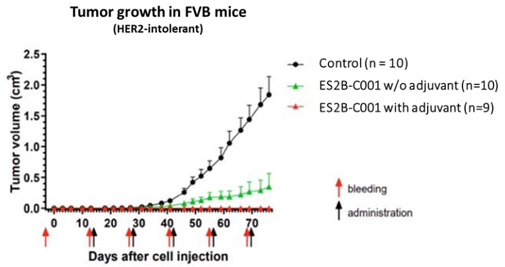
Citation: Ruzzi, F.; Palladini, A.; Clemmensen, S.; Strøbæk, A.; Buijs, N.; Domeyer, T.; Dorosz, J.; Soroka, V.; Grzadziela, D.; Rasmussen, C.J.; et al. Prevention and Therapy of Metastatic Her-2⁺ Mammary Carcinoma with a Human Candidate Her-2 Virus-like Particle Vaccine. *Biomedicines* **2022**, *10*, 2654. https://doi.org/10.3390/biomedicines10102654

Academic Editor: Satoshi Wada

Received: 31 August 2022
Accepted: 17 October 2022
Published: 20 October 2022

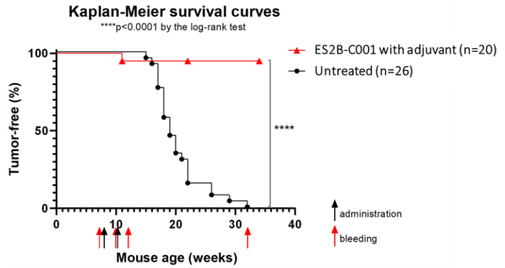
Preclinical Proof-of-Concept

Effectively inhibited tumor development



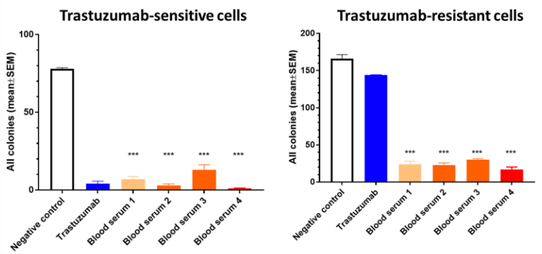
- Two weeks after the inoculation of tumor cells, the first vaccine administration was given. Repeated every 2nd week during the study
- **ES2B-C001 formulated in an adjuvant totally blocks tumor development. ES2B-C001 without adjuvant partly blocks tumor development** and if tumors develop, growth is significantly inhibited

Prevented tumor development with 95% efficiency



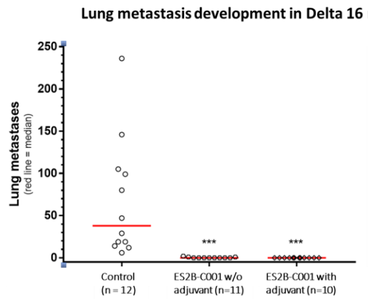
- At mouse age 6-8 weeks, 2 vaccinations with 2 weeks interval were administered to Delta16 mice
- **Two vaccinations prevented tumor development with 95% efficiency** as compared to a control group, where all mice spontaneously developed tumors

Overcomes trastuzumab-resistance of tumors *in vitro*



- *In vitro* PoC data in a growth inhibition assay: Blood serum from ES2B-C001-vaccinated mice **significantly inhibited the growth of HER2+ trastuzumab-sensitive as well as trastuzumab-resistant human tumor breast cancer cells**

Inhibited tumor development in delta16 HER2 tg mice



- One week after the intravenous (i.v.) injection of HER2+ tumor cells, the first vaccine administration was given. Repeated every 2nd week during the study
- **All mice vaccinated with E2SB-C001 with adjuvant were tumor-free**
- 73% of mice (8/11) vaccinated with ES2B-C001 without adjuvant were tumor-free, the remaining had 1-2 tumor lung nodules

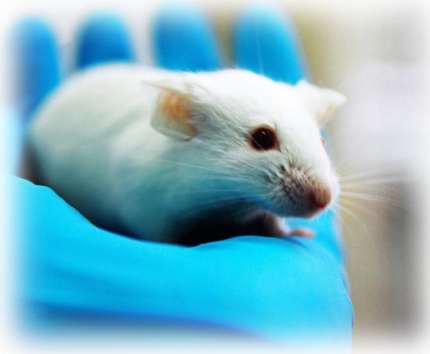
Reference: F. Ruzzi *et al* (2022): "Prevention and Therapy of Metastatic HER-2+ Mammary Carcinoma with a Human Candidate HER-2 Virus-like Particle Vaccine", **Biomedicines**. https://www.mdpi.com/2227-9059/10/10/2654

EXPRES²ION BIOTECHNOLOGIES

Progression as Planned

Important steps as ES2B-C001 is moving closer to the planned clinical Phase I trial in 2024

- GMP Manufacturing
  - ✓ GMP (Good Manufacturing Practice) Manufacturers selected and Work Order Statements executed
  - ✓ ExpreS²ion's processes for manufacturing of material for HER2 antigen and VLP are transferred to the contract manufacturers
  - Development of GMP manufacturing processes are progressing as planned
- Preclinical Safety
  - ✓ GLP (Good Laboratory Practice) CRO (Contract Research Organisation) selected and Master Service Agreement executed
  - ✓ In accordance with feedback from DKMA (Danish Medicines Agency) preclinical safety studies have been planned in two species (1-month short-term testing in a rodent and non-rodent model) as well as long-term general GLP study in NHP (non-human primates)
  - The *in vivo* part of the short-term rodent safety study has been carried out, and the final report of the study is expected in the beginning of 2023
  - GLP study in NHP in 2023 with data expected mid-year
- Clinical trial application planned for submission end 2023



CORONAVIRUS

ABNCoV2 COVID-19 Vaccine

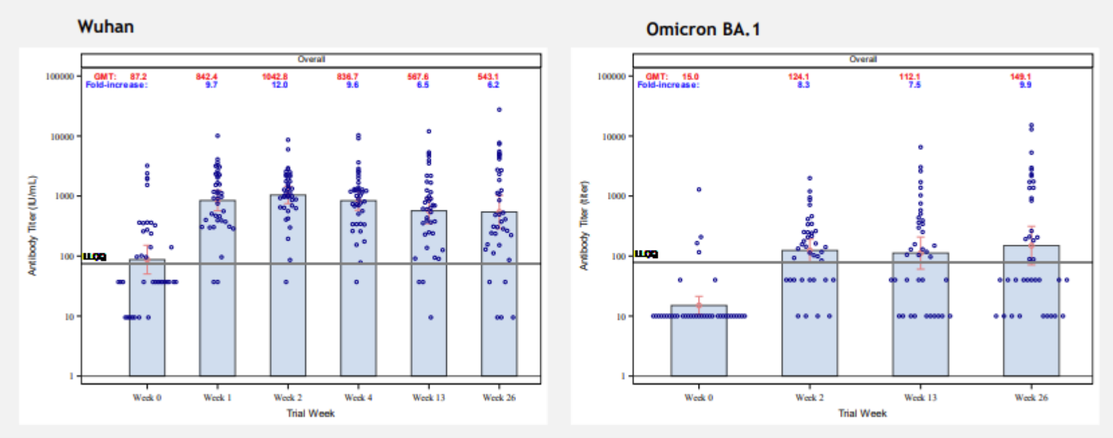
Bavarian Nordic completed the Phase II study, and initiated the Phase III study

Phase II results confirms ABNCoV2 as universal booster

- Evaluation as a booster vaccine in ~100 individuals with existing immunity. Study also assessed neutralizing immune responses against circulating variants and durability.
  - Strong boosting effect across all variants of concern
  - Level of neutralizing antibodies at levels reported to be associated with high level of protection (>90%)[1]
  - Level of neutralizing antibodies lowest for beta and omicron

Announced 17 October 2022

- **Phase II six-month follow up data in 41 out of 103 subjects demonstrated durable antibody levels across variants of concern**



Bavarian Nordic data published 9th November 2022

Phase III study initiated in USA and Europe

- 4,000 previously vaccinated subjects who will receive a booster vaccination with ABNCoV2 or an mRNA-based vaccine, aiming to demonstrate non-inferiority of ABNCoV2 to the licensed mRNA vaccine
- Manufacturing of vaccine bulk for the trial has been completed, filling now ongoing at BN's own manufacturing line

Trial initiated 2nd September 2022 with initial data read-out expected early 2023

Bavarian Nordic plans a rolling submission in 2023 and subject to approval, launch

1) P. B. Gilbert et al., Science 10.1126/science.abm3425 (2021)

Partnership with Bavarian Nordic

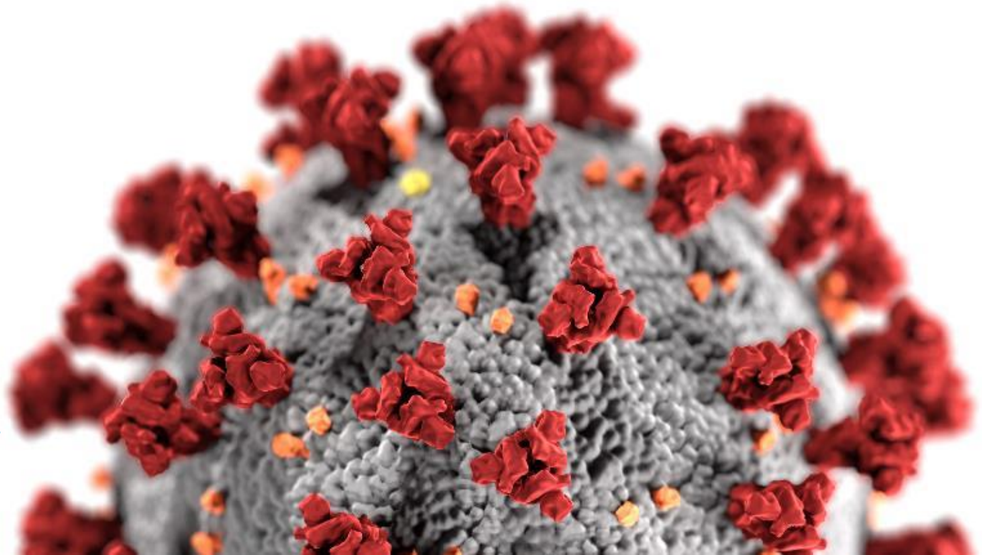
ABNCoV2 is already out-licensed with near-term revenue streams supporting ExpreS²ion

