



NASDAQ: ALT

# CORPORATE PRESENTATION

June 2020

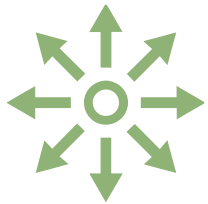
# FORWARD-LOOKING STATEMENTS

## **Safe-Harbor Statement**

Any statements made in this presentation relating to future financial or business performance, conditions, plans, prospects, trends, or strategies and other financial and business matters, including without limitation, the prospects for commercializing or selling any product or drug candidates, are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. In addition, when or if used in this presentation, the words “may,” “could,” “should,” “anticipate,” “believe,” “estimate,” “expect,” “intend,” “plan,” “predict” and similar expressions and their variants, as they relate to Altimmune, Inc. (the “Company”) may identify forward-looking statements. The Company cautions that these forward-looking statements are subject to numerous assumptions, risks, and uncertainties, which change over time. Important factors that may cause actual results to differ materially from the results discussed in the forward looking statements or historical experience include risks and uncertainties, including risks relating to: our lack of financial resources and access to capital; clinical trials and the commercialization of proposed product candidates (such as marketing, regulatory, product liability, supply, competition, dependence on third parties and other risks); the regulatory approval process; dependence on intellectual property; the Company’s BARDA contract and other government programs, reimbursement and regulation. Further information on the factors and risks that could affect the Company's business, financial conditions and results of operations are contained in the Company’s filings with the U.S. Securities and Exchange Commission, including under the heading “Risk Factors” in the Company’s annual reports on Form 10-K and quarterly reports on Form 10-Q filed with the SEC, which are available at [www.sec.gov](http://www.sec.gov). The statements made herein speak only as of the date stated herein, and any forward-looking statements contained herein are based on assumptions that the Company believes to be reasonable as of this date. The Company undertakes no obligation to update these statements as result of new information or future events.

# INVESTMENT HIGHLIGHTS

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Developing **next generation peptide therapeutics** for liver disease and oncology

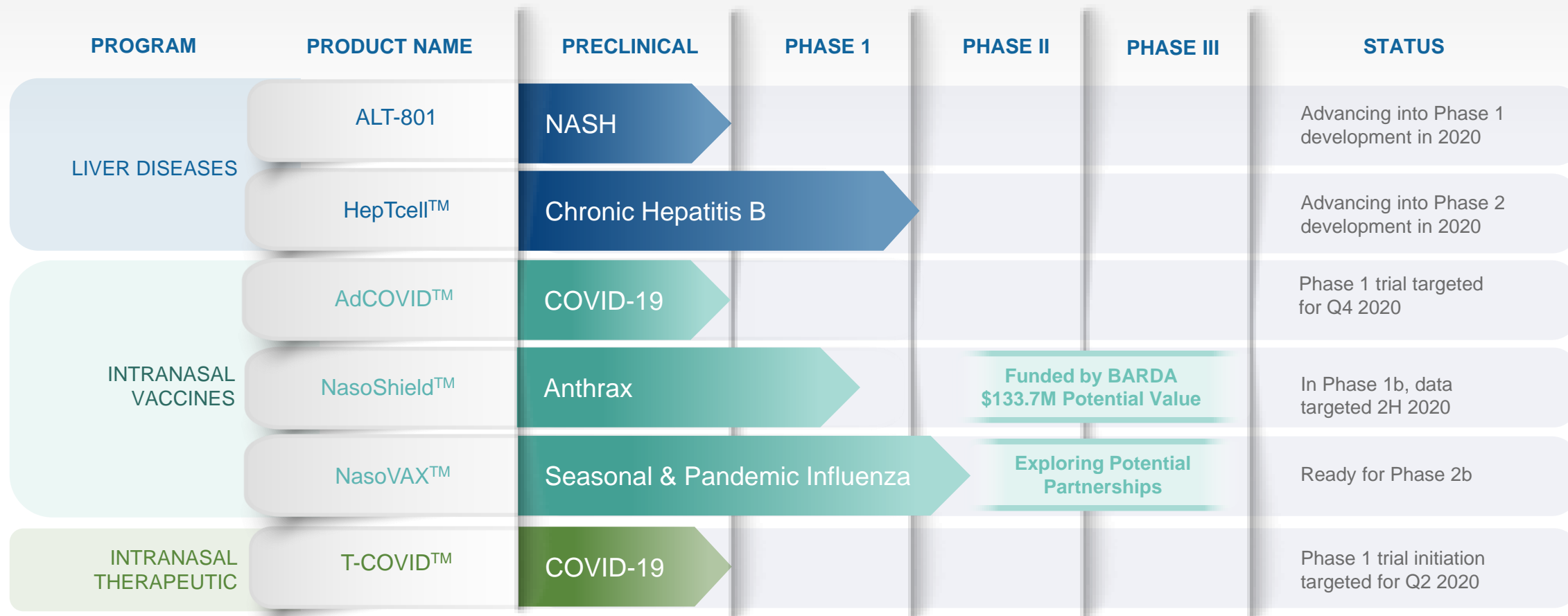


Proprietary **intranasal vaccine platform** ideally suited for rapid response to pandemic situations



Near-term **value-driving catalysts with sufficient cash and investments on hand**

# DEVELOPMENT PIPELINE



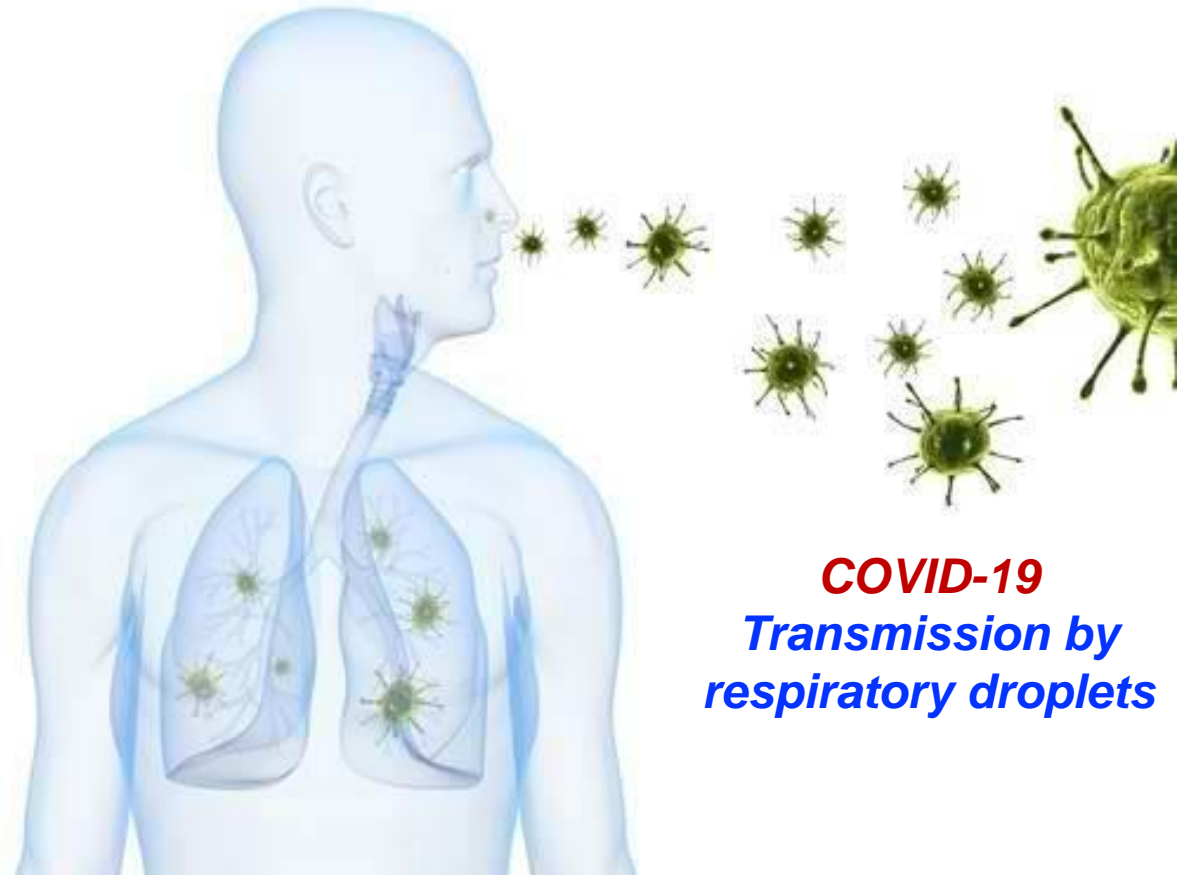


# **INTRANASAL VACCINES**



# IMPORTANT CONSIDERATIONS FOR A SUCCESSFUL COVID-19 VACCINE

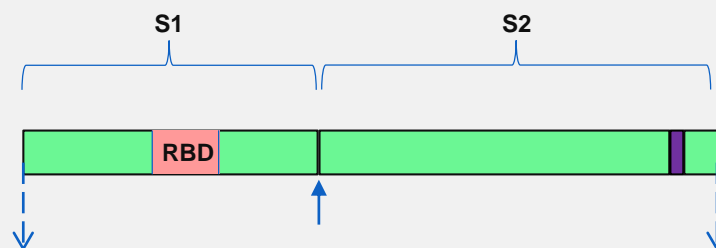
- Immune mechanism of protection is not well defined – ***vaccine should activate multiple arms of immune system***
- Infection occurs through and in the nose and airways – ***intranasal vaccination to provide nasal mucosal immunity - a first line of defense***
- Vaccine distribution and administration on a global scale represents significant challenge – ***single dose, simple dosing method, product stability critical***



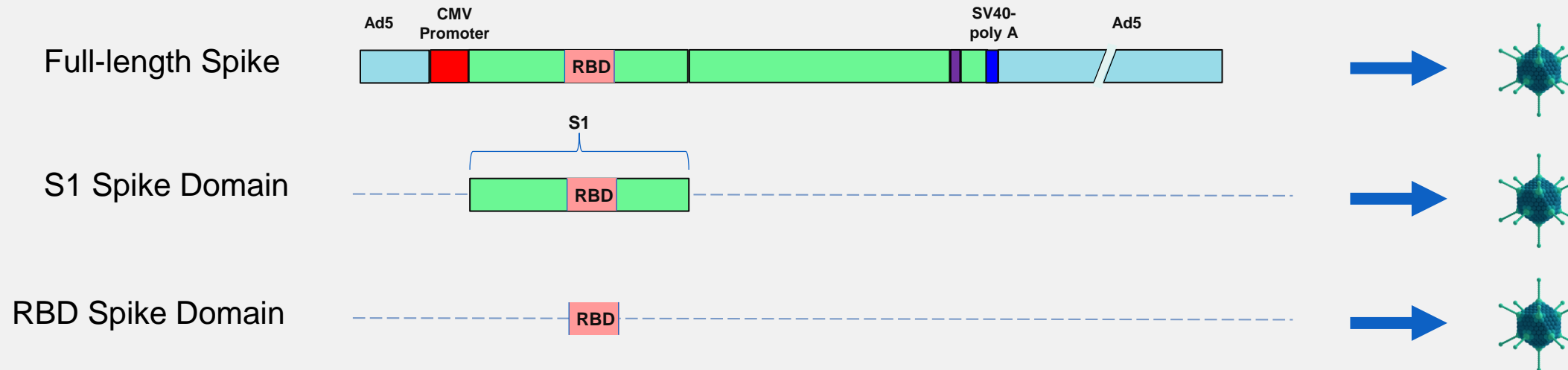
# AdCOVID™: SINGLE-DOSE INTRANASAL VACCINE FOR COVID-19

