

# CORPORATE PRESENTATION

August 2020



# FORWARD-LOOKING STATEMENTS

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# **INVESTMENT HIGHLIGHTS**



Proprietary intranasal vaccine platform ideally suited for rapid response to pandemic situations, including COVID-19



Developing next generation peptide therapeutics for liver disease Near-term value-driving catalysts with sufficient cash and investments on

hand



# 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



# ADVANCING STRONG DEVELOPMENT PIPELINE

PROGRAM	PRODUCT NAME	PRECLINICAL PHASE 1	PHASE II PHASE III	STATUS
INTRANASAL VACCINES	AdCOVID™	COVID-19		Phase 1 trial initiation targeted for Q4 2020
	NasoShield™	Anthrax	Funded by BARDA \$133.7M Potential Value	In Phase 1b, data targeted 2H 2020
	NasoVAX™	Seasonal & Pandemic Influenz	a	Ready for Phase 2b
INTRANASAL THERAPEUTIC	T-COVID™	COVID-19	Phase 1/2 Trial Funded by DoD	Phase 1/2 trial initiation targeted for Q3 2020
LIVER DISEASES	ALT-801	NASH		Advancing into Phase 1 development in 2020
	HepTcell™	Chronic Hepatitis B		Advancing into Phase 2 development in 2020



# FINANCIAL HIGHLIGHTS

ALTIMMUNE IS WELL POSITIONED TO ADVANCE MULTIPLE PRODUCT CANDIDATES

APPROXIMATELY \$214 MILLION CASH & INVESTMENTS ON HAND at July 31, 2020 32.9 MILLION SHARES OUTSTANDING and 3.4 million warrants and options for 36.3 million shares on a fully diluted basis

R&D FOCUSED 31 employees with 19 primarily engaged in research and development

(\$)

# STRONG INTELLECTUAL PROPERTY PORTFOLIO

SIGNIFICANT PATENT TERM REMAINING IN ALL FAMILIES

AdCOVID	Issued claims in EP, Prioritized review of pending US claims
NasoShield	Granted US, EP, JP patent Expiry $\ge 2032$
NasoVAX	Granted US, EP, JP patent   Patent applications other territories Expiry $\geq$ 2032
T-COVID	Prioritized review of pending US claims
ALT-801	2 Granted US patents   Patent applications other territories Expiry $\geq$ 2035
HepTcell	Granted US patent   Patent applications other territories Expiry $\geq$ 2033

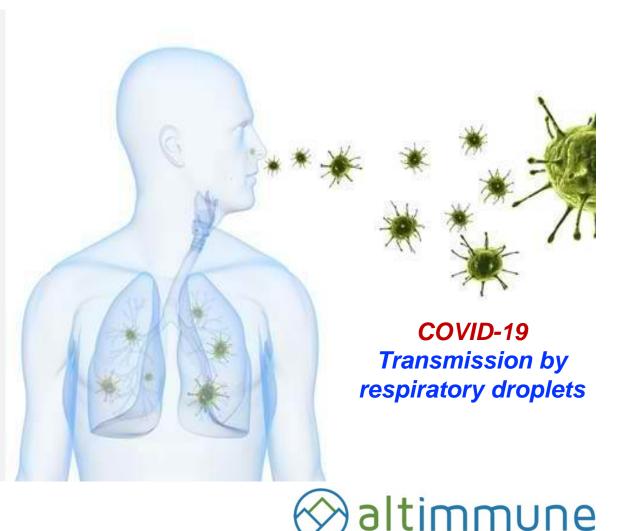




INTRANASAL VACCINES

# **IMPORTANT CONSIDERATIONS FOR AN IDEAL COVID-19 VACCINE**

- Broad protection required: vaccine should activate multiple arms of immune system
- Initial infection occurs through nasal/oral airways: *intranasal vaccination provides nasal mucosal immunity, a first line of defense to respiratory infection*
- Suitability for global vaccine distribution: single dose, easily administered, no cold chain requirements



# Adcovid<sup>TM</sup>: Single-dose intranasal vaccine for covid-19 ideally suited for pandemic respiratory virus

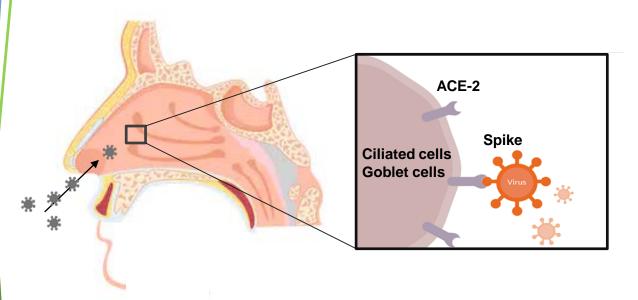
#### Intranasal COVID-19 Vaccine Designed for:

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





### NASAL MUCOSAL IMMUNITY HAS POTENTIAL TO PROTECT AGAINST COVID-19 TREATMENT AT SITE OF VIRAL ENTRY, REPLICATION AND TRANSMISSION



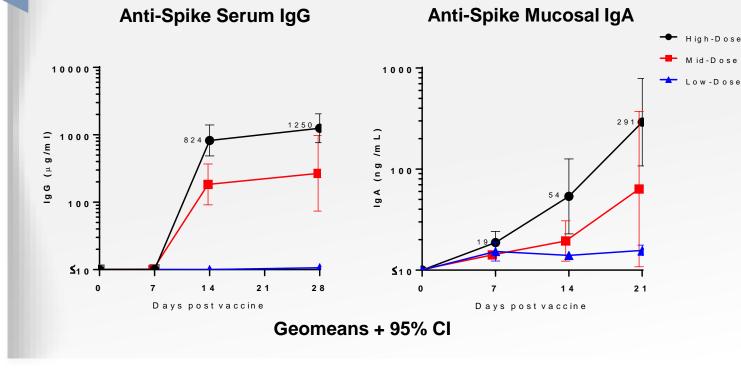
- <sup>1</sup> N van Doremalen et al.
- <sup>2</sup> Gould VMW, Front Microbiol. May 2017| Volume 8 | Article 900

- 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
- In non-human primates, intramuscular vaccination decreased SARS-CoV-2 in lungs but had no effect on infection in the nasal cavity<sup>1</sup>
- Nasal mucosal immunity affords protection at the site of viral entry and early replication and blocks transmission by shed virus<sup>2</sup>



## AdCOVID: STIMULATION OF BOTH SERUM AND MUCOSAL ANTIBODY IN MICE

#### Potent Antibody Responses in Serum and Respiratory Tract



# Single intranasal dose of AdCOVID

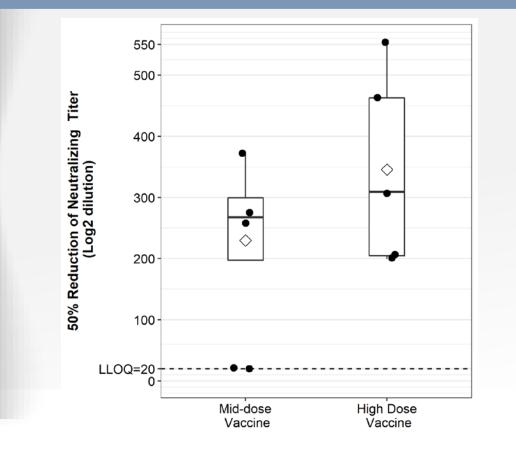
Anti-Spike IgG over 800 μg/mL IgG in serum by Day 14

29-fold induction of mucosal IgA in the respiratory tract by Day 21



# AdCOVID: STRONG NEUTRALIZING ANTIBODY RESPONSE

#### **Neutralizing Antibody Response in Serum**



#### Single intranasal dose of AdCOVID

Geometric mean titer of 1:320 by Day 28 (Day 14 not measured)

Response is two times higher than FDA recommends for donor convalescent plasma used to treat severe COVID-19 patients



# AdCOVID: COMPELLING PRECLINICAL DATA

- Strong induction of <u>both</u> serum neutralizing antibody and mucosal IgA responses
  - Neutralizing response twice FDA recommended level for treatment with serum
  - Mucosal IgA response well above levels normally associated with protection
- Rapid recruitment of immune cells into respiratory tract and draining lymph nodes consistent with induction of mucosal and systemic immunity
  - CD8+ T cells, CD4+ T cell, dendritic cells and NK cells in the mucosal environment indicative of a local cell-mediated immune response.
  - Follicular T helper (Tfh) cells, Germinal Center B cells and memory B cells in the draining lymph nodes and spleen, cell types associated with long-lived antibody responses



# NasoVAX CLINICAL DATA VALIDATES AdCOVID'S POTENTIAL

#### NasoVAX Intranasal Influenza Vaccine Phase 2 Clinical Results

- 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





## WHO COVID-19 VACCINE TARGET PRODUCT PROFILE ALTIMMUNE VACCINE PLATFORM MEETS PREFERRED ATTRIBUTES

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

https://www.who.int/blueprint/priority-diseases/key-action/WHO\_Target\_Product\_Profiles\_for\_COVID-19\_web.pdf



### AdCOVID: COMPELLING BENEFITS COMPARED TO OTHER VACCINE CANDIDATES PLATFORM CHARACTERISTICS AND PRACTICAL CONSIDERATIONS

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



## AdCOVID<sup>TM</sup>: 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	Expected July 2020
Toxicology	Not Required
GMP Manufacturing	Expected Q3/4 2020
Phase 1 Initiation	Expected Q4 2020



# 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

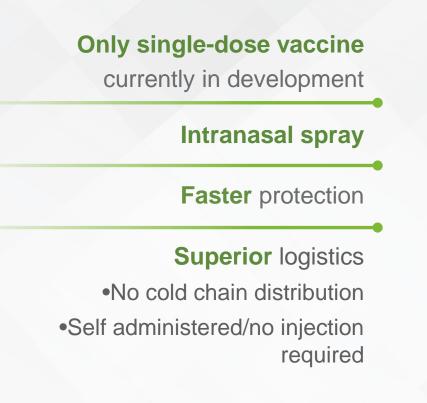
Stockpiling of vaccine may occur prior to licensure<sup>1</sup>

 Nuthrax<sup>®</sup> initial stockpiling valued at \$261M with a \$1.6 billion total potential contract value



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

#### DIFFERENTIATED



# NasoShield Differentiated Anthrax Vaccine

#### COMPETITION

Biothrax<sup>®</sup> - Only approved vaccine

- 3 dose regimen
- Requires an adjuvant
- Subcutaneous injections

NuThrax<sup>®</sup> (AV7909) – Phase 3

- 2 dose regimen
- Requires 2 adjuvants
- Intramuscular injections



INTRANASAL THERAPEUTIC

# T-COVID<sup>TM</sup>: MODULATES INNATE IMMUNITY IN ANIMAL MODELS PRECLINICAL STUDIES FUNDED BY NIAID & CONDUCTED AT UTAH STATE UNIVERSITY

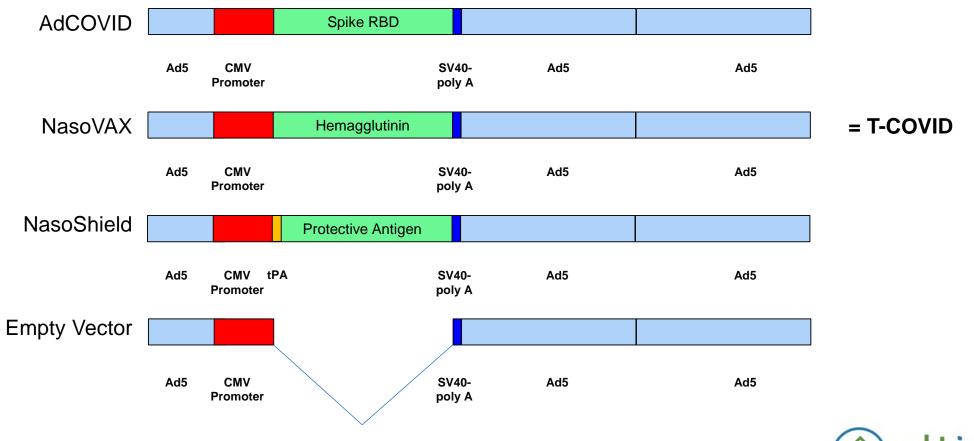


Data from 6 preclinical studies of influenza infection funded by NIAID and conducted at Utah State University showed:

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



# T-COVID<sup>TM</sup>: BASED ON RD-Ad5 VECTOR VACCINE PLATFORM SINGLE DOSE INTRANASAL THERAPEUTIC FOR THE TREATMENT OF EARLY COVID-19





# PHASE 1/2 CLINICAL TRIAL DESIGN

- 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 (SpO<sub>2</sub>), or hospitalization
- Secondary endpoints
  - Average decrease in resting SpO<sub>2</sub>
  - Average increase in resting pulse rate
  - Proportion of patients requiring oxygen supplementation and mechanical ventilation
- FDA agreed to allow Altimmune use its existing lot of RD-Ad5-based NasoVAX influenza vaccine for this trial so that it may be initiated quickly

  *Opaltimmune*



# 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—we believe 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



### ALT-801: GLP-1/GLUCAGON RECEPTOR DUAL AGONIST OPTIMIZED FOR NASH AND WEIGHT LOSS

**DESIGNED FOR GLUCAGON GLP-1** SIGNIFICANT **REDUCTIONS IN** energy expenditure blood glucose body weight adipose browning appetite lipolysis/ inflammation liver fat, inflammation gluconeogenesis and resulting fibrosis mobilization of liver fat blood glucose Indirect effects Direct effects on on liver liver



# ALT-801: RATIONALLY DESIGNED AND HIGHLY DIFFERENTIATED

PROPRIETARY EuPort<sup>™</sup> DOMAIN PROVIDES PROLONGED SERUM HALF-LIFE AND REDUCED PEAK CONCENTRATION





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

# ALT-801 SUMMARY OF PRECLINICAL STUDIES

- ALT-801 preclinical results in diet induced obesity models 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: ~100 patients

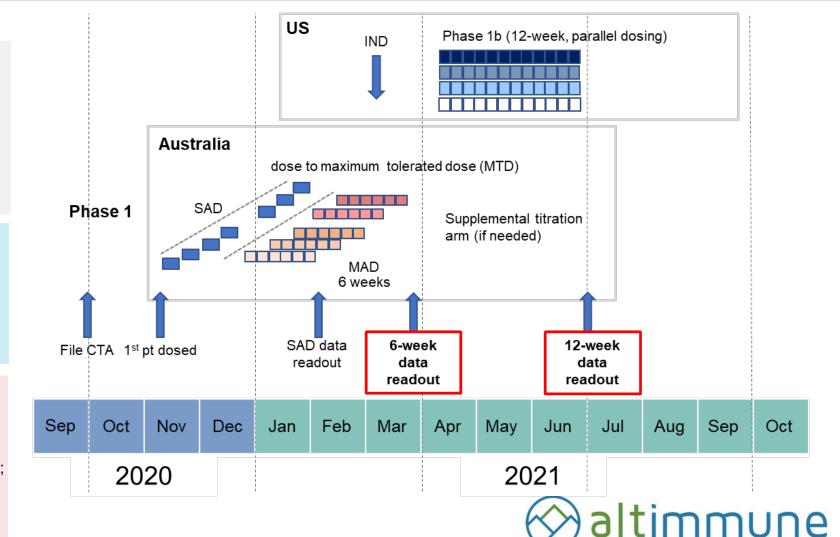
Patient population: Overweight and obese <u>non</u>-diabetics

#### 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





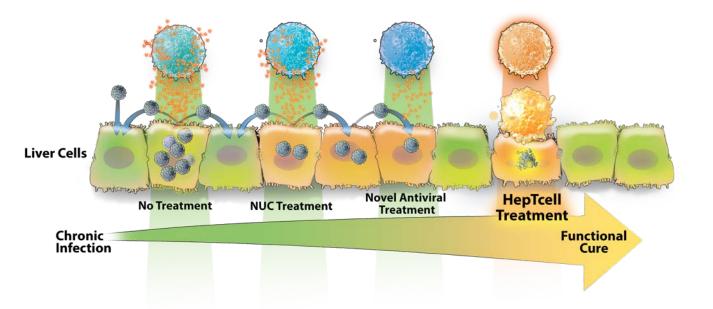
### CURRENTLY APPROVED HBV THERAPEUTICS DO NOT LEAD TO A CURE IMMUNE ACTIVATION WILL BE REQUIRED FOR SIGNIFICANT IMPACT

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

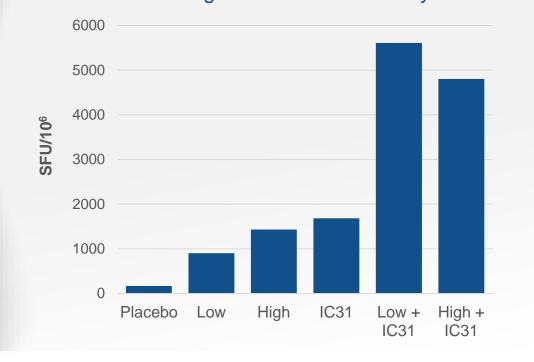




# HepTcell: PHASE 1 SAFETY AND IMMUNOGENICITY STUDY

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

#### **IFN**γ **ELISpot** Median Change from Baseline to Day 85



HepTcell breaks immune tolerance in chronic hepatitis B patients

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

HepTcell dose and use of adjuvant confirmed for Phase 2 studies



#### **DEVELOPMENT PLAN**

DIFFERENTIATED

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

**Targets all HBV genotypes** 

Complementary 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 Submitted IND in Q2 2020

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

# **INVESTMENT HIGHLIGHTS**



Proprietary intranasal vaccine platform ideally suited for rapid response to pandemic situations, including COVID-19



Developing next generation peptide therapeutics for liver disease

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



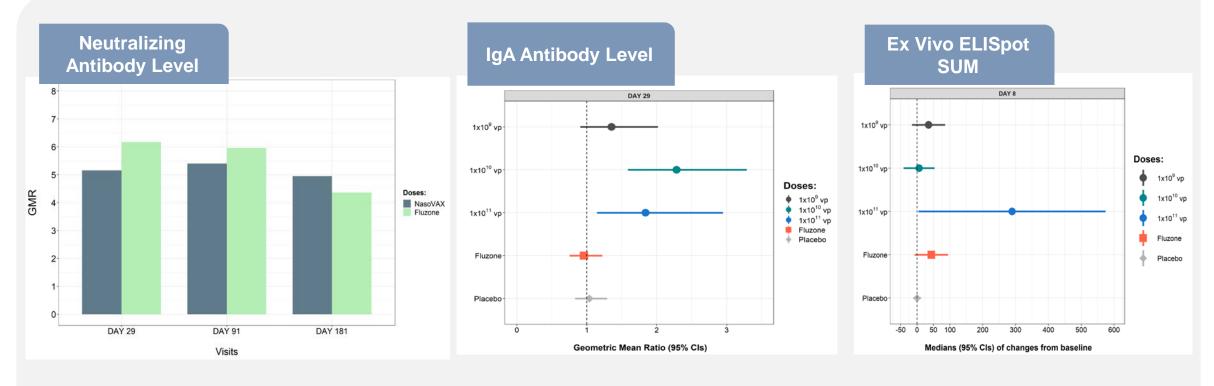






#### **APPENDIX**

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



Strong Antibody response

Strong mucosal IgA response

Strong T cell response



### NasoVAX: HAI and Neutralizing Titers Similar to Fluzone

	Serum HA	I Geometric	Mean Titer	s – 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 neutralizing antibody titer comparable to Fluzone



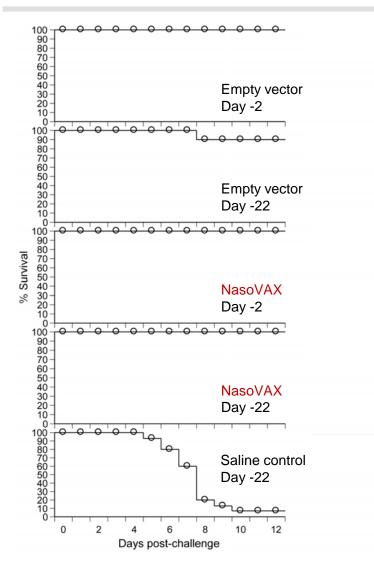
#### INTRANASAL AdCOVID IS NOT LIKE INTRANASAL FLUMIST® FLUMIST VERSUS REPLICATION-DEFICIENT Ad5 VECTOR

FluMist	<b>Replication-deficient Ad5 Vector</b>		
Attenuated influenza virus that requires replication for potency	Does not 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)	High vaccine dose (9 -11 logs)		
Weak serum Ab response <sup>1</sup>	Strong serum Ab response		
Weak T cell response <sup>1</sup>	Strong T cell response		

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



#### T-COVID: 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 x10<sup>8</sup> ifu) of either empty vector (vector without antigen) or NasoVAX (vector with antigen)

Day 0

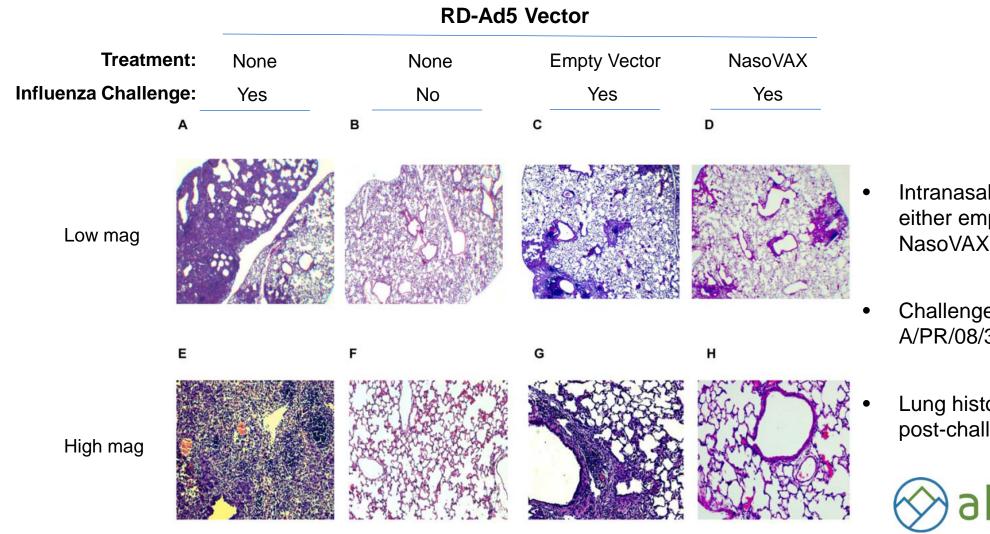
Challenge with influenza A/CA/04/2009 (3 x LD<sub>50</sub>)

#### <u>Results</u>

- 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



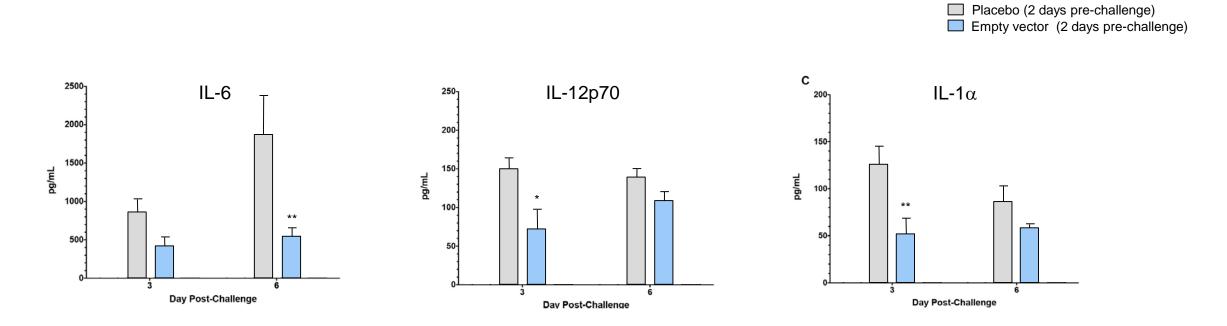
#### T-COVID: REDUCED INFLUENZA-INDUCED LUNG INFLAMMATION EFFECT SEEN WITH ADMINISTRATION OF EITHER EMPTY VECTOR OR NasoVAX



- 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



#### T-COVID: 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 x 10<sup>8</sup> ifu) on Day -2 and challenged with influenza A/CA/04/2009 (3 x LD<sub>50</sub>) 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



# T-COVID: TARGET PRODUCT PