Slow start in phase 1

Initial milestone not achieved in Q1

ExpreS2ion Biotechnologies guided early February for starting treatment of the first patient in its phase 1 study during the course of the first quarter. However, so far, no patients have been included, and we speculate that this delay may push the start of the second part of the study into early next year.

The study is expected to include up to twenty-seven HER2 positive breast cancer patients and investigates the safety and immunogenicity of the vaccine candidate ES2B-C001. Before moving into the second part of the study, investigators will perform a safety analysis on nine patients in the initial dose-escalation part.

Amendment to study protocol

The structure of a clinical study is mastered by the study protocol, which sets out criteria for which type of patients can participate. In order to accelerate the enrolment to the ES2B-C001 study management has applied for an expansion of the current protocol, which allows for only trastuzumab-treated patients, to also include patients that are concurrently receiving Enhertu or other antibody-drug conjugates (ADCs). We expect the Austrian Health Care Agency BASG to confirm the amendment in the third quarter.

Enhertu transforming the HER2 landscape

Enhertu is rapidly overtaking the position as standard-of-care for in metastatic HER2 positive breast cancer, which is the target population for ES2B-C001. Enhertu is an Antibody-Drug Conjugate made up of both the antibody trastuzumab and the cytotoxic deruxtecan. Last year, Enhertu had sales of USD 3.7bn and is expected to reach sales of USD 10bn by 2028, pointing to the huge commercial potential in this patient setting.

Malaria program expanded in 2025

The extensive malaria vaccine program conducted by University of Oxford (UoO) has been further expanded with three studies in planning phase. In total, ExpreS2ion is producing antigen material in ten UoO-studies and is now negotiating an agreement with the Serum Institute of India, holder of commercial rights to the projects.

Fair value trimmed after delay and discontinuation

A cash burn of SEK 23m in Q1 reduced the cash position to SEK 58m, which may fund operations until January next year. The delay caused by slow enrolment in the phase 1 study and the discontinuation of the CMV project led us to reduce fair value to SEK 75 (91).

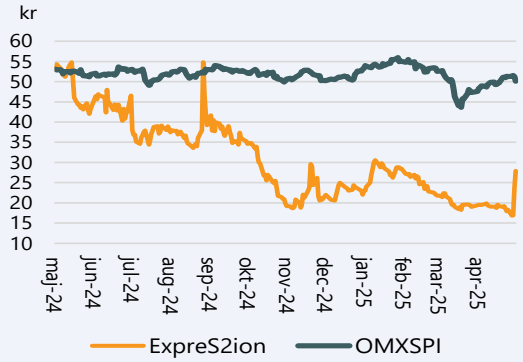
Our base scenario consists of a licensing deal with ES2B-C001 in 2027, which implies bridge financing in Q4 and a new share issue in 2026 on the back of a phase 1 interim data.

ExpreS2ion Biotech

Date	23 maj 2025
Analyst	Sten Westerberg

Facts

Industry	Vaccine Development
Chairman of the Board	Martin Roland Jensen
CEO	Bent U. Frandsen
Year of Listing	2016
Stock List	First North Growth Market
Ticker	EXPRS2
Share price, SEK	26
No. of shares, mln.	2,66
Market cap, SEKm	69
Cash, SEKm	58
Fair value, SEK	**75**
Web site	www.expres2ionbio.com



Source: Refinitiv

Forecasts & Key ratios, SEKm

	2024	2025p	2026p	2027p
Revenues, risk-adjust.	8	9	10	256
Operating expenses	-74	-85	-83	-58
EBIT	-68	-75	-72	200
Earnings per share	-21 kr	-28 kr	-27 kr	75 kr
Revenue growth	-11%	13%	11%	2462%
Cash by year-end	81	39	21	225
New share issues	42	37	60	0

Source: Company, Analysguiden forecasts

A shifting landscape in breast cancer

The success of Enhertu in treating HER2 expressing metastatic breast cancer is changing standard of care. In April AstraZeneca/Daiichi Sankyo released results for a first line setting in HER-2+ breast cancer, which showed Enhertu improving progression-free survival compared to a group treated with the current standard THP (taxane, trastuzumab and pertuzumab).

