



# Forward-looking statements and disclaimer

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# Investment Highlights

Leader in advanced protein sciences with novel pipeline addressing 45B EUR markets



Proven leader in the production of complex proteins with our proprietary ExpreS<sup>2</sup> technology, used in therapeutics, vaccines, and diagnostics, with >100 clients worldwide



AdaptVac, our joint venture with NextGen, combines ExpreS<sup>2</sup> with Virus Like Particle (VLP) technology for highly immunogenetic and cost-effective vaccines and therapeutics



Deep pipeline of novel therapeutics and vaccines addressing high-need and commercially-attractive markets (~45B EUR market potential)



Annual revenue of 15M SEK / ~1.5M EUR with >10% growth from legacy license and service contract business, including milestone payments, royalties, and contract fees



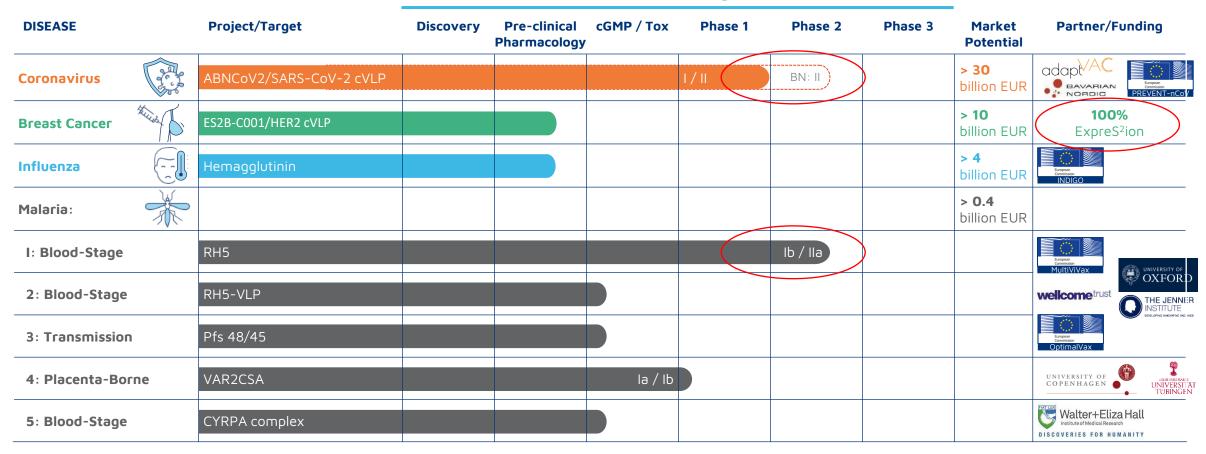
Traded on the NASDAQ First North Stockholm [EXPRS2] since 2016 with >12X increase\* in share price since Jan 2020, reflecting transition to pipeline-driven business

Market Cap: >1.4B SEK / >135M EUR



# Deep Pipeline for Value Creation

#### **Development Progress**



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



# Management Team

Expanded team in 2021 brings skills to build our pipeline-focused business



#### Bent U. Frandsen, CEO

- MSc. In Finance/Strategic Management, Copenhagen Business School, Denmark
- Born 1967, Danish citizen
- >25 years industry finance, business dev and management experience















#### Dr. Mette Thorn, VP Preclinical Development

- PhD in Immunology, and a MSc in Chem Eng., Tech. Univ of Denmark
- Born 1972, Danish citizen
- 20 years industrial research experience











Started

Started

in 2021

Started



#### Keith Alexander, CFO

- MBA, The Wharton School and the University of Pennsylvania, USA
- Born 1975, American citizen with Danish permanent residence
- >20 years of equity research, corporate strategy, asset management and consulting experience



Danske Bank J.P.Morgan accenture



#### Prof. Lars Petersen, Medical Dir., Oncology

- MD, DMSc in immuno-pharmacology, from Univ of Copenhagen, and CBA from AVT Business School
- Born 1960, Danish citizen
- >30 years academic and clinical development experience