## STRUCTURE OF VACCINE CANDIDATES

### *SARS-CoV-2 Spike Protein*



### Vaccine Candidates

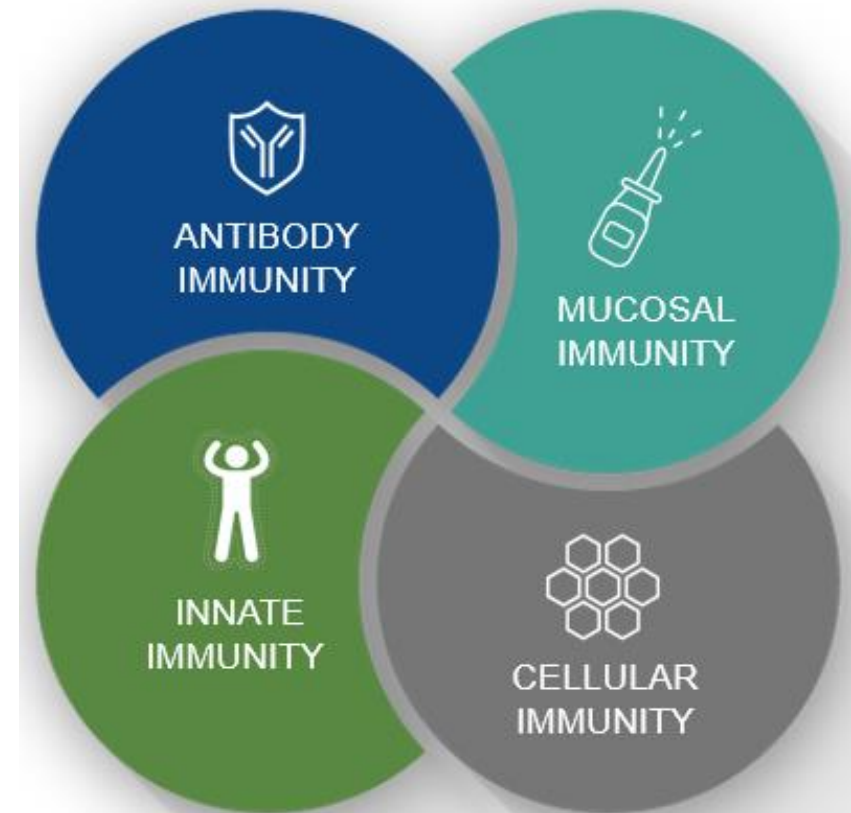


# AdCOVID™: SINGLE-DOSE INTRANASAL VACCINE FOR COVID-19

## IDEALLY SUITED FOR PANDEMIC RESPIRATORY VIRUS

### Intranasal COVID-19 Vaccine Designed for:

- Seroprotection with single intranasal dose
- Stimulation of multiple arms of the body's natural immune responses
- Excellent stability profile shown in Altimmune's intranasal platform vaccines
- Safety profile indistinguishable from placebo in Altimmune's clinically tested platform vaccines

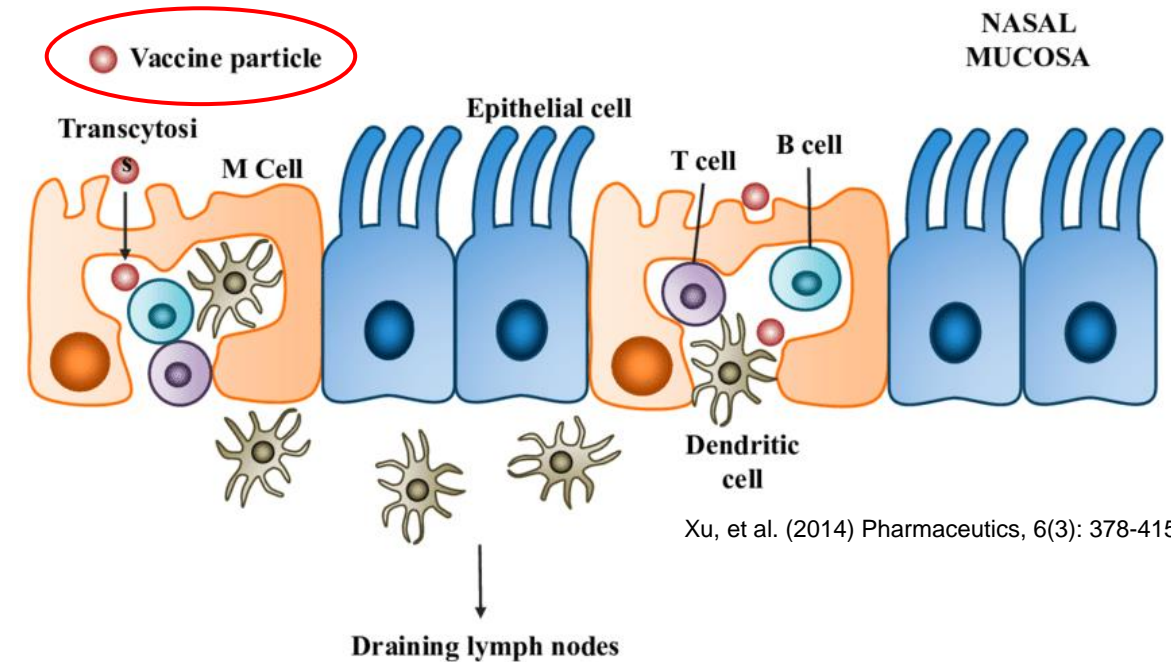




# NASAL MUCOSAL IMMUNITY - STIMULATION BY INTRANASAL DELIVERY

## FIRST LINE OF DEFENSE AGAINST INVADING VIRUSES AND OTHER PATHOGENS

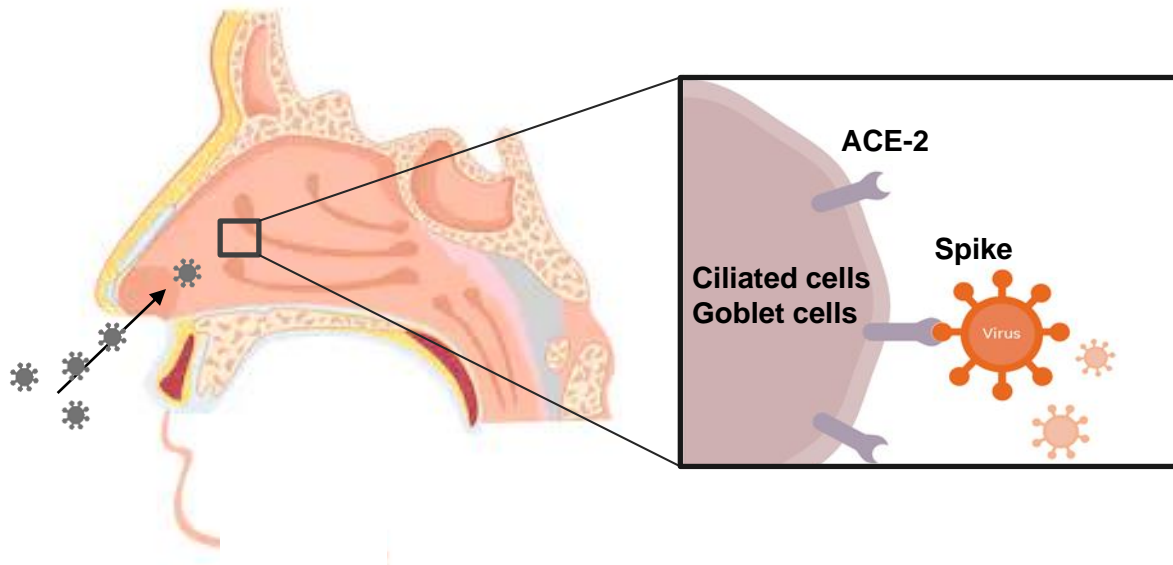
- A specialized immunity at the boundary of the environment and the host – including the respiratory tract
- Requires intranasal dosing to be stimulated in the nose, lungs and airways
- Protects from virus challenge in humans



Xu, et al. (2014) *Pharmaceutics*, 6(3): 378-415

# NASAL MUCOSAL IMMUNITY PROTECTS AGAINST COVID-19

## TREATMENT AT SITE OF VIRAL ENTRY, REPLICATION AND TRANSMISSION



- SARS-CoV-2 has high tropism for the nasal cavity which has a dense cluster of ACE-2 receptors<sup>1</sup>
- CDC has identified loss of smell/taste as an early symptom of COVID-19 infection
- In non-human primates, intramuscular vaccination decreased SARS-CoV-2 in lungs but had no effect on infection in the nasal cavity<sup>2</sup>
- Nasal mucosal immunity affords protection at the site of viral entry and early replication and blocks transmission by shed virus<sup>3</sup>

<sup>1</sup> Sungnak W, Nat Med. 2020;26(5):681-687.

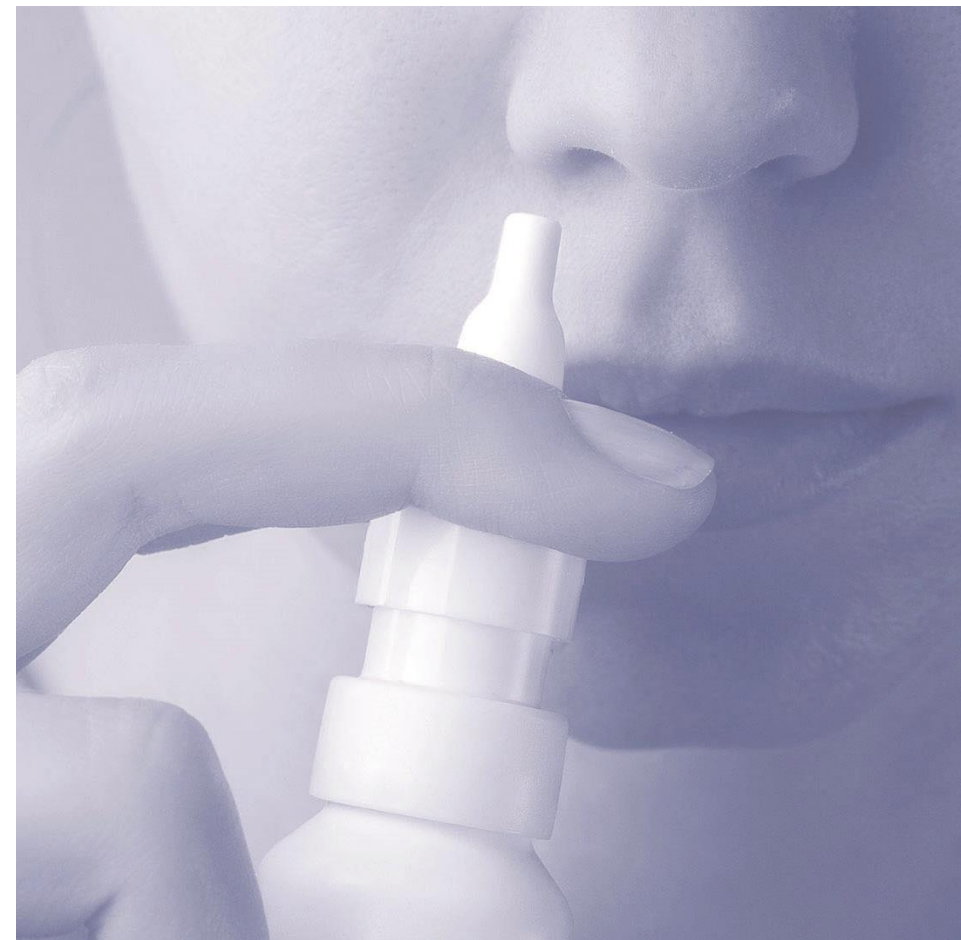
<sup>2</sup> N van Doremalen et al.

<sup>3</sup> Gould VMW, Front Microbiol. May 2017| Volume 8 | Article 900

# COMPELLING CLINICAL EVIDENCE WITH ALTIMMUNE'S INFLUENZA VACCINE CANDIDATE – NasoVAX

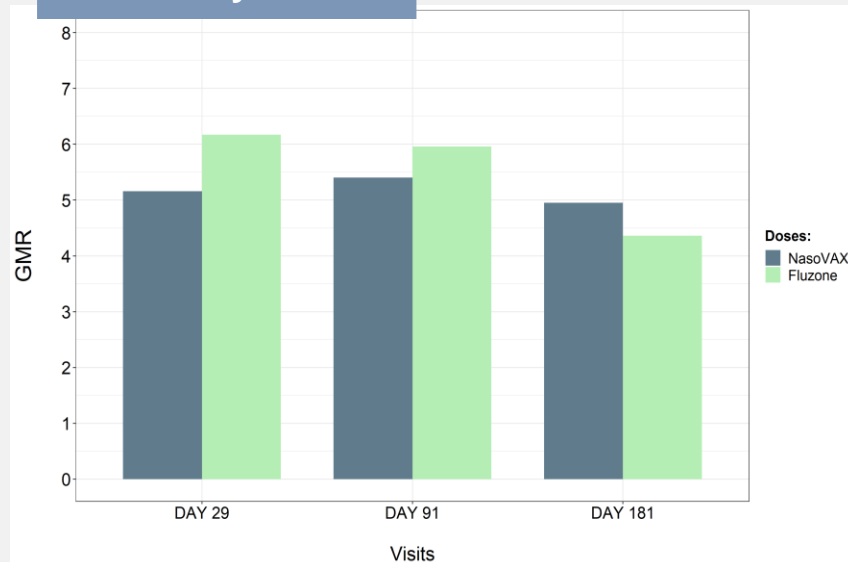
## **NasoVAX Intranasal Influenza Vaccine**

- 100% seroprotection after a single dose
- Neutralizing antibody response equal to Fluzone® commercial influenza vaccine
- Stimulated nasal mucosal and cellular immune responses
- Durable response lasted at least one year after single dose vaccination
- Safety profile indistinguishable from placebo



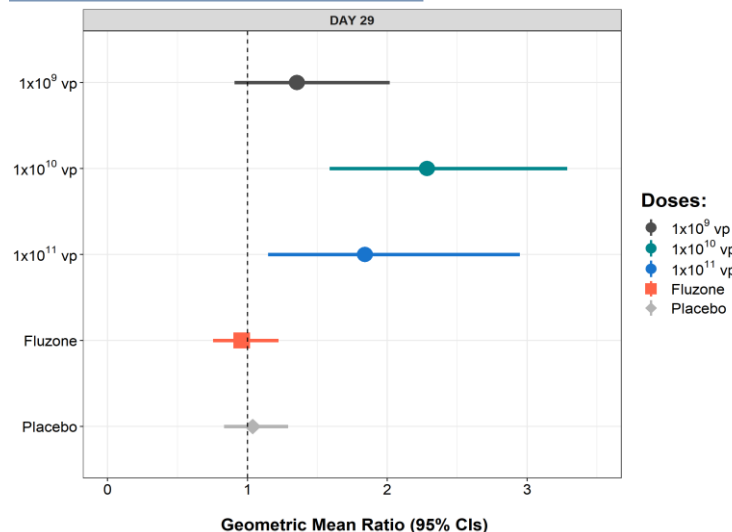
# COMPELLING CLINICAL EVIDENCE WITH ALTIMMUNE'S INFLUENZA VACCINE CANDIDATE – NasoVAX

## Neutralizing Antibody Level



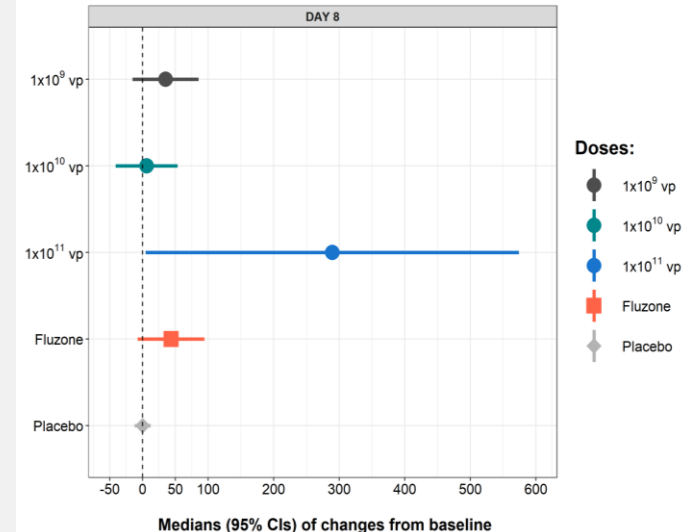
*Strong Antibody response*

## IgA Antibody Level



*Strong mucosal IgA response*

## Ex Vivo ELISpot SUM



*Strong T cell response*

## NasoVAX: HAI and Neutralizing Titers Similar to Fluzone

**Serum HAI Geometric Mean Titers – Day 29**

Vaccine	NasoVAX 10 <sup>9</sup> vp	NasoVAX 10 <sup>10</sup> vp	NasoVAX 10 <sup>11</sup> vp	Placebo	Fluzone
GMT (95% CI)	<b>87.2</b> (52.7, 144.3)	<b>136.1</b> (81.7, 226.6)	<b>164.0</b> (99.0, 271.6)	<b>31.3</b> (18.9, 52.0)	<b>277.7</b> (179.4, 429.9)

**Serum Neutralizing Antibody Geometric Mean Titers – Day 29**

Vaccine	NasoVAX 10 <sup>9</sup> vp	NasoVAX 10 <sup>10</sup> vp	NasoVAX 10 <sup>11</sup> vp	Placebo	Fluzone
GMT (95% CI)	<b>44.9</b> (21.8, 92.3)	<b>113.1</b> (58.0, 220.8)	<b>142.5</b> (93.6, 217.1)	<b>17.8</b> (9.1, 35.0)	<b>162.8</b> (95.8, 276.6)

- Strong NasoVAX HAI titer comparable to Fluzone

- Strong NasoVAX neutralizing antibody titer comparable to Fluzone

# INTRANASAL AdCOVID IS NOT LIKE INTRANASAL FLUMIST®

## FLUMIST VERSUS REPLICATION-DEFICIENT Ad5 VECTOR

FluMist	Replication-deficient Ad5 Vector
Attenuated influenza virus that requires replication for potency	<b>Does not</b> require replication for potency
Activity blocked by pre-existing immunity to influenza	Activity <b>not blocked</b> by pre-existing immunity to Ad5
Low vaccine dose (6 -7 logs)	<b>High</b> vaccine dose (9 -11 logs)
Weak serum Ab response <sup>1</sup>	<b>Strong</b> serum Ab response
Weak T cell response <sup>1</sup>	<b>Strong</b> T cell response

<sup>1</sup> Hoft, et al., Clin Vaccine Immunol. 2017 Jan; 24(1) 1-9



# WHO COVID-19 VACCINE TARGET PRODUCT PROFILE

## ALTIMMUNE VACCINE PLATFORM MEETS WHO'S PREFERRED ATTRIBUTES

Preferred Attribute <sup>1</sup>	Altimune Influenza Vaccine Data
Single dose	<b>Seroprotection with single dose administration</b>
Rapid onset of protection	<b>Strong serological response at 2 weeks</b>
Immunity lasting at least 1 year	<b>Serological response unchanged at 400 days</b>
Non-injected	<b>Intranasal administration</b>
Temperature stability	<b>At least 3 months at 25° C in a liquid formulation</b>
Ability to provide at low cost	<b>High yield, scalable manufacturing process</b>

<sup>1</sup> [https://www.who.int/blueprint/priority-diseases/key-action/WHO\\_Target\\_Product\\_Profiles\\_for\\_COVID-19\\_web.pdf](https://www.who.int/blueprint/priority-diseases/key-action/WHO_Target_Product_Profiles_for_COVID-19_web.pdf)

# COMPARISON OF CURRENT COVID-19 VACCINE CANDIDATES

## PLATFORM CHARACTERISTICS AND PRACTICAL CONSIDERATIONS

Factor	RNA	DNA	Protein	AdCOVID
Number of Doses	2	1-2	1-2	1
Route of Administration	Injection	Injection	Injection	<b>Nasal Spray</b>
Neutralizing antibody / T cells	Yes	Yes	Yes	<b>Yes</b>
Nasal Mucosal Immunity	No	No	No	<b>Yes</b>
Ease of Administration	++	+	++	<b>++++</b>
Other Components Required	No	Yes	Yes	<b>No</b>
Product Stability	+	+++	++	<b>++++</b>

# AdCOVID™: DEVELOPMENT STATUS

## RAPID RESPONSE TO THE COVID-19 PANDEMIC

Activity	Completion
Design and Engineering of Vaccine Candidates	Complete
Preclinical Testing and Down Selection of Candidate	Q2 2020
Toxicology	Not Required
GMP Manufacturing	Q4 2020
Phase 1 Initiation	Q4 2020

# AdCOVID™: VACCINE ATTRIBUTES IDEAL FOR COVID-19

## MEETS THE CRITERIA FOR AN EFFECTIVE EASY-TO-USE VACCINE

### COVID-19 Challenge

### Altimune Platform Attributes

*Immune mechanism of protection is not well defined*

**Broad activation of antibody, mucosal and cellular immune arms**

*Infection occurs through the nose and airways*

**Intranasal delivery establishes nasal mucosal immunity at point of viral entry**

*Vaccine distribution and administration on a global scale represents significant challenge*

**Stable, single dose vaccine delivered without needles**

# NasoShield: FUNDED THROUGH A DEVELOPMENT CONTRACT WITH BARDA

Phase 1b initiated, data expected in H2 2020



Received \$3.7M BARDA funding to initiate Phase 1b

\$133.7M total contract value through Phase 2

Stockpiling of vaccine may occur prior to licensure<sup>1</sup>

- Nuthrax® initial stockpiling valued at \$261M with a \$1.5 billion total potential contract value

<sup>1</sup> <https://globalbiodefense.com/2019/08/01/barda-exercises-first-option-in-transition-from-biothrax-to-av7909-anthrax-vaccine/>

## DIFFERENTIATED

### Only single-dose vaccine

currently in development

### Intranasal spray

### Faster protection

### Superior logistics

- No cold chain distribution
- Self administered/no injection required

## NasoShield Differentiated Anthrax Vaccine

## COMPETITION

Biothrax® - Only approved vaccine

- **3 dose** regimen
- **Requires an adjuvant**
- Subcutaneous **injections**

NuThrax® (AV7909) – Phase 3

- **2 dose** regimen
- Requires **2 adjuvants**
- Intramuscular **injections**



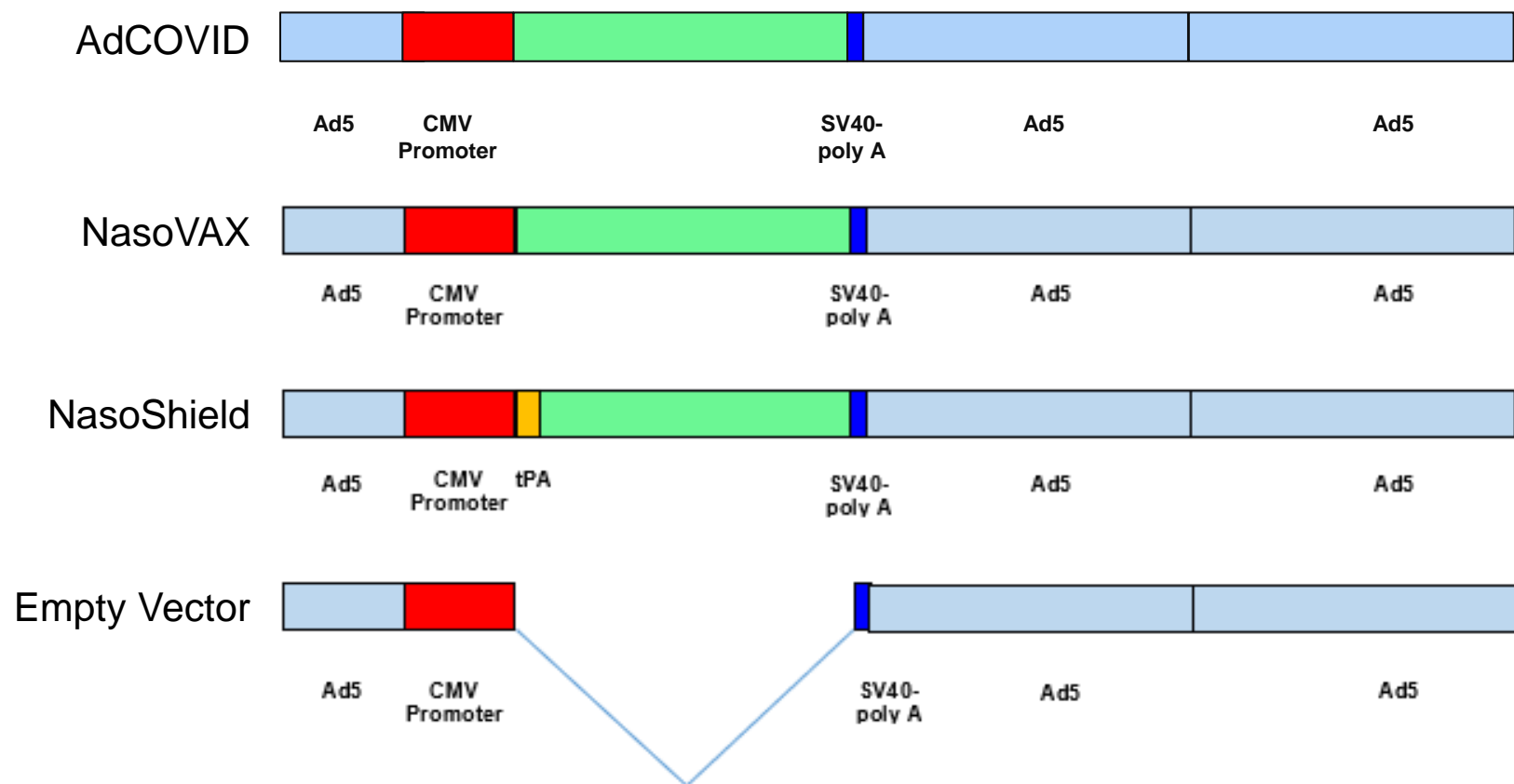


# **INTRANASAL THERAPEUTIC**

# T-COVID™: BASED ON RD-Ad5 VECTOR VACCINE PLATFORM

## SINGLE DOSE INTRANASAL THERAPEUTIC FOR THE TREATMENT OF EARLY COVID-19

- Identical vector technology used for AdCOVID (COVID-19), NasoVAX (seasonal influenza) and NasoShield (anthrax) vaccines