AdaptVac receive from Bavarian Nordic

- EUR 4 million upfront (paid in July 2020)
- Up to EUR 136 million in development and sales milestones
- Single- to double-digit-% royalties of Bavarian revenues

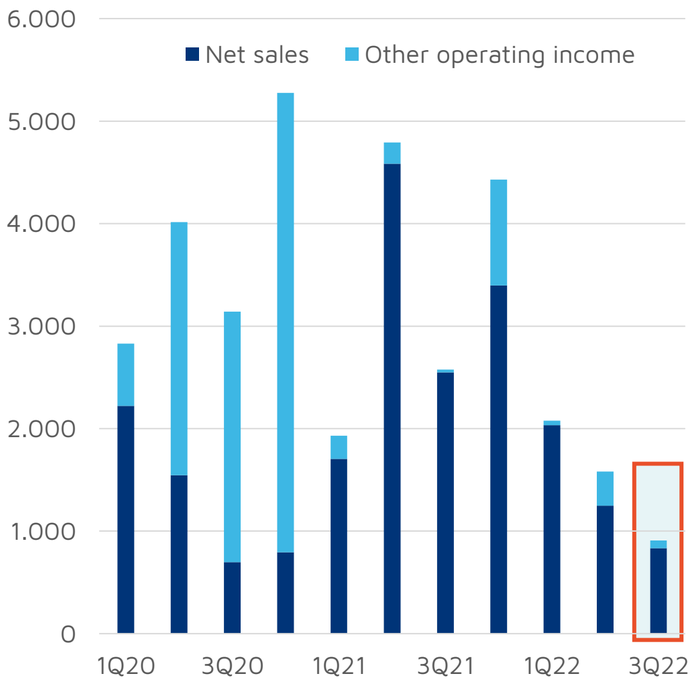
ExpreS²ion receive from AdaptVac

- 34% ownership of AdaptVac
- Up to EUR 2 million in commercial milestone payments
- Lower double-digit percentage of AdaptVac royalties



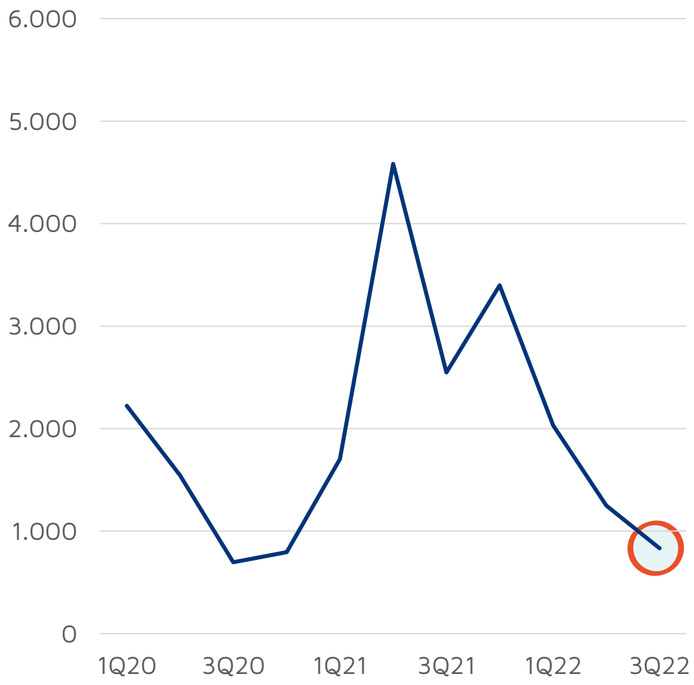
Operating Income

Operating income, SEK `000s



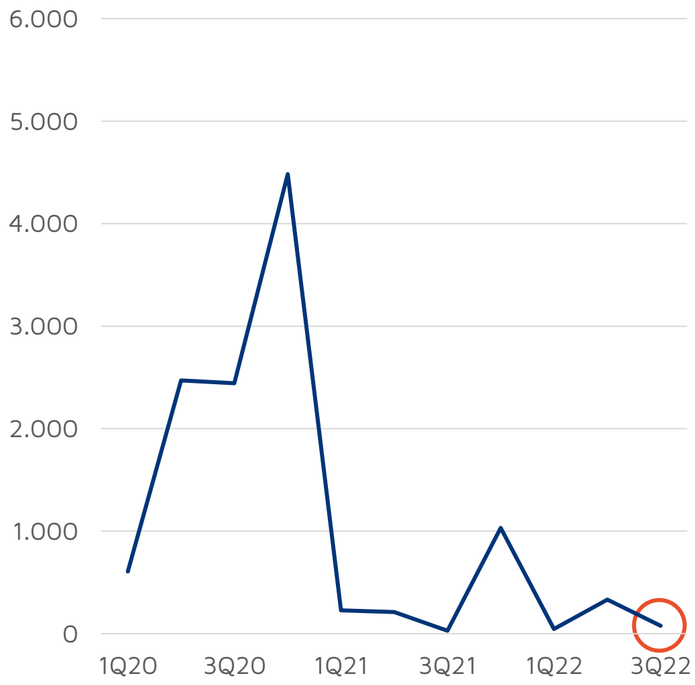
=

Net sales, SEK `000s



+

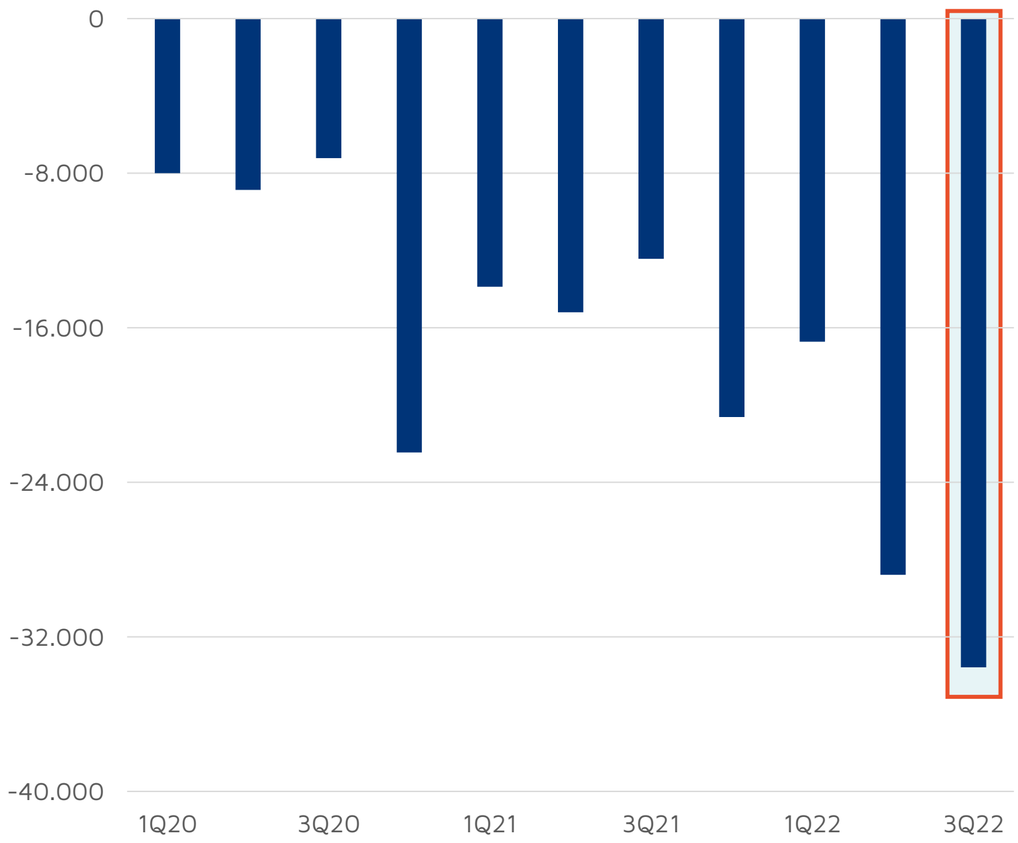
Other operating income, SEK `000s



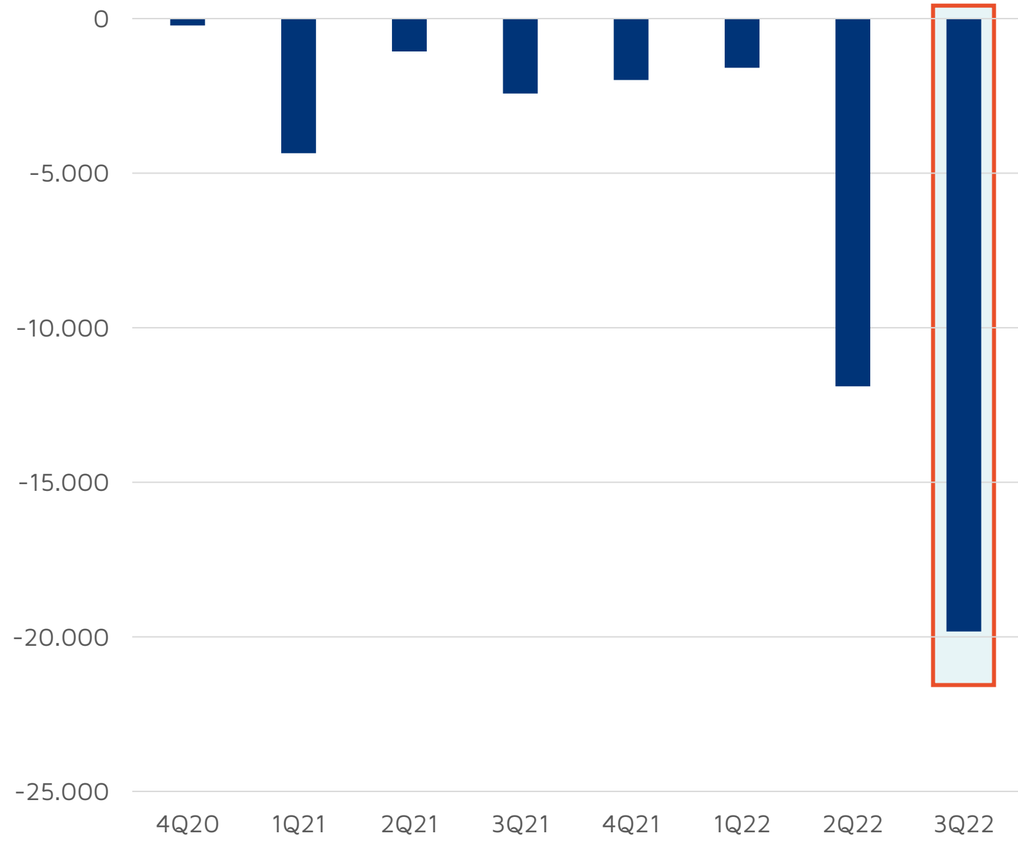
SEK `000s	2022	2021	Growth
3Q	909	2,576	-65%
Year-to-date	4,567	9,300	-53%