#### Max Soegaard, VP of R&D and Technology

- PhD in Biochem., UCL, UK, and MSc in Molecular Biology; AU, Denmark
- Born 1970, Danish citizen
- 20 years academic and industrial research experience



### Eske Rygaard-Hjalsted, VP Business Dev.



- Born 1965, Danish citizen
- > 25 years across business dev, sales and marketing in life sciences









## **Board of Directors**

Expanded the Board in 2021 in support of the transition to a pipeline-focused business



#### Dr. Martin Roland Jensen, Chairman



- PhD. in Molecular and Cell Biology, Univ. of Copenhagen, Denmark
- Born 1960, Danish citizen
- >35 years biotech industry management and co-founder experience, incl. scientific work in immunology and cancer vaccine development













#### **Dr. Karin Garre**. Board Member



- MD, from University of Copenhagen, Denmark
- Born 1957, Danish citizen
- >25 years bio-industry management and drug development experience from early to late-stage phases and registration















#### Dr. Allan Rosetzsky, Board Member

elected

- Doctor of Medicine (MD), from University of Copenhagen, Denmark
- Born 1948, Danish citizen
- >40 years of healthcare and biopharma experience, including founding, running, and successfully selling the clinical CRO KLIFO



**RHÔNE-POULENC** 



#### Sara Sande, Board Member

in 2021

- MSc in Economics, from University of Copenhagen , Denmark
- Born 1975, Danish citizen
- 20 years leadership experience in high-tech B2B companies, incl. sales excellence, strategy and commercial development















- Law Degree from Univ. of Copenhagen, and MBA, Imperial College, UK
- Born 1968, Danish citizen
- >25 years commercial experience from international biotech industry