# T-COVID™: MODULATES INNATE IMMUNITY IN ANIMAL MODELS

## PRECLINICAL STUDIES FUNDED BY NIAID & CONDUCTED AT UTAH STATE UNIVERSITY

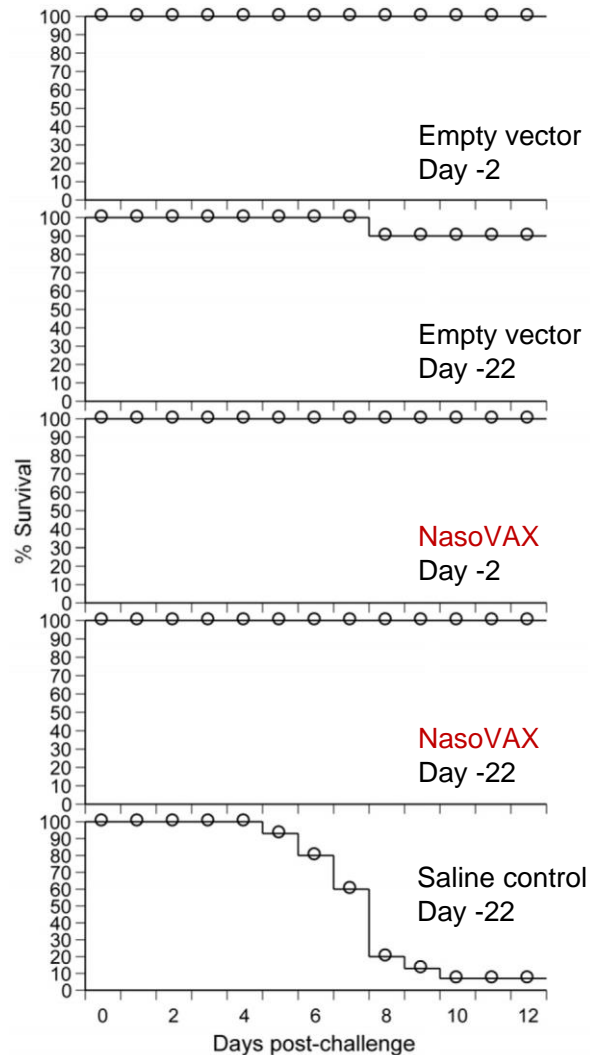


Data from 6 preclinical studies of influenza infection funded by NIAID and conducted at Utah State University showed:

- Rapid, non-antigen mediated modification of host cytokine response
- Protection from lethal challenge occurs within days and lasts for weeks
- Significantly decreased inflammation following respiratory virus infection

# PROTECTION ESTABLISHED IN ANIMALS WITHIN 2 DAYS

## EFFECTS SEEN WITH ADMINISTRATION OF EITHER EMPTY VECTOR OR NasoVAX



### Experimental design

Day -2 or Day -22

- Intranasal administration ( $2.5 \times 10^8$  ifu) of either empty vector (vector without antigen) or NasoVAX (vector with antigen)

Day 0

- Challenge with influenza A/CA/04/2009 ( $3 \times LD_{50}$ )

### Results

- Protection provided by both empty vector and NasoVAX
- Protection occurred when treated between 2- and 22-days prior to challenge
- Identical results obtained following challenge with other influenza A strains, influenza B, H5N1 and H7N9

# REDUCED INFLUENZA-INDUCED LUNG INFLAMMATION

EFFECT SEEN WITH ADMINISTRATION OF EITHER EMPTY VECTOR OR NasoVAX

## RD-Ad5 Vector

Treatment:	None	None	Empty Vector	NasoVAX
Influenza Challenge:	Yes	No	Yes	Yes

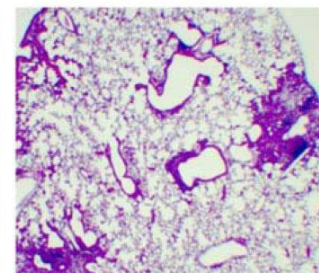
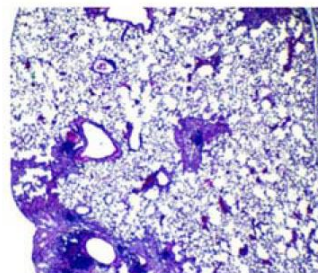
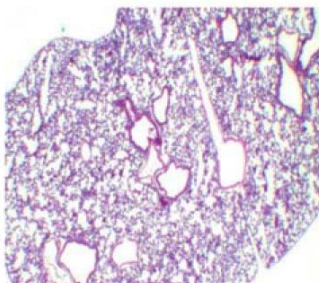
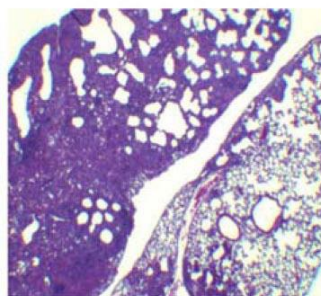
A

B

C

D

Low mag



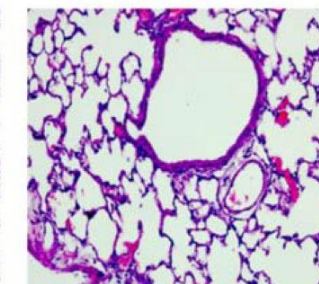
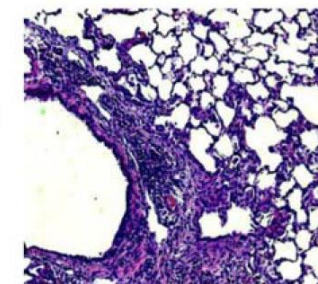
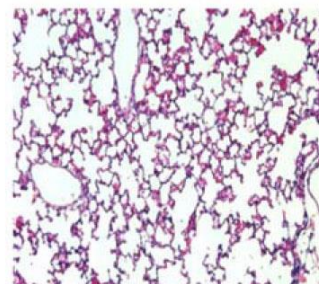
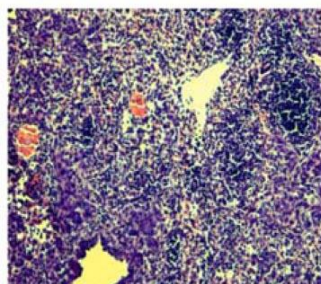
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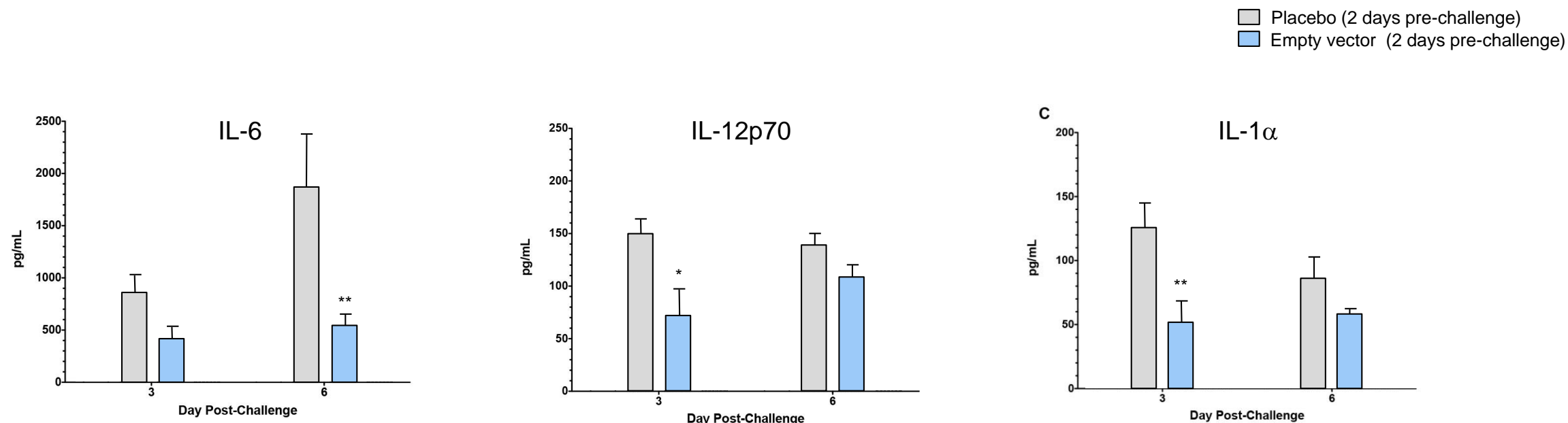
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- Intranasal administration of either empty vector or NasoVAX on Day -2
- Challenge with influenza A/PR/08/34 (4 x LD<sub>50</sub>) on Day 0
- Lung histology on Day +19 post-challenge

# DECREASED INFLAMMATORY CYTOKINES IN LUNGS

## RD-Ad5 VECTORS MODULATE THE INNATE IMMUNE RESPONSE TO INFECTION



Balb/c mice administered an intranasal dose of RD-Ad5 ( $3.2 \times 10^8$  ifu) on Day -2 and challenged with influenza A/CA/04/2009 ( $3 \times \text{LD}_{50}$ ) on Day 0. Cytokines in lung lavage were analyzed on Days 3 and 6; mean  $\pm$  SD,  $p \leq 0.05$ , \*\*  $p \leq 0.01$  by ANOVA



# TARGET PRODUCT PROFILE

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<b>Indications:</b>	Prevention of clinical worsening and hospitalization of ambulatory patients with early COVID-19
	Prevention of COVID-19 in individuals at high-risk of infection (known exposures)
	Potential first-line community protection against future strains of coronavirus and other pandemics
<b>Mode of administration:</b>	Single dose, intranasal, with potential for self-administration
<b>Storage and distribution:</b>	Stable at ambient temperatures for 3 or more months
<b>Safety profile:</b>	Similar to placebo

# PHASE 1/2 CLINICAL TRIAL DESIGN

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- 96 community-based patients with fever, cough, or shortness of breath, with onset of symptoms within 48 hours, and a diagnosis of COVID-19 within 24 hours, will be randomized 1:1 to NasoVAX or placebo administered as a single 0.5 mL nasal spray on the day of diagnosis
- The study will consist of 3 cohorts of increasing age and risk for complications of COVID-19
- Primary efficacy endpoint
  - Proportion of patients with clinical worsening, defined as a 4% decrease in pulse oxygen saturation ( $\text{SpO}_2$ ), or hospitalization
- Secondary endpoints
  - Average decrease in resting  $\text{SpO}_2$
  - Average increase in resting pulse rate
  - Proportion of patients requiring oxygen supplementation and mechanical ventilation
- FDA agreed to allow Altimune use its existing lot of RD-Ad5-based NasoVAX influenza vaccine for this trial so that it may be initiated quickly



# LIVER DISEASE

# NASH AND NAFLD

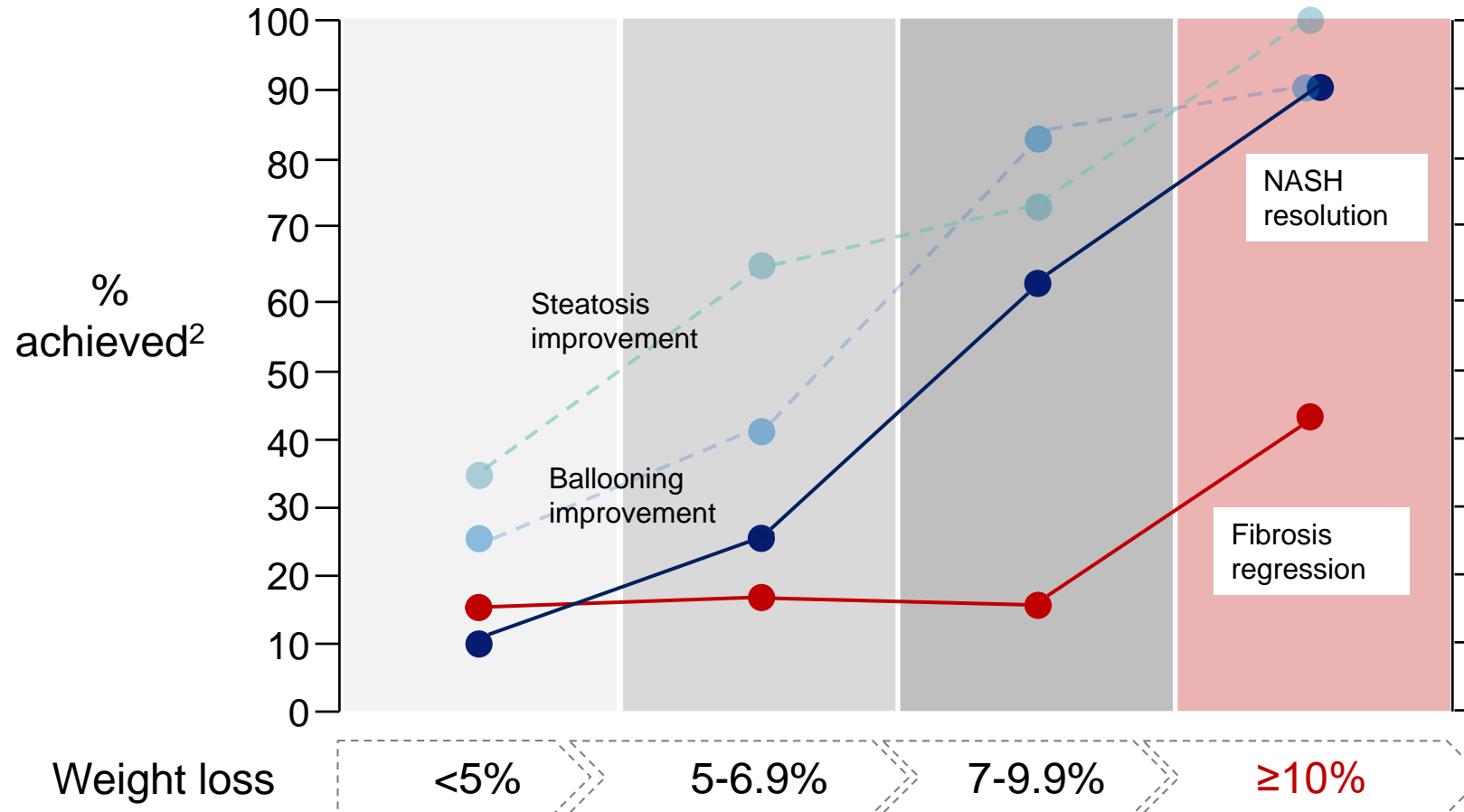
## HEPATIC MANIFESTATIONS OF OBESITY AND METABOLIC SYNDROME

- NAFLD is present in up to **90% of obese patients**, and **~20%** of NAFLD patients **progress to NASH**<sup>1</sup>
- Up to **40% of NASH patients develop NAFLD** recurrence one year after liver transplant—the underlying metabolic disease is still present<sup>2</sup>
- The **treatment of obesity** is the cornerstone of treating NASH and the principal morbidities of NASH<sup>1,3</sup>
- Drugs in development should target the **weight loss range achieved by bariatric surgery**<sup>4</sup>

<sup>1</sup>Glass LM, Fed Pract 2019; <sup>2</sup>Dureja, P, Transplantation 2011; <sup>3</sup>Perazzo H, Liver Int 2017; <sup>4</sup>Armstrong M, Vantage December 14, 2018

# SUBSTANTIAL BODY WEIGHT LOSS IS NECESSARY TO BLUNT NASH PROGRESSION

10% OR MORE WEIGHT LOSS MUST BE ACHIEVED<sup>1</sup>



The **treatment of obesity** remains the cornerstone of NASH and NAFLD therapy

**Meaningful weight loss** is rarely achieved without medical intervention

**Current drugs have failed** to deliver the weight loss achieved by bariatric surgery

<sup>1</sup> Promrat et al Hepatology 2010; Glass et al Dig Dis Sci 2015; Vilar-Gomez et al Gastroenterology 2015; Marchesini et al Hepatology 2016; Koutoukidis et al JAMA Intern Med 2019

<sup>2</sup> Adapted from Harrison, EASL 2019, Traber, Discovery on Target: Targeting NASH 2019, and Vilar-Gomez, Gastroenterology 2015

# SNAPSHOT OF COMPOUNDS IN ADVANCED NASH DEVELOPMENT

## MOST AGENTS FAIL TO ACHIEVE MEANINGFUL LEVELS OF WEIGHT LOSS

Agent	Author (year)	Mechanism	Weight Loss (%)
Obeticholic acid	Younossi, ZM 2019 <sup>1</sup>	FXR agonist	~2%
Resmetirom	Harrison, SA 2018 <sup>2</sup>	THR $\beta$ agonist	no change
Aldafermin (3mg) <sup>†</sup>	Harrison, SA 2019 <sup>3</sup>	FGF19 agonist	1.3%
Pegbelfermin (10 mg) <sup>††</sup>	Sanyal, A 2018 <sup>4</sup>	FGF21 agonist	2.2%
AKR-001 (70 mg)	Ritchie, M 2020 <sup>5</sup>	FGF21 agonist	no change
Firsocostat	Lawitz, EJ 2018 <sup>6</sup>	ACC inhibitor	no change
Elafibranor	Ratziu, V 2016 <sup>7</sup>	PPAR $\alpha/\delta$ agonist	no change

<sup>†</sup> No information has been made public on 1mg dose

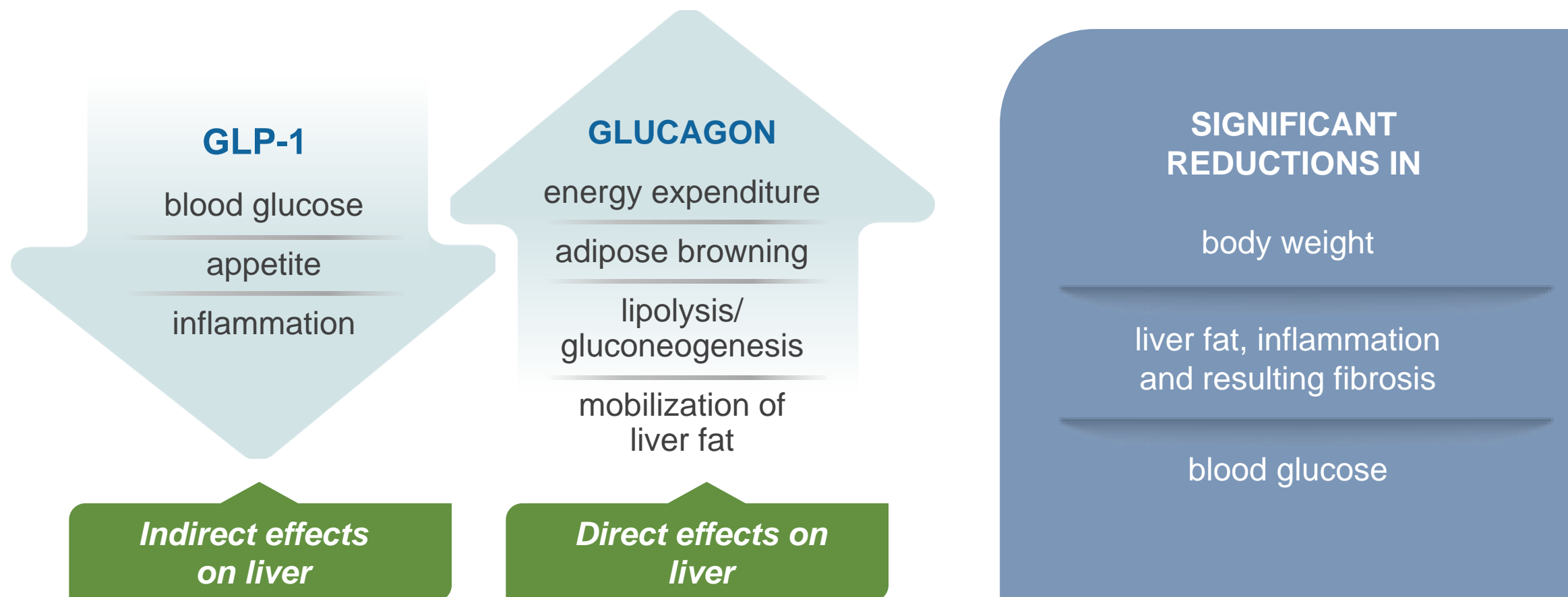
<sup>††</sup> Gain of 0.6% on 20mg dose

<sup>1</sup>Younossi, YM, et al. (2019) *Lancet* 394: 2184-96; <sup>2</sup>Harrison, SA, et al. *Lancet* 394: 2012-24; <sup>3</sup> Harrison, SA, et al. (2019) *Lancet* 391:1174-85; <sup>4</sup>Sanyal, A, et al. (2018) *Lancet* 392:2705-17; <sup>5</sup>Ritchie, M, et al. (2020) *Exp Opin Invest Drugs*, 29:2, 197-204; <sup>6</sup> Lawitz, EJ, et al. (2018) *Clin Gastroenterol Hepatol* 16:1983-91; <sup>7</sup>Ratziu, V, et al. (2016) *Gastroenterol* 150: 1147-59



# ALT-801: GLP-1/GLUCAGON RECEPTOR DUAL AGONIST

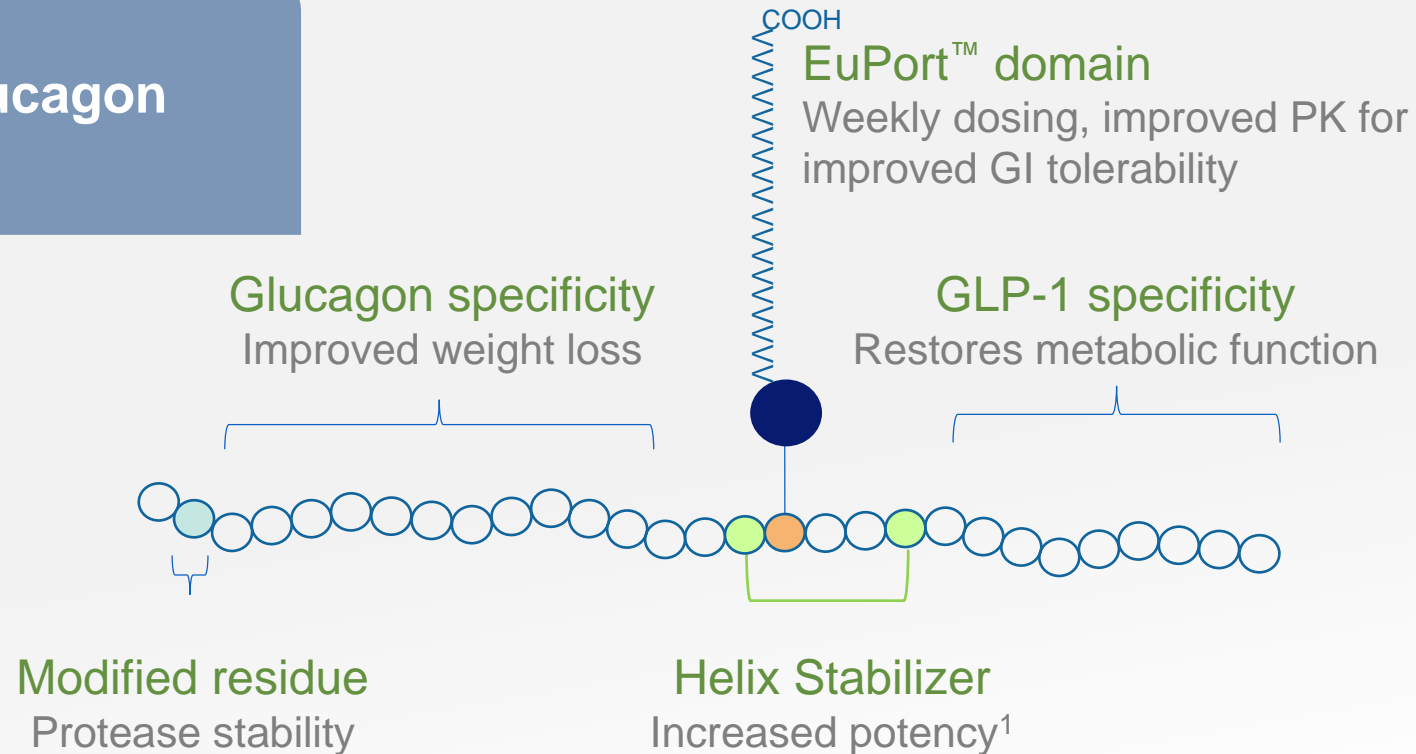
## OPTIMIZED FOR NASH AND WEIGHT LOSS



# ALT-801: RATIONALLY DESIGNED AND HIGHLY DIFFERENTIATED

PROPRIETARY EuPort™ DOMAIN PROVIDES PROLONGED SERUM HALF-LIFE AND REDUCED PEAK CONCENTRATION

## Balanced GLP-1:Glucagon Agonism



<sup>1</sup>Guarracino DA et al., Chem Rev. 2019 Sep 11;119(17):9915-9949

# ALT-801: BALANCED 1:1 GLP-1/ GLUCAGON AGONISM

## KEY TO ACHIEVING IMPROVED WEIGHT LOSS

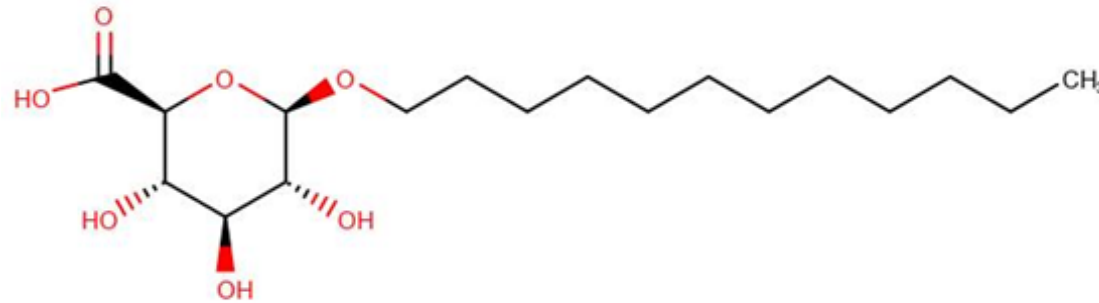
- By activation of a 2<sup>nd</sup> mechanism, GLP-1/glucagon receptor dual agonists promote greater weight loss than GLP-1 agonists alone
- As demonstrated by ALT-801 in animal models, dual agonists have potential for greater weight loss with lower dose
- Sustained effects on both receptors are necessary to achieve improved weight loss
- Single receptor-biased ligands retain effects on only one receptor over a prolonged dosing period<sup>1</sup>
- By achieving 1:1 balance, the synergies of GLP-1 and glucagon are maintained throughout the entire dosing period