As a shift in standard of care takes place in a therapeutical area this has consequences for other parties developing new drugs, such as ExpreS2ion Biotechnologies' breast cancer vaccine candidate ES2B-C001. The company is now looking to adjust its protocol for the phase 1 study to include patients treated with Enhertu. The current protocol allows for including patients after treatment with only trastuzumab, a generic antibody serving as the backbone in HER2-expressing breast cancer treatment. Trastuzumab is one of the two components making up Enhertu, an antibody-drug conjugate (ADC).

Accelerating enrolment to ES2B-C001 study

The start of ExpreS2ion's phase 1 study has been slower than anticipated with no patients enrolled so far since the approval issued in December by the Austrian Health Care agency BASG. This should mean that the study still is in a screening phase in which the clinic at the University Hospital of Vienna searches for potential participants.

It should be stressed that slower-than-expected patient recruitment is not unusual in early-stage clinical development. Importantly, we believe that the delay is not related to safety or scientific concerns with the vaccine candidate.

The inclusion criteria of a clinical study are mastered by the study protocol, and we speculate that the slow take-off is due to a strict protocol, excluding patients treated with ADCs such as Enhertu. When a growing number of breast cancer patients are prescribed Enhertu, this leads to a shrinking pool of potential participants treated exclusively with trastuzumab.

Further speeding up the enrolment process is the agreement with five other Vienna clinics, which will refer eligible patients to the treatment site at Medical University of Vienna.

Approval of new protocol possible in Q3

On May 13, investigators submitted an amendment to the ES2B-C001 study protocol, which now will have to be approved by BASG. It is expected that BASG will reply in Q3 and until then the current protocol, which excludes Enhertu patients, will continue to rule patient enrolment. It is reasonable to assume that recruitment will continue to be slow until the amendment is in place. Once Enhertu patients are allowed to participate this will enlarge the pool of potential patients.

The first dose-escalating part of the study will involve nine patients treated with ES2B-C001 at three doses (50, 150 and 450 µg). Up to five injections per dose and patient will be administered intramuscularly during a 12-week period before an evaluation by the

Data Safety and Monitoring Board (DSMB) and a decision to move on the next dose.

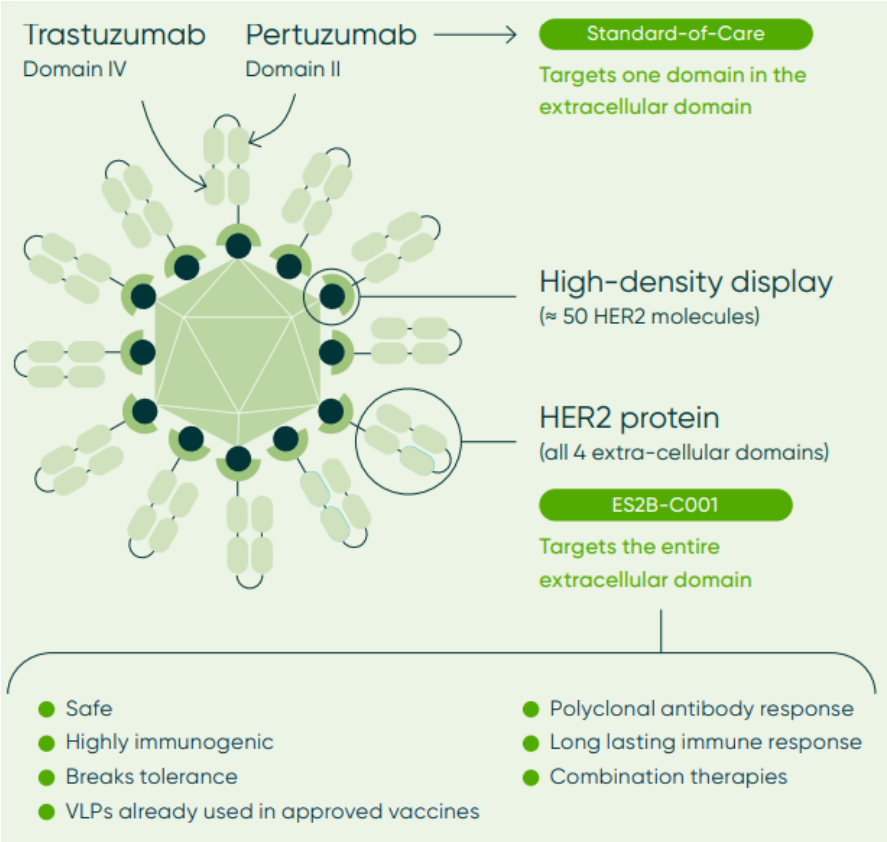
DSMB evaluation before year-end looks optimistic

Management reiterates that, in spite of the delay, it expects data from the dose-escalation part by the end of 2025. With 31 weeks remaining in 2025, this looks optimistic to us. We are now anticipating analysis and decision by DSMB in the first quarter of next year, allowing for the start of the expansion part. However, since this is an open-label study it may be possible to communicate at the end of each dosing group in part 1, which then would involve three patients each.

In the end, the timeline comes down to the speed of enrolment, which we expect may be slow until the amendment is in place in Q3.

The second part of the study, the expansion phase, will enroll up to 18 participants receiving one or more tolerated dose strengths, possibly the 450 µg. The estimated length of the entire study is 18 month from the point of including a first patient.

Mechanistical overview of ES2B-C001 construct



Source: ExpreS2ion Biotechnologies annual report

The illustration above shows the polyclonal binding of ES2B-C001 to all four external domains/epitopes of the HER2 protein. The HER2 protein is widely expressed in several cancer types. In breast cancer, the standard of care, the antibodies trastuzumab and pertuzumab, are monoclonal, each of them binding to one of the domains/epitopes.

This polyclonal property of the cancer vaccine candidate ES2B-C001 may in theory confer with a more aggressive suppression of tumor growth. By combining ES2B-C001 with Enhertu we would anticipate an even stronger response, but also that initial safety concerns may

increase. The primary endpoints of the study are safety, tolerability and maximum tolerated dose. Signs of clinical efficacy, such as objective tumor responses, are included as an exploratory endpoint.

Also, this first-in-human study investigates ES2B-C001 as a therapeutical agent, distinct from the preventive role assigned in general to vaccines. Future studies will look into whether the polyclonal nature of the vaccine candidate can overcome the treatment resistance, which limits the efficacy of current monoclonal antibody therapies.

Negotiation with Serum Institute

In the report for the first quarter of 2025, ExpreS2ion lists three new trials by University of Oxford (UoO), involving malaria antigens expressed by the ExpreS2 platform. This adds to the seven studies already ongoing.

All ten programs are adjuvanted by the Matrix-M, an adjuvant produced by the vaccine developer Novavax. We note that Novavax is not involved in the production of antigen proteins, which is conducted by the ExpreS2 platform.

Antigens are produced for the malaria parasite subtypes RH5.1 and RH5.1+R78C. These programs focus on the blood stage of the disease by blocking the parasite's ability to invade red blood cells. Additionally, ExpreS2ion support development of a Pfs48/45 vaccine, which aims to prevent transmission of the parasite by targeting its reproductive stage in mosquitoes.

VAC085, which evaluated Pfs48/45 in Matrix-M, has already demonstrated first encouraging results in phase 1. The vaccine was well-tolerated, with no serious adverse events reported, and showed a strong antibody response and transmission reducing activity.

UoO programs involving the ExpreS2 platform

Vaccines in trial	Trial abbreviation	Phase	Sites	Trial status	Estimated completion
Pfs48/45 in Matrix-M	VAC-085	I	Oxford, UK	Concluded	March 2025
RH5.1 in Matrix-M	BIO-002	Ia	Sheffield, UK	Fully recruited	Q4 2025
RH5.1 & R78C in Matrix-M	VAC-089	Ia	Oxford, UK	Fully recruited	Q4 2025
	BIO-003	Ib	IHI Bagamoyo, Tanzania	Recruiting	N/A
	VAC-087	TBD	TBD	Funded, not initiated	N/A
	VAC-093	TBD	TBD	Funded, not initiated	N/A
	BIO-005	TBD	TBD	Funded, not initiated	N/A
RH5.1 & RH5.2-VLP in Matrix-M	BIO-001	I/Iia	Oxford, UK	Fully recruited	March 2026
	VAC-091	IIb	IRSS CRUN, Burkina Faso	Actively recruiting	May 2026
RH5.2-VLP & R21 in Matrix-M	VAC-086	Ib	MRC Unit, The Gambia	Fully recruited	June 2025

Source: ExpreS2ion Q1 report

In October last year ExpreS2ion announced it had entered a term sheet with Serum Institute of India Private Ltd (SIIPL) regarding the

exclusive rights for SIIPL to develop, manufacture, and commercialize certain malaria vaccine projects in ExpreS2ion's development portfolio.

All projects are developed and sponsored by the University of Oxford, which has an extensive portfolio of malaria programs ongoing in various parts of the world.

Final agreement with SIIPL pending

So far, a final agreement with SIIPL has not been reached. We hope this will happen in 2025 and provide support to the share price along with a news flow from the phase 1 trial with ES2B-C001.

SIIPL is the producer of the recently approved R21/Matrix-M malaria vaccine, developed through collaboration with the Jenner Institute at Oxford University, leveraged by Novavax's saponin-based adjuvant technology Matrix-M.

As for the programs involving ExpreS2ion's technology, they are designed to target the "blood stage" of the malaria parasite's life cycle as opposed to existing vaccines like R21/Matrix-M which target the "liver stage". Based on clinical results from the University of Oxford, there is an expectation that a vaccine addressing both stages could provide better protection against malaria.

SIIPL is the world's largest vaccine manufacturer by number of doses produced and sold globally (more than 1.5 billion doses annually) which includes Polio vaccine, Diphtheria, Tetanus, Pertussis, Hib, BCG, r-Hepatitis B, Measles, Mumps, Rubella as well as Pneumococcal and COVID-19 vaccines.

Second generation malaria vaccine launched

The first doses of the recently approved R21/ Matrix-M™ adjuvant malaria vaccine has been shipped to Africa and are expected to be offered in 15+ countries across Africa in 2025.

Malaria is a life-threatening disease caused by a parasite that infects mosquitos and is subsequently transmitted to humans. According to the 2024 WHO World Malaria Report, there were an estimated 263 million malaria cases in 2023 and 597,000 malaria-related deaths worldwide.

In December 2023, the WHO announced it prequalified the R21/Matrix-M™ adjuvant malaria vaccine to prevent malaria disease in children caused by the P. falciparum parasite in endemic areas. Prequalification status enables United Nations agencies to procure the vaccine for eligible countries and enabled rollout of the vaccine in mid-2024. The WHO recommended that the R21/Matrix-M™ adjuvant malaria vaccine be administered in a four-dose schedule beginning at five months of age.

Financial discussion and valuation

In its annual report ExpreS2ion Biotechnologies estimates that it has a cash runway to January 2026. This estimate should have been based on the premises of the original study protocol, and we assume that the delay in enrolment and the expansion of the trial to five more referral sites may have some negative impact on cash runway. However, the cost of the study is manageable (see calculation below), and management still expects cash runway into January 2026.

We have for this reason included a bridge financing of SEK 30m in Q4 on top of the T011 exercise, which we expect will bring another 7 Mkr in gross proceeds. This will allow the company to perform a safety analysis of the first nine patients before starting the second part of the study.

After communicating a positive safety and immunogenicity profile in the first nine patients we expect the share price to react very positively. This would allow management to secure financing for 2026 and for the remaining course of the study at a more favorable valuation.

After these transactions, we expect the company to have issued 6,6 mln shares by the end of 2026, a revision from a previous estimate at 4,9 mln shares. Currently the company has issued 2,7 mln shares, but in our base scenario with a licensing deal or trade sale in 2027 it will need to print more shares.