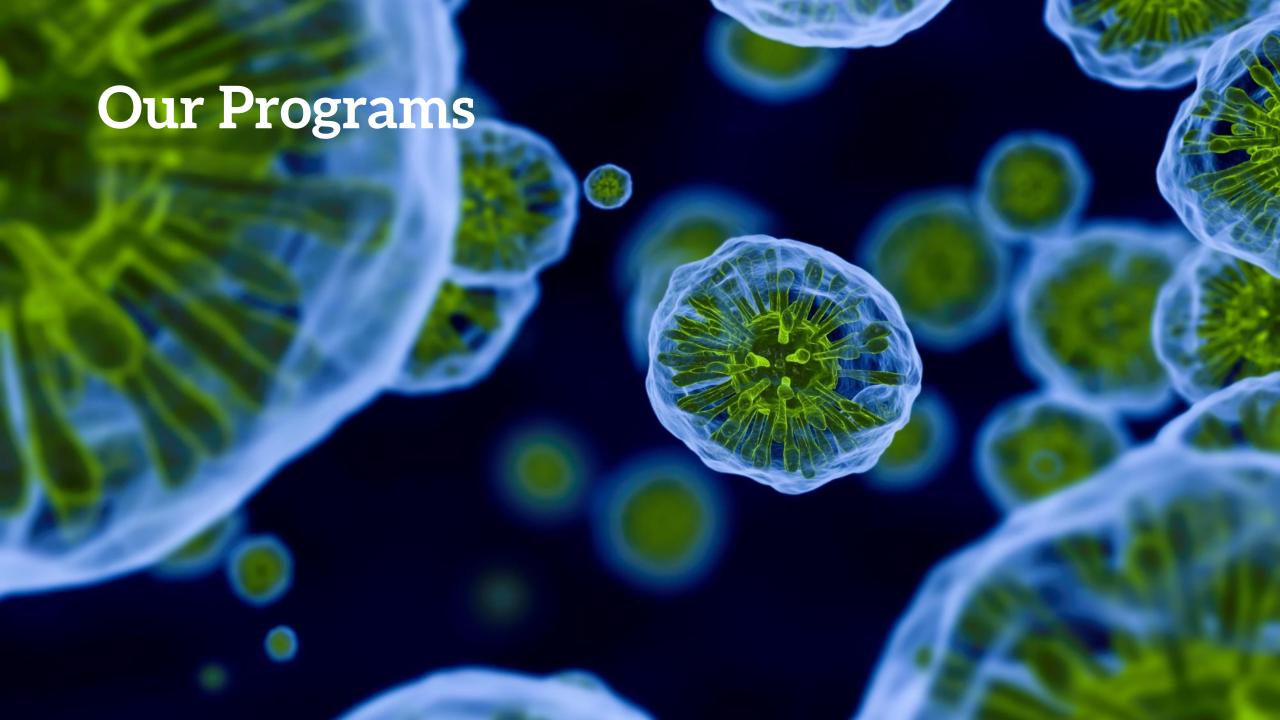






#### Board update and expansion at AGM May 2021

Combined more than 140 years of deep professional experience that supports ExpreS<sup>2</sup>ion's vision of leadership in the infectious diseases and cancer fields





# The 2<sup>nd</sup> Generation COVID-19 Vaccine

With **over 4.5 million deaths worldwide**, significant needs remain in the global long-term fight against the SARS-CoV-2 virus:



Uncertain duration of effect with current vaccines, expected to need repeated boosters



Storage and handling requirements for many vaccines create logistical constraints



Potential mutated variants may require rapid development of new vaccines



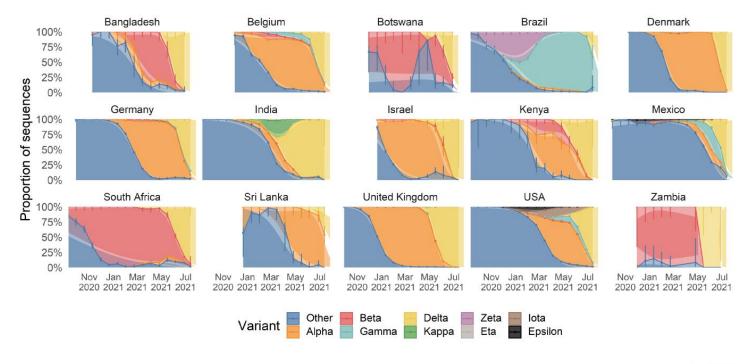
# The 2<sup>nd</sup> Generation COVID-19 Vaccine

#### B.1.617.2 Delta variant





#### Replacement effect of Delta



Source: WHO Epi Analytics Group



#### **WHO COVID-19 Vaccines Research**

## Can booster doses contribute to control this pandemic: what research is needed?

13 August 2021, virtual consultation Geneva, Switzerland

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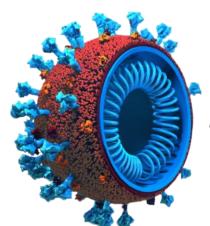




# The Best COVID-19 Vaccine



ABNCoV2 has demonstrated superior preclinical proof-of-concept, and now promising human data

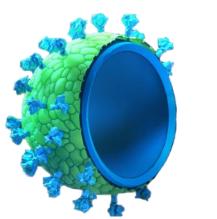


#### **Virus**

Spike proteins on surface of the coronavirus are primary target for vaccine development

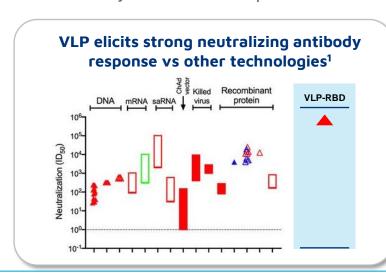
#### **Encouraging early findings:**

- Durable immune response with single shot
- Strong immunogenicity vs. variants
- Well suited to rapid iteration for mutated variants if needed
- Stability at room temperature\*



#### **Capsid VLP**

Spike proteins displayed on surface but contains no genetic material



#### Phase I/II Study headline results:

- 45 humans dosed (6-70μg)
- Aug. '21: Safe and well tolerated
- High levels of neutralizing antibodies, also for Delta/Beta VoCs

See data next slide

Bavarian Nordic holds the exclusive global license to ABNCoV2; sponsor of the on-going commercialisation