<sup>1</sup> Day JA, et al. *Peptide Science* 2012;98:443-50

# ALT-801: IMPROVED PK FOR BETTER GI TOLERABILITY

PROLONGED SERUM HALF-LIFE AND REDUCED PEAK CONCENTRATION MAY LEAD TO BETTER TOLERABILITY

- EuPort™ domain has surfactant-like properties – containing a water-soluble portion and a fat-soluble portion:



- When conjugated to a small peptide the EuPort domain can:
  - Slow the entry of the peptide into the blood lowering the peak concentration ( $C_{max}$ ) of the peptide for improved tolerability
  - Significantly extend the half-life ( $t_{1/2}$ ) of the peptide from minutes to a week or more which has been shown to improve tolerability for GLP-1 receptor agonists<sup>1</sup>

# ALT-801: SUMMARY OF NON-CLINICAL STUDIES COMPLETED TO DATE

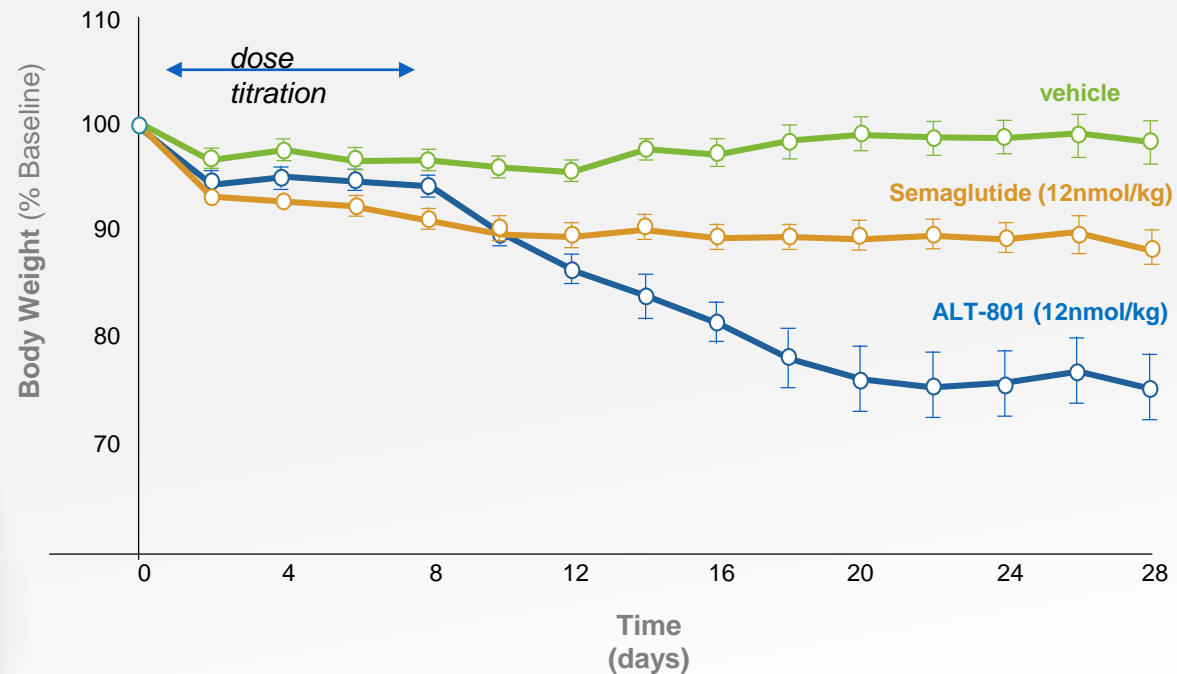
## THOROUGH INVESTIGATION OF COMPOUND CHARACTERISTICS

Species	Model	Treatment	Location	Results	Assessment
Mouse	Gubra DIO	12 weeks	Gubra (Denmark)	25% body weight loss 68% liver weight loss 74% decrease in fibrosis	ALT-801 returns animals to lean normal body/liver weight
Mouse	Diet Induced Obesity	4 weeks	The Jackson Laboratory (USA)	25% body weight loss	ALT-801 returns animals to lean normal body weight
Rat	Diet Induced Obesity	4 weeks	Charles River (USA)	40% body weight loss 52% liver weight loss	ALT-801 returns animals to lean normal body/liver weight
Mouse	Primary pharmacology	Single Dose	The Jackson Laboratory (USA)	Normalized glucose	ALT-801 more potent than semaglutide with prolonged gluco-regulatory effect
Mouse	PK	Single Dose	The Jackson Laboratory (USA)	ALT-801 later T <sub>max</sub> , lower C <sub>max</sub> vs semaglutide	More gradual PK for improved tolerability
Rat	PK	4 weeks	Charles River (USA)	Concentration still rising at 8hr	ALT-801 later T <sub>max</sub> , lower C <sub>max</sub> vs semaglutide
Minipig	PK	Single dose	Sinclair Research (USA)	T <sub>1/2</sub> 52hr, MRT 86hr	ALT-801 T <sub>1/2</sub> and MRT longer than literature standard (semaglutide) in minipigs
Human	Receptor activation	Cells in vitro	DiscoverX (USA)	GLP-1 EC <sub>50</sub> 38pM Glucagon EC <sub>50</sub> 42pM	ALT-801 highly potent, evenly balanced dual agonist

# ALT-801

25% REDUCTION IN BODY WEIGHT TO CHOW-FED LEAN NORMAL RANGE

## Mouse DIO Model After 4 Weeks of Treatment



More than 2x the weight loss of **semaglutide**

Body weight decreased to **lean normal range**

# ALT-801

## REDUCTION IN LIVER FAT TO CHOW-FED LEAN NORMAL

Gubra Model After 12 Weeks of Treatment

liver fat

VEHICLE

SEMAGLUTIDE

ELAFIBRANOR

ALT-801

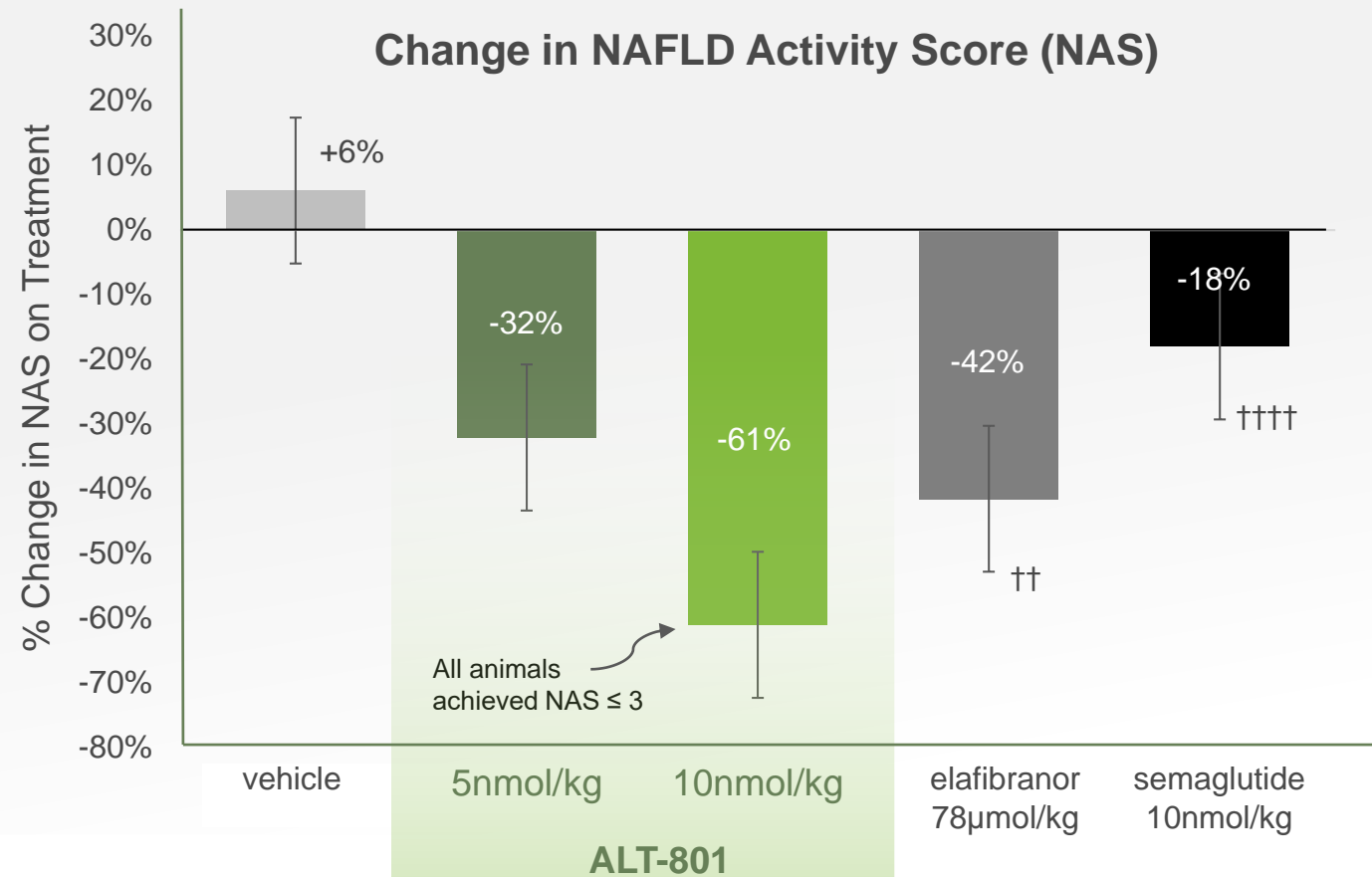
vein



# ALT-801

## GREATER REDUCTION IN NAFLD ACTIVITY SCORE (NAS)

Gubra NASH Mouse Model After 12 Weeks of Treatment

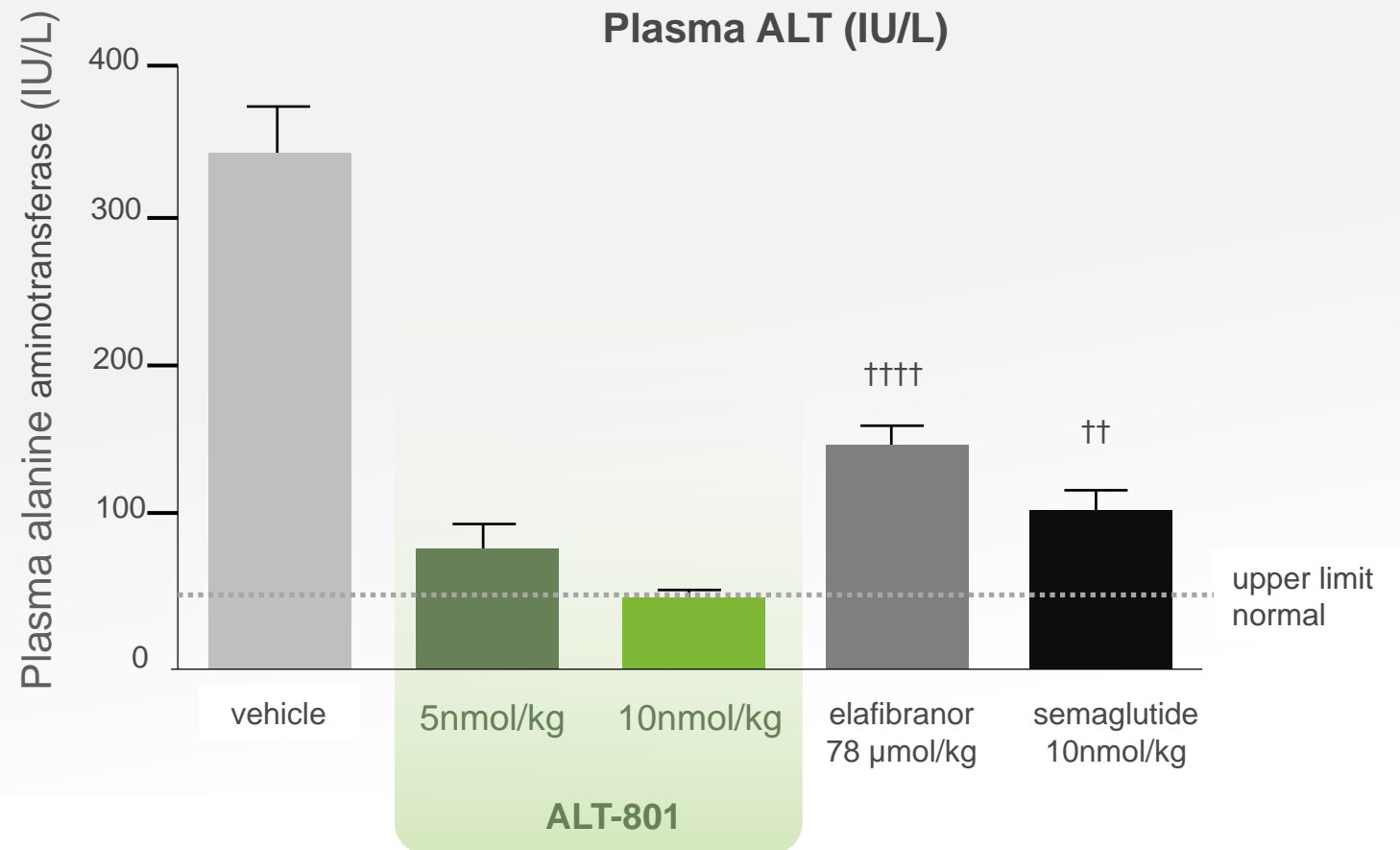


Mean (SE), 1-way ANOVA with Dunnett's adjustment for multiplicity  
††  $p < .01$ , †††  $p < .001$ , ††††,  $p < .0001$  vs. ALT 10 nmol/kg (n=11-12)