Operating Costs

Operating costs, SEK `000s

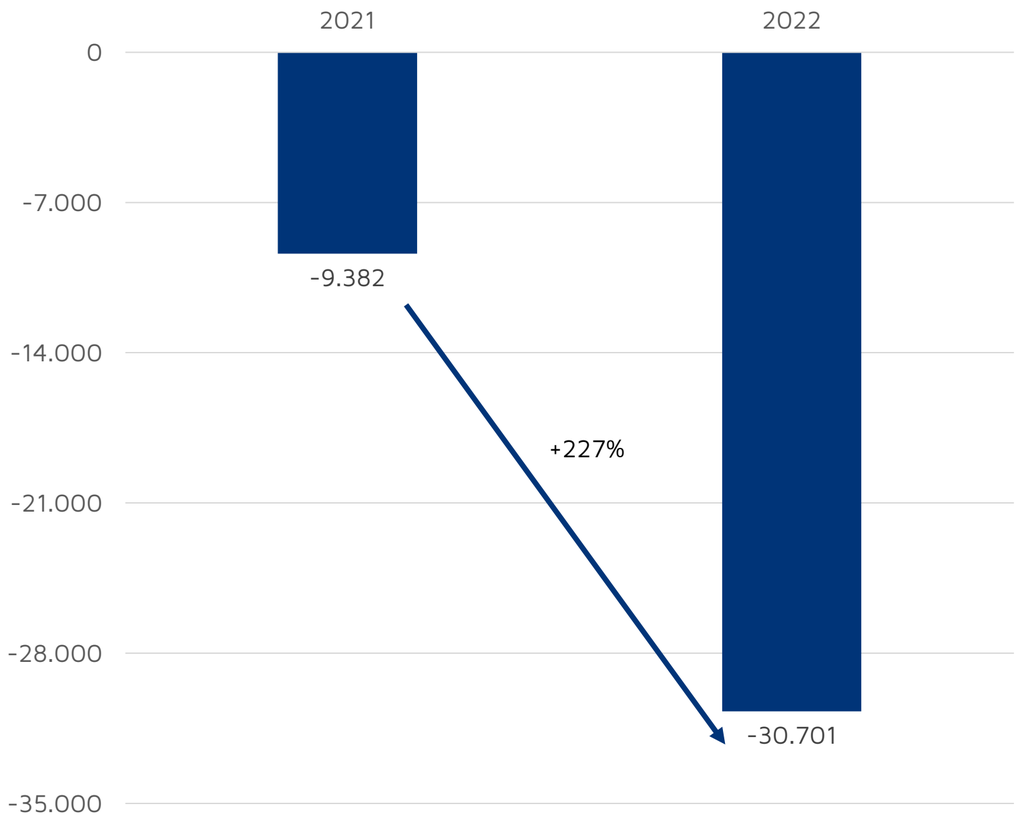


R&D costs (external), SEK `000s

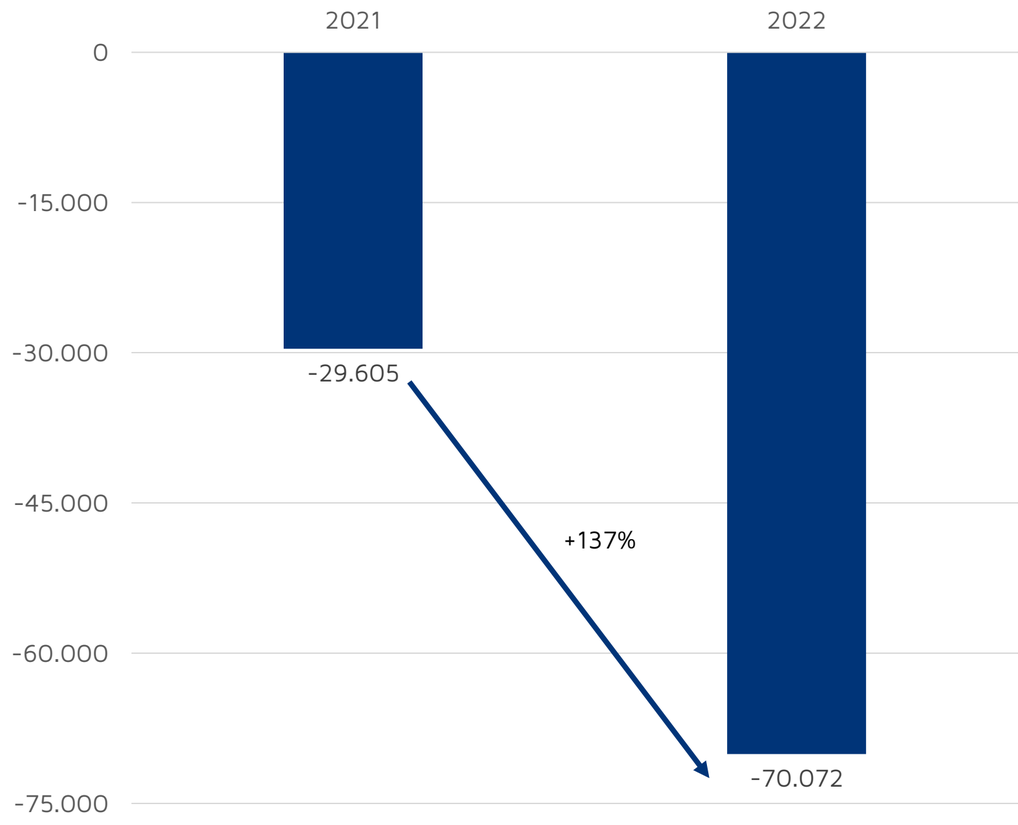


Profit / Loss for the Period

3Q profit / loss, SEK `000s

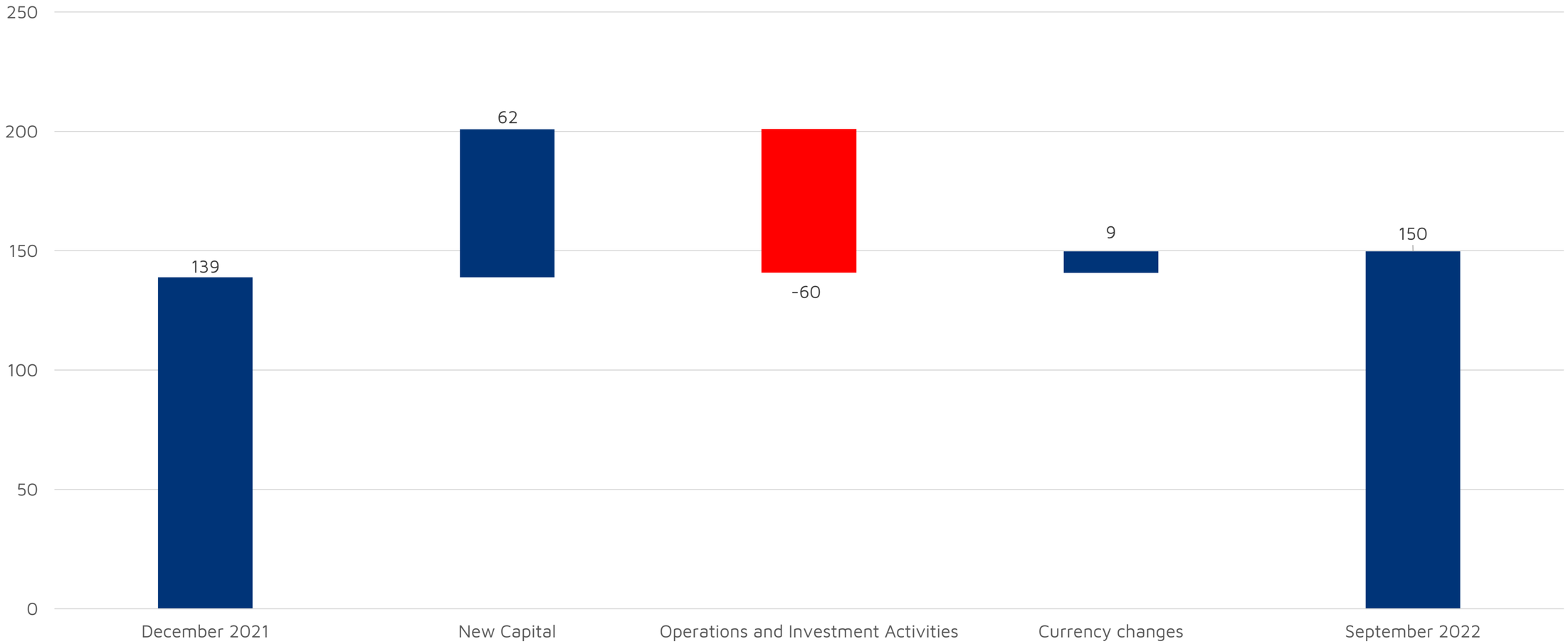


Year-to-date profit / loss, SEK `000s



Cash Development Year-to-Date

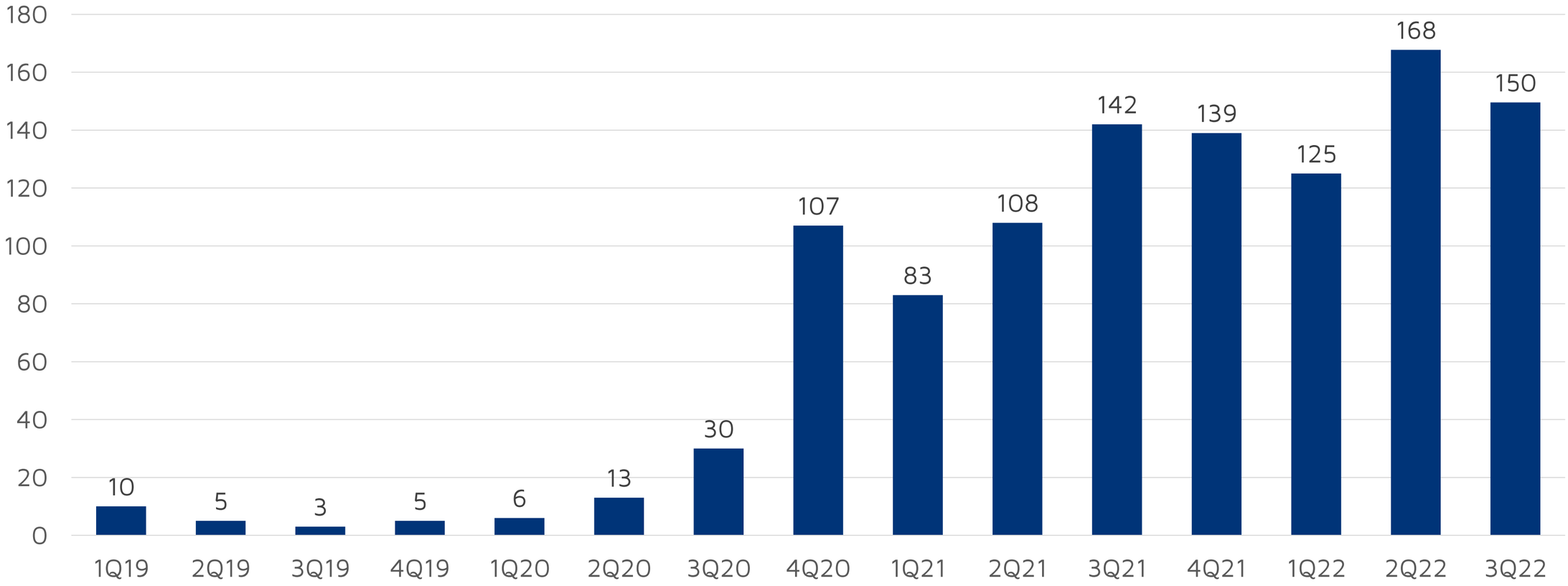
SEK millions



Note: December cash and cash flow from investing activities adjusted for impact if temporarily storing cash in the Company's SKAT account. See notes on the financial overview of the Q1 and Half-Year 2022 reports for further information.

Cash Balance[1], 2019-2022 Quarterly

SEK millions

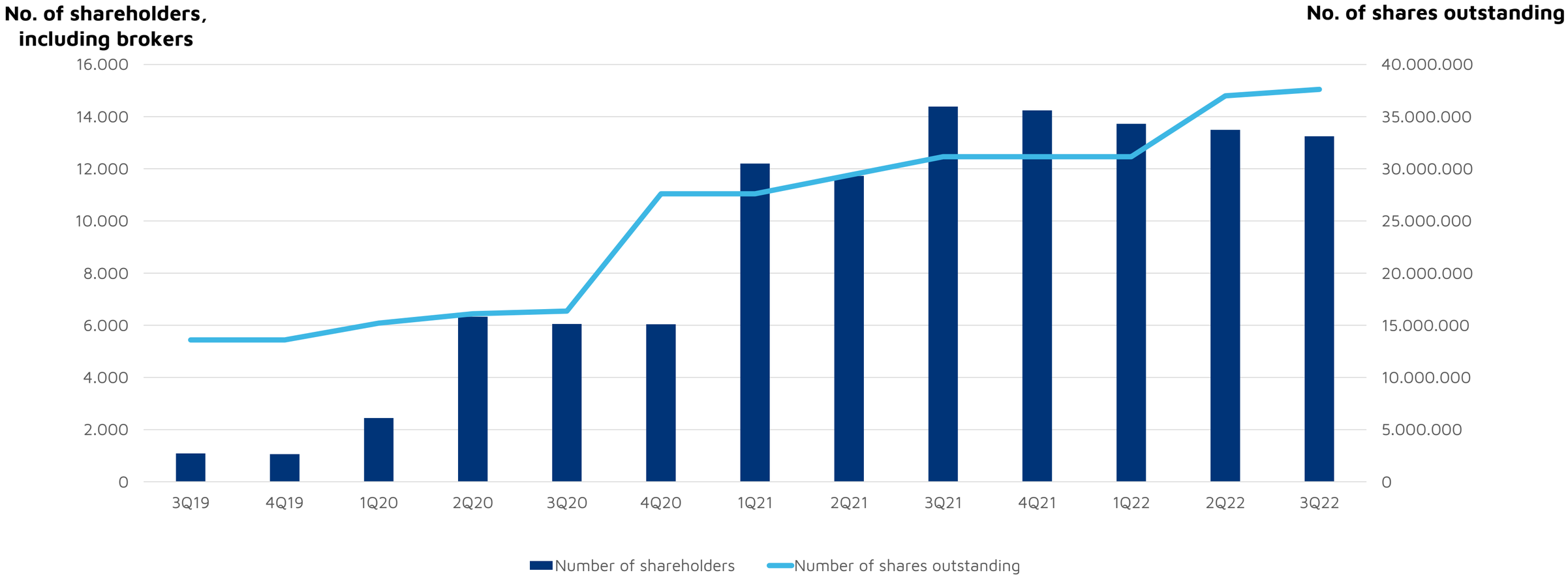


[1] For Q4 2021 and Q1 2022, the cash balance combines funds on the Company's SKAT account (interest-free tax asset with Denmark's tax authorities), and cash and bank. See page 16 of the 2Q 2022 report for more information.

EXPRES²ION BIOTECHNOLOGIES

Shareholder Composition

~13,000 shareholders holding ~37.6 million shares



Advancing Towards Key Catalysts

	2022	2023	2024
 **CORONAVIRUS (ABNCoV2)**	✓BN Phase II study initiation Q3 21 ✓BN Phase II study readout H1 2022 ✓BN Phase III study initiation Q3 2022	BN Phase III initial readout in early 2023 BN initiating rolling submission BN ready for market launch (subject to regulatory approval)	
 **BREAST CANCER (ES2B-C001)**	✓Executed in-licensing (Feb 2021) ✓Preclinical animal studies initiated (Q2) ✓Preclinical animal proof-of-concept results H1 2022 GMP manufacturing processing	Preclinical safety studies readout Filing of clinical study application H2 2023	Initiation of first human clinical study 2024 Out-licensing window opens pending human data
 **INFLUENZA**	✓Advance/support further development of one or more candidates in 2022	cGMP/Preclinical safety studies initiation (subject to new grant funding)	
 **MALARIA**	✓Phase IIa results from the Rh5 vaccine published in 2021 ✓RH5 Additional phase I study in a malaria endemic region in Africa launched during 2021, with alternative adjuvant Pfs 48/45 phase I study initiation 2022 (pending University of Oxford)	RH5-VLP phase I initiation 2023 RH5 phase I study readout H2 2023	

Note: Timeline for ABNCoV2 is based on Bavarian Nordic's communicated timeline, and is subject to potential revision

Thank you!

Contact:
info@expreS2ionbio.com

Proteins
for Life

EXPRES²ION
BIOTECHNOLOGIES