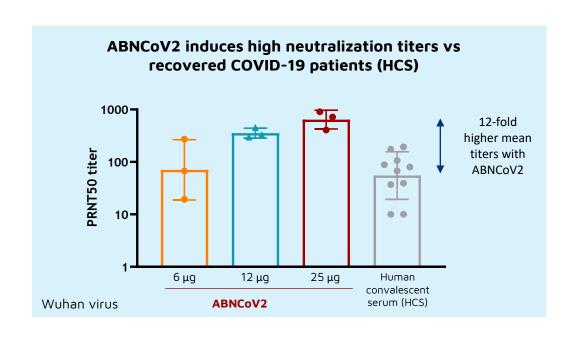
- Phase II readout within 2021
- Phase III initiation in 2022 with market launch estimated 2022/-23

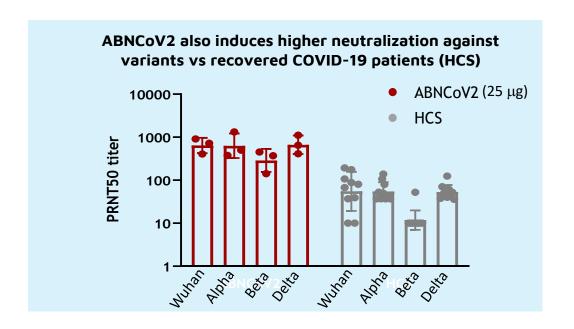




# **ABNCoV2: Positive Phase I/II Outcomes**

Exceptional safety & tolerability, as well as high neutralizing effect against variants





Results support initiation of 210-subject Phase II booster study (results Q4 2021) and parallel ramp-up for Phase III in early 2022 (with up to DKK 800 million funding by Danish Ministry of Health)



## **COVID-19 License and JV Economics**

ABNCoV2 is already out-licensed with near-term revenue streams supporting ExpreS<sup>2</sup>ion

#### AdaptVac's Economics

Paid by Bavarian Nordic

- 4 MEUR upfront (paid in July 2020)
- Up to 136 MEUR in development and sales milestones

 Single- to double-digit-% royalties of Bavarian revenues

#### **ExpreS**<sup>2</sup>ion's Economics

Paid by AdaptVac

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



# COVID-19 Value to ExpreS<sup>2</sup>ion

Institutional analysts have higher sales and approval assumptions



Pareto: SEK 68 target

COVID-19 + AdaptVac value: **SEK 1,322 mn** (60.9% of company valuation)

Retail



Institutional

Estimated COVID-19 + AdaptVac value<sup>1</sup>

Nordea

SEK 1,942 mn

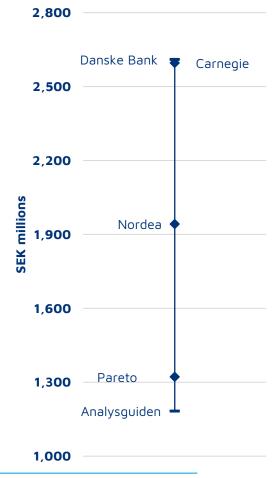
Danske Bank

**SEK 2,610 mn** 



SEK 2,596 mn

## Estimated COVID-19 + AdaptVac value<sup>1</sup>



Analysguiden: SEK 55 target

COVID-19 + AdaptVac value: **SEK 1,183 mn** (64.4%)



## 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<sup>2</sup>

685,000

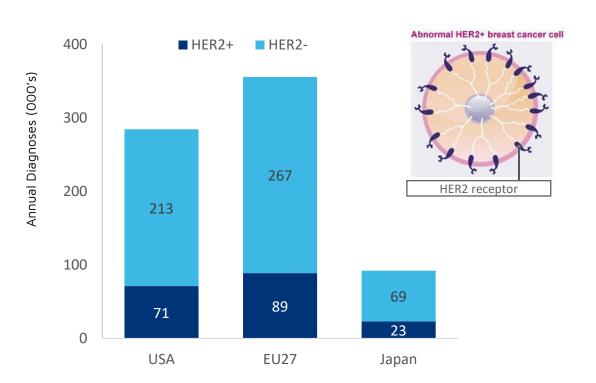
deaths worldwide in 2020 due to breast cancer<sup>1</sup>



## **HER2+ Breast Cancer Overview**

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

## Over 180,000 people diagnosed with HER2+ breast cancer per year across US, EU, & Japan<sup>1,2</sup>



## Monoclonal antibodies are the cornerstone of treatment for HER2+ breast cancer (>\$7B USD sales)

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





#### However, serious drawbacks exist with these therapies

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

Vaccine-like approach offers potential to overcome drawbacks through *internal antibody production* 

<sup>1.</sup> US: BreastCancer.org: https://www.breastcancer.org/symptoms/understand\_bc/statistics; EU27: Information System (Oct 2020) (https://ecis.jrc.ec.europa.eu/pdf/Breast\_cancer\_factsheet-Oct\_2020.pdf); Japan: https://gco.iarc.fr/today/data/factsheets/populations/392-japan-fact-sheets.pdf.

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





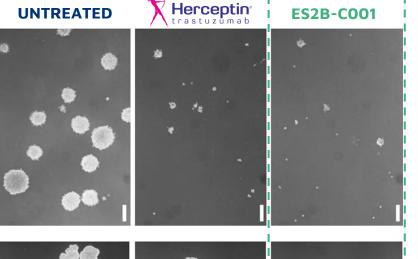
# ES2B-C001 overcomes Herceptin resistance

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

#### Trastuzumabsensitive

**UNTREATED** 

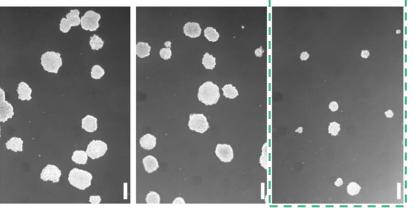
HFR2+ human cancer cells<sup>1</sup>



Both Herceptin (trastuzumab) and ES2B-C001 inhibited growth in the trastuzumab-sensitive cells

#### Trastuzumabresistant

HFR2+ human cancer cells



Only ES2B-C001 inhibited growth in the trastuzumab-resistant cells; cells were unresponsive to Herceptin





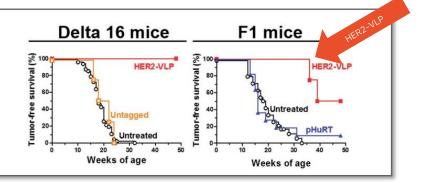
# Strong Preclinical Data for VLP Approach

ES2B-C001 has demonstrated animal proof-of-concept, and on track to repeat in vivo PoC

- Prevention of 50-100% of spontaneous mammary carcinogenesis
- Strong tumor growth inhibition in therapeutic studies (mice transplanted with tumor cells/fragments)

## Preventive studies

(mice with pre-disposition to spontaneous development of HER2+ tumors)

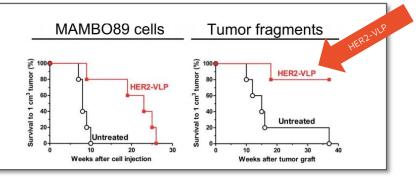


Preclinical *in vivo* studies are underway in collaboration with University of Bologna; proof-of-concept data expected primo 2022.

On path for clinical trial application submission before end of 2022.

## Therapeutic studies

(mice transplanted with HER2+ tumor cells or larger tumor fragments prior to vaccination)





## Influenza & Malaria



#### Influenza Vaccine

>4 billion EUR

#### The INDIGO consortium

- Led by University of Amsterdam
- Multiple research groups, incl. ExpreS<sup>2</sup>ion
- Funded by a 10 MEUR 2020 Horizon grant from the EU (0.6 MEUR awarded to ExpreS<sup>2</sup>ion)

#### **Technologies**

- Potentially include use of ExpreS<sup>2</sup> platform for antigen production
- Goal of >90% responder rate (vs <40% with current vaccines

#### Vaccine design completed - Lead candidate selection

 Slow progression towards preclinical activities – affected by the COVID-19 pandemic



#### Malaria Vaccine

>0.4 billion EUR

#### 5 vaccines candidates under development that target various stages of disease & transmission

#### Stage/Target

- Blood stage (RH5.1)
- Blood stage (RH5.2)
- Transmission (Pfs48/45)
- Placenta borne (VAR2CSA) UNIVERSITY OF COPENHAGEN
- Blood-stage (PfRipr)

**Partners** 





# Malaria Transmission Cycle

#### Ad I) 2021 news on RH5.1

- 04.21: Publication of Phase I/IIa data from the VAC063 study
- 07.21: The VAC080 study, a Phase Ib trial, is initiated in 60 healthy adults and infants in Tanzania to assess safety and immunogenicity

I 18 **Proteins** for Life





# **Exercise of Warrant Programme TO5**

Window open during September 6-20 – Strike price determined to be 25 SEK / share

- 5.5 million TO5 warrants, part of the October 2020 successfully oversubscribed rights issue
- Exercise window September 6-20, 2021
- Strike price equal to 70% of VWAP during 10 trading days prior to exercise window
- Strike price must be within window of SEK 6-25 per share – determined to be 25 SEK
- 3 warrants equal 1 share
- Potential SEK 45 million cash inflow in gross proceeds



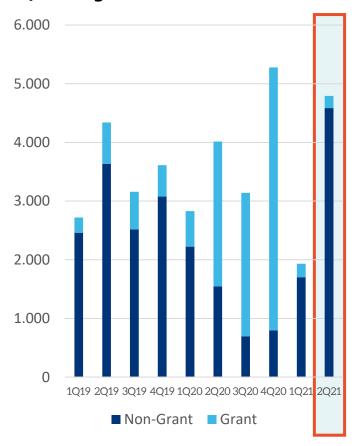


Proteins for Life VWAP = Volume-Weighted Average Price | 20

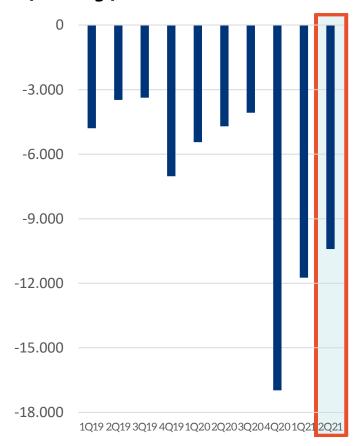


# 2Q21 - Key Financial Developments

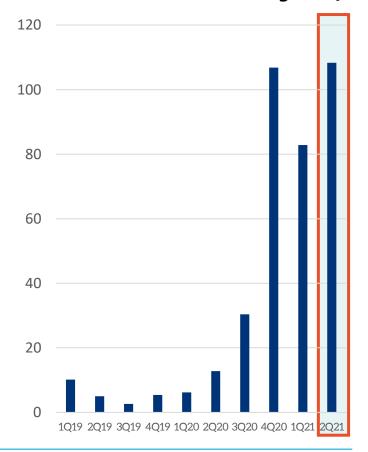
#### Operating income, SEK '000s



Operating profit (loss), SEK '000s



Cash, SEK millions – excluding TO5 proceeds





# 2021 – 2023 Outlook

On track to deliver shareholder value

2021						2022					2023	
ar. I	CORONAVIRUS (ABNCoV2)					 				 		
₩.s	♥ Phase I/II trial, COUGH-1 initiated	COUGH-1 initial safety results (Q2)	○ COUGH-1     full safety     & efficacy     results     (Q3)	Ø BN Phase II trial initiation (Q3)	BN Phase II trial readout	BN Phas trial initiation		BN Phase III initial readout		atory		
Hiring S	BREAST CA	ANCER (ES2B	-C001)									
1 //	© Executed in-licensing (Feb 2021)	Ø Preclinical animal stu initiated (0)	ıdies		Preclinica proof-of- results	7	GMP manufactu batch & tox	3	of al trial cation	Initiation of first human clinical trial	Outlicensing window opens pending human data	
	INFLUENZA	4										
	· ·			developme	upport further ent of one or idates in 2021							
	MALARIA					 						
Α .	<ul><li>Phase IIa results from the Rh5.1 vaccine published in 2021</li></ul>			Additional phase malaria endemic launched during alternative adjuv	1 1 1 1 1				Rh5 phase I readout	trial		





# ExpreS<sup>2</sup>ion's Business Model

High-potential pipeline and legacy CRO business based on world-class protein technology

#### **ExpreS<sup>2</sup> Platform for Protein Expression**

High-quality & efficient production of complex proteins using *Drosophila melanogaster* (fruit fly) S2 cell lines



## Contract Research Organization (CRO) (since spinout/founding in 2010)

#### **Services**

- Early-stage R&D for leading academic, research, and biotech organizations
- Protein feasibility, delivery, and transfer to GMP production

#### Licensing & Kit Sales

- Fully out-license rights to ExpreS<sup>2</sup> technology
- Sell test kits and reagents for research or diagnostic applications

Revenue-generating business: current and long-term payments

## Novel Pipeline Development (since Jan 2020)

#### Independent

- Fully-owned development of novel protein therapeutics and vaccines
- After human PoC, partner externally for further development

#### Collaboration

- Partner with leading research organizations to source and develop novel programs
- Potential to fully acquire programs for independent development

Significant upside potential: intermediate/long term

# Our Technology







# ExpreS<sup>2</sup> Platform for Complex Proteins

Enables unique non-viral approach to protein and vaccine production

Cell line derived from Drosophila melanogaster (fruit fly) S2 cells \*



**Transfection** of desired gene into S2 cells, including secretion signal: 1 week

**Stable polyclonal pool** arowth: *3 weeks* 

Uniform monoclonal pool growth: 9 weeks

Purify and extract target proteins
+ 12 weeks stability study

**Transfer** to GMP production / client

#### Reducing risks in discovery manufacturing

- √ Fast & high level protein expression
- √ Robust; high batch-to-batch consistency
- √ Superior success rates in early research

Proprietary process and expertise has established ExpreS<sup>2</sup>ion as the leader in specialty protein production

- √ 20+ years of experience
- ✓ Over 90% success rate, over 350 proteins expressed
- √ Go-to source for challenging proteins
- √ Rapid delivery (3-6 months) of high-quality, uniform proteins with exceptional yields



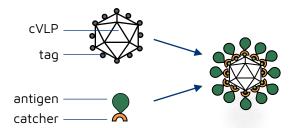
# Virus Like Particle (VLP) Technology

VLP technology has proven track record in cancer vaccine applications (HPV)

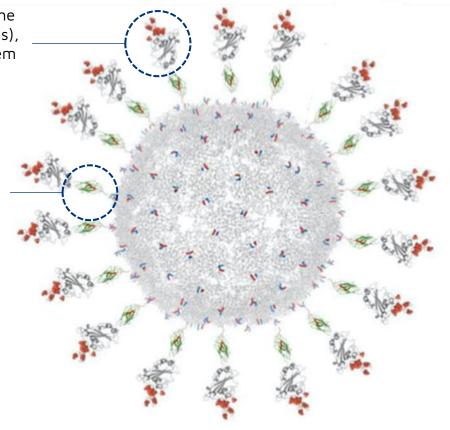
**Our ExpreS<sup>2</sup> platform** produces the complex surface proteins (antigens), which are critical to immune system recognition and response

#### AdaptVac's proprietary viruslike particles technology<sup>1</sup>

securely attaches our proteins to the surface of a spherical shell (capsid), mimicking a virus to elicit an immune response



**Proteins** for Life



#### High immunogenic potential

- Full length proteins: Exceptionally strong attachments can hold entire complex proteins; other VLP approaches can only support fragments (single epitopes)
- **High density display** on surface (180 attachment sites): Increased, faster, focused immune response
- **Directional attachment** (vs random orientation in other systems)

## VLPs have track record of success of commercial success in cancer





#### Global HPV Sales (Billion \$)