# ALT-801

## PLASMA ALT NORMALIZED

Gubra NASH Mouse Model After 12 Weeks of Treatment

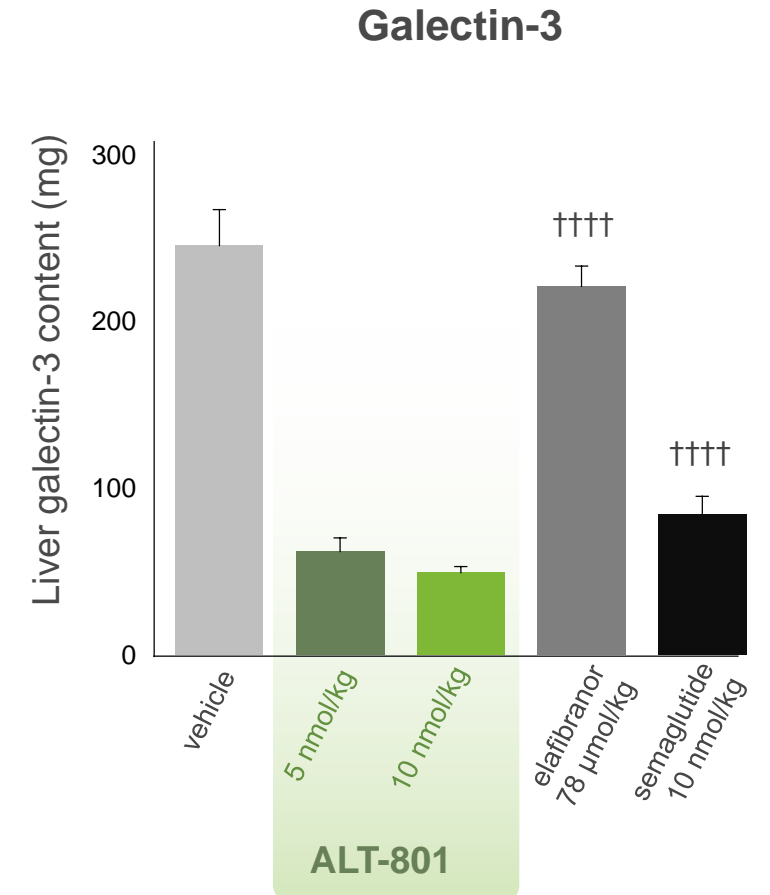
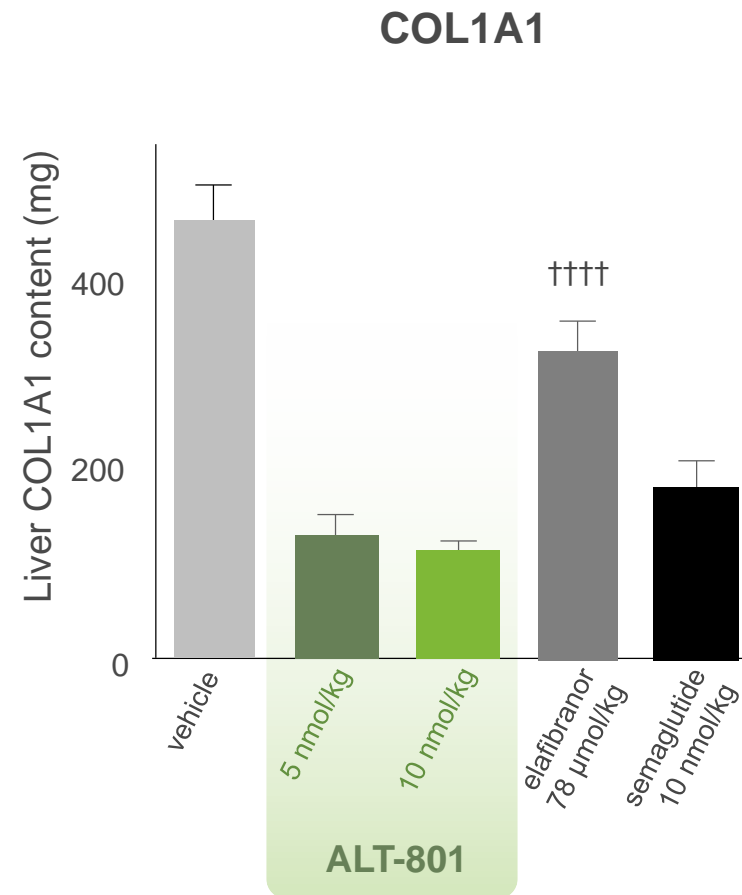


Mean (SE), 1-way ANOVA with Dunnett's adjustment for multiplicity  
††  $p < .01$ , †††  $p < .001$ , ††††,  $p < .0001$  vs. **ALT-801** 10 nmol/kg (n=11-12)

# ALT-801

## GREATER EFFECTS ON FIBROSIS

Gubra NASH Mouse Model After 12 Weeks of Treatment



Mean (SE), 1-way ANOVA with Dunnett's adjustment for multiplicity  
††  $p < .01$ , †††  $p < .001$ , ††††,  $p < .0001$  vs. ALT 10 nmol/kg (n=11-12)

# ALT-801

## SUMMARY

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- ALT-801 preclinical results showed superior reductions in nearly all measured NASH parameters compared to semaglutide or elafibranor, returning many parameters to lean normal range:
  - Body and liver weight
  - NAS and ALT
  - Collagen (COL1A1 and galectin-3) content
  - Liver fat, cholesterol and triglycerides
- ALT-801 improved metabolic function and exhibited pleiotropic effects in preclinical testing across multiple pathways involved in NASH
- ALT-801 resulted in more profound suppression of genes associated with steatosis, inflammation and stellate cell fibrosis by RNA sequencing compared to elafibranor

# ALT-801

## PROJECTED PHASE 1 CLINICAL TIMELINE

### Phase 1 Summary

1. SAD in Australia: ~50 patients
2. 6-week MAD in Australia: ~60 patients
3. 12-week parallel-dose in US: ~50 patients

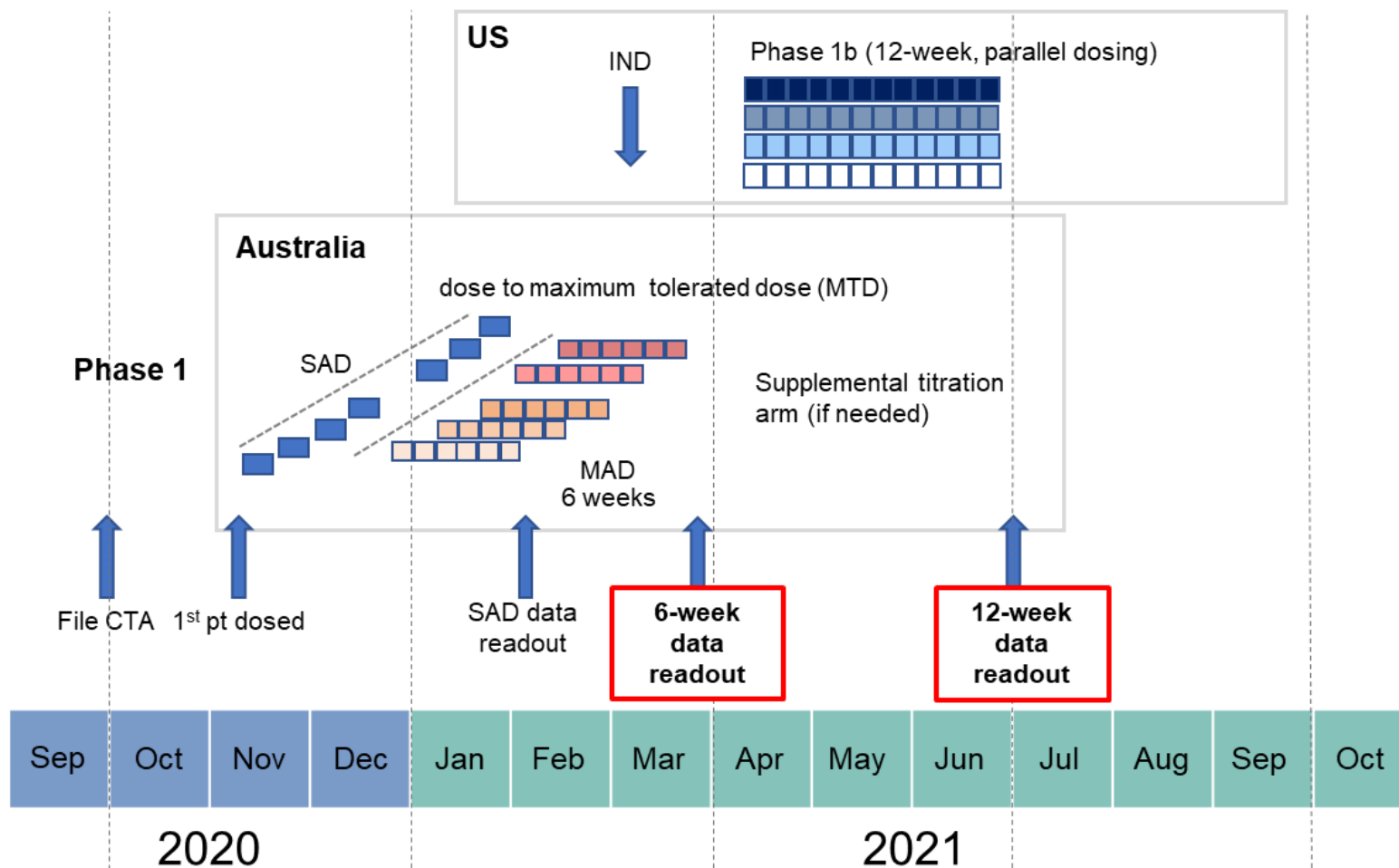
Patient population: Overweight and obese non-diabetics

### Endpoints in 6-week study

- Safety, tolerability
- Pharmacokinetics (PK)
- Preliminary read out on weight loss, resting energy expenditure (REE), and liver fat
- Glucose homeostasis

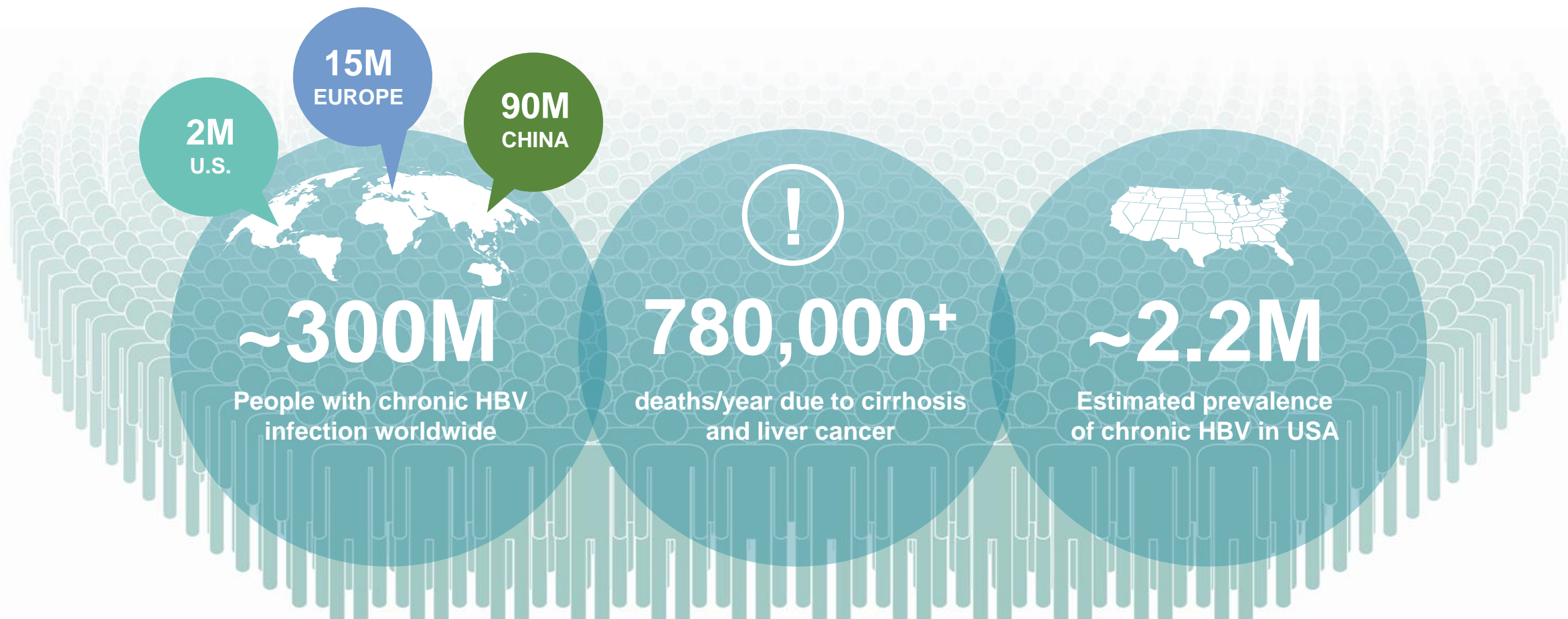
### Endpoints in 12-week study

- Safety, tolerability
- PK
- **Weight loss**
- Liver Fat by MRI-PDFF; lean body mass;
- Non-invasive fibrosis markers
- REE and respiratory quotient (Rq), lipids
- Glucose homeostasis



# HepTcell: T CELL STIMULANT THERAPEUTIC FOR CHRONIC HEPATITIS B

## SIGNIFICANT OPPORTUNITY TO IMPROVE CURRENT HBV CURE RATES



# CURRENTLY APPROVED HBV THERAPEUTICS DO NOT LEAD TO A CURE

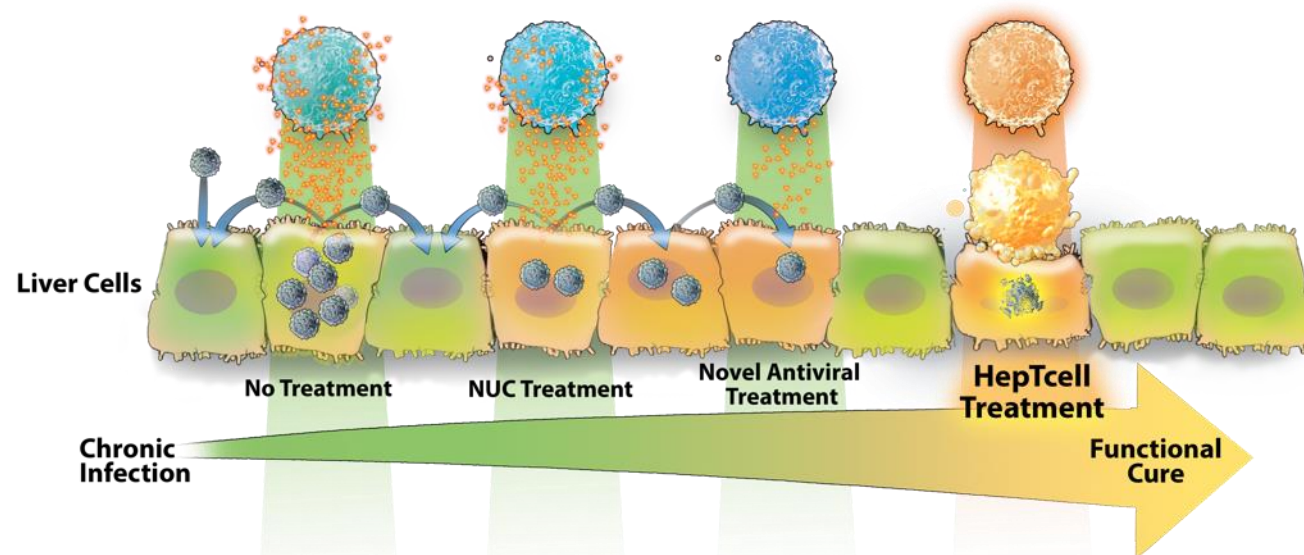
## IMMUNE ACTIVATION WILL BE REQUIRED FOR SIGNIFICANT IMPACT

Current antivirals prevent disease progression but **rarely clear chronic infection**

**Breaking T cell immune tolerance is key to functional cure**

Newer direct-acting antivirals **unlikely to result in immune reactivation alone**

**HepTcell is designed to “wake up” dormant T-cells** to eliminate infection





# HepTcell: PHASE 1 SAFETY AND IMMUNOGENICITY STUDY

STUDY IN SUBJECTS CHRONICALLY INFECTED WITH HBV

## POPULATION



60 HBeAg- chronic HBV patients

Well controlled on licensed antivirals (entecavir or tenofovir)

## DESIGN



3 injections 28 days apart

4 different regimens vs placebo and adjuvant alone

## RESULTS



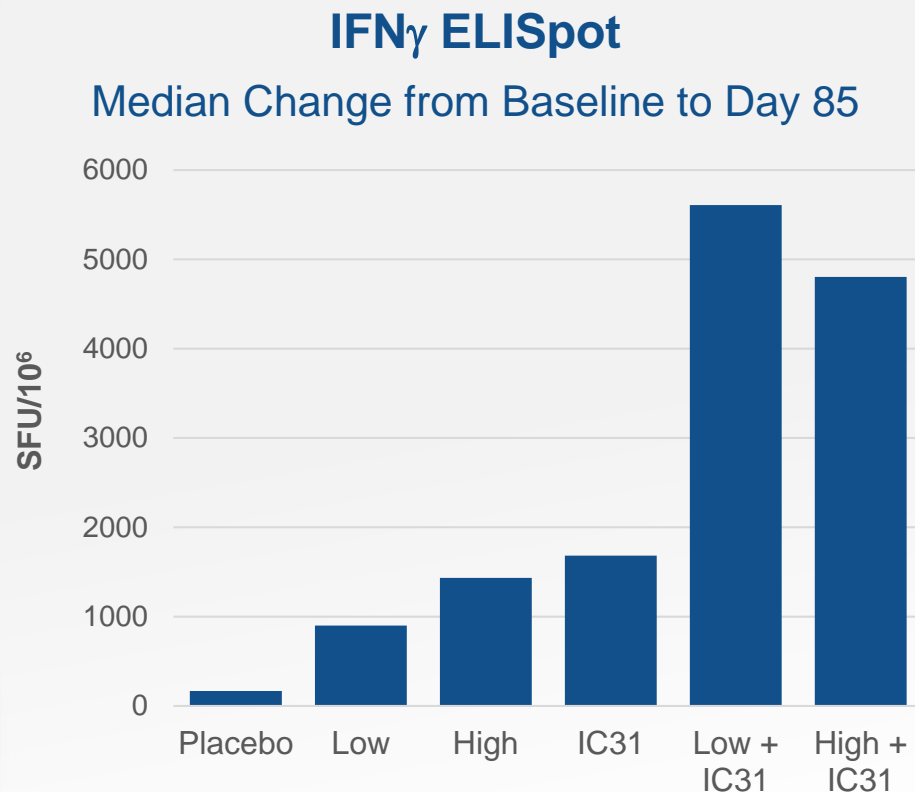
All regimens well tolerated

No liver flares or autoimmune events

Increased T cell response to HBV peptides in adjuvanted regimens

# HepTcell: PHASE 1 SAFETY AND IMMUNOGENICITY STUDY

## Anti-HBV T-cell Response After 3 Injections



HepTcell breaks immune tolerance in chronic hepatitis B patients

T cell responses strongest when combined with IC31<sup>TM</sup> adjuvant

HepTcell dose and use of adjuvant confirmed for Phase 2 studies

## DIFFERENTIATED

Designed to **restore immune control of infection** instead of targeting viral pathway

**Targets all HBV genotypes**

**Complimentary to currently approved antivirals** and other products in development

Phase 1 data in chronically infected population **documented HBV T cell stimulation**

# HepTcell Specific Immunotherapy for Chronic HBV

## DEVELOPMENT PLAN

**File IND** in Q2 2020 following **successful pre-IND meeting**

Phase 2 program in **expanded chronic HBV patient population**

**Exploit immune activation of HepTcell** in combination with other novel HBV therapeutics

**Seek commercial partner** with complementary therapeutic product

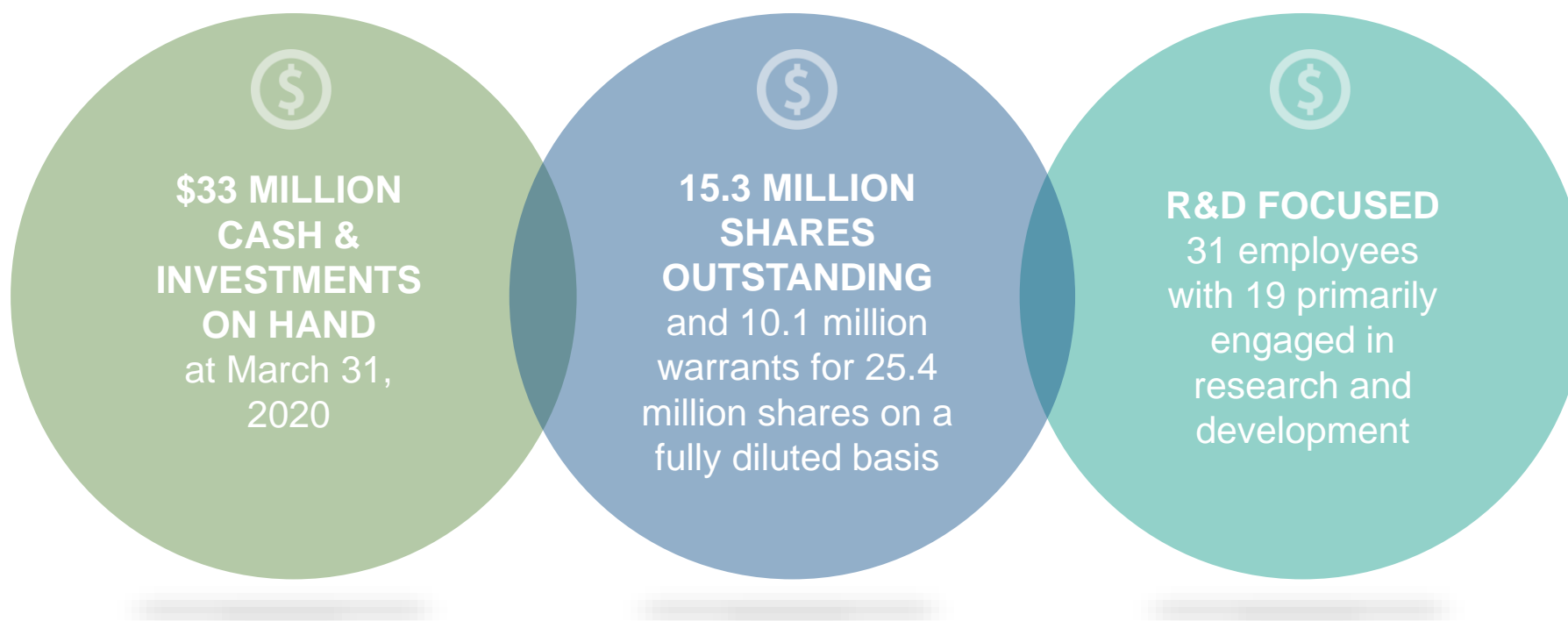
# STRONG INTELLECTUAL PROPERTY PORTFOLIO

SIGNIFICANT PATENT TERM REMAINING IN ALL FAMILIES

<b>ALT-801</b>	2 Granted US patents   Patent applications other territories Expiry $\geq$ 2035
<b>HepTcell</b>	Granted US, KR patent   Patent applications other territories Expiry $\geq$ 2033
<b>ALT-702</b>	Granted US patent   Patent applications other territories Expiry $\geq$ 2034
<b>NasoShield</b>	Granted US, EP, JP patent Expiry $\geq$ 2032
<b>NasoVAX</b>	Granted US, EP, JP patent   Patent applications other territories Expiry $\geq$ 2032
<b>AdCOVID</b>	Patents pending

# FINANCIAL HIGHLIGHTS

ALTIMMUNE IS WELL POSITIONED TO ADVANCE MULTIPLE PRODUCT CANDIDATES



# STRONG EXECUTIVE MANAGEMENT TEAM



**Vipin K. Garg, PhD**  
President & CEO



**Will Brown, CPA, MBA**  
Chief Financial Officer



**Scott Harris, MD**  
Chief Medical Officer



**Scot Roberts, PhD**  
Chief Scientific Officer



**Bertrand Georges, PhD**  
Chief Technology Officer



**José Ochoa, JD**  
Chief Business Officer







NASDAQ: ALT

# CORPORATE PRESENTATION

June 2020