It should be noted that the phase 1 trial, involving up to 27 patients, is a relatively small phase 1 trial. We estimate the cost at close to 30 SEKm, or 95 000 EUR/patient. In general, cost per patient in phase 1 is less expensive, but in early stages of oncology drug development, costs may end at up to 100 000 EUR/patient. Still, this points to a limited investment which can be highly value-creating if the phase 1 program is brought to a successful conclusion.

Potential licensing deal after phase 1 data

Our main scenario is that ExpreS2ion may strike a licensing deal for ES2B-C001 in 2027, assuming a positive data roll-out in late 2026 or early 2027. We have conservatively assumed a deal worth EUR 500m with an upfront payment of EUR 35m. Furthermore, we have assigned a 55 percent likelihood of this scenario.

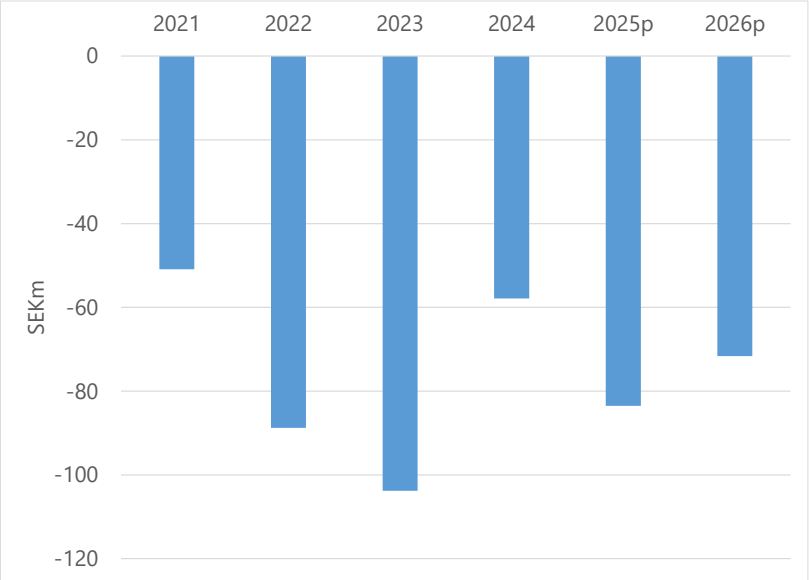
In consequence, we have included a SEK 251m income in 2027 forecasts. It may be argued that an innovative program such as ES2B-C001, considering that there are no therapeutical breast cancer vaccines approved to date, may merit a more profitable deal. Licensing deals on HER2 expressing breast cancer have in some cases been multi-billion deals. In order to reach such a strong deal, it may be necessary to proceed into proof-of-concept phase 2. If assuming a phase 2 financing in 2027, it would be possible for ExpreS2ion to pursue in-house development and aim for a more lucrative end of phase 2 licensing deal.

If ExpreS2ion or its partner can document both therapeutical and preventive properties of ES2B-C001 as a future phase 3 study, we expect sales of ES2B-C001 to surpass USD 4bn .

Depressed valuation of ES2B-C001

We estimate that historic investments in the preclinical and manufacturing phase of the ES2B-C001 project amounts to EUR 25-30m, reflecting an ambitious program started already in 2020. In our sum-of-the-part valuation we have assigned a value of SEK 260m, or SEK 41 per share. This valuation is based on a 58 percent likelihood of a successful phase 1 conclusion followed by a licensing deal in 2027. The likelihood of approval for a new vaccine is estimated at 11 percent with a potential launch in 2031.

Cash burn in SEKm, outcome and forecast



Source: ExpreS2ion Biotechnologies, Analysguiden forecasts

We expect an operative cash burn in 2025 of SEK 83m, up from last year's level at SEK58m. Depending on the final number of patients in the phase 1 study, we expect this to cost SEK 25-30m, incurred during the course of 2025 and 2026. This scenario leaves us with a fair value of SEK 75.

Sum-of-The-Parts valuation of ExpreS2ion Biotech

	Project value (MSEK)	Value / share (SEK)	Peak sales (EURm)	LOA*	WACC	Share of NPV	Comments
ES2B-C001	258	41	4 377	11%	15%	100%	Phase 1 started
Adaptvac holding	92	14		100%	12%	34%	Minority holder
Platform	42	7	0,6	100%	10%	100%	cash flow based
Malaria project	70	11	175	15%		6%	of consortium
Indigo (influenza)	17	3	952	3%		6%	of consortium
CMV program	0	0	0	0%	0%	0%	CD election 2025
Nipha program	23	4	100	3%		30%	of consortium
Administration	-25	-4					
Sum	477	75			*Projected no. of shares, end of 2026 (mln)*		*6,36*
**) Likelihood of approval*					*current number of shares (mln)*		*2,66*

Discussion of LOA at 11 percent

As a result of the BASG approval of the phase 1 study we raised our likelihood of approval (LOA) for ES2B-C001 to 11 percent from previously 10 percent. At this stage we chose to retain a LOA of 11 percent in spite of the unlikely event that BASG will not approve the amended protocol later this year.

Our base scenario would be above the industry average in cancer drug development for a phase 1 project in its early stages. The industry average of an oncology product initiating phase 1 is more in the region of 4-6 percent.

We justify this level by the vaccine approach of ES2B-C001, which may be associated with a lower development risk than a small molecule kinase inhibitor or a monoclonal antibody. Current preclinical data and manufacturing investments add to our optimistic scenario.

On the negative side, it should be kept in mind that very few therapeutical vaccines have made it to the market so far, in spite of many efforts during the last decade.

Assumptions of risk adjusted NPV calculation

SEKm, ExpreS2ion Bio		2023	2024	2025p	2026p	2027p	2028p	2032p	2033p	2034p
Operating revenue		9	8	9	10	256	8	836	539	1008
Sales, ES2B-C001 (EURm)						*251*	*0*	*831*	*534*	*1003*
platform/services		*7*	*3*	*5*	*5*	*5*	*8*			
EBIT		-100	-46	-75	-72	200	5,7			
Cash		58	82	39	21					
AdaptVac		2023	2024	2025p	2026p	2027p	2028p	2032p	2033p	2034p
Net income			10	0	5	75	0	0	0	0
Milestones, ERUm			*10*	*0*	*5*	*75*				
Risk adjustment			*1,0*	*1,0*	*1,0*	*1,0*	*1,0*			
Risk-adjusted NPV (SEKm)			64,3	-2,4	19,5	254,3	-1,2			
Risk-adjusted		*0,00*	*1,00*	*1,00*	*1,00*	*1,00*	*1,00*			
WACC	12%									
NPV, SEKm	91,8									
Likelihood of approval	100%									
ExpreS2ion share, SEK	14,4									
ES2B-C001 (SEKm)		2023	2024	2025p	2026p	2027p	2028p	2032p	2033p	2034p
Costs, preclinical / clinical		-60	-24	-19	-13	-15	0	0	0	0
milestones to Adaptvac			*-3,5*	*-3,5*	*0*	*0*	*0*			
Sales, EURm								859	1 749	2 285
Total milestones, licensing	485				0	35	0	150	0	150
Royalty	*10%*							*86*	*175*	*229*
Expres2ion revenues, SEKm		-60	-24	-19	0	251	0	831	534	1 003
Risk-adjusted			*1,00*	*0,58*	*0,58*	*0,58*	*0,26*	*0,11*	*0,11*	*0,11*
Risk adjusted revenues, NPV (SEKm)			0	-11	-29	146	0	94	61	114
WACC	15%		Likelihhod of ph1 to ph2		58%					
NPV, SEKm	256		Likelihhod of ph2 to ph3		45%					
Likelihood of approval (LOA)	11%		Likelihhod of succesful ph3		50%					
Diluted value/share, SEK	40,2		Regulatory approval		87%					

Analysguiden forecasts and assumptions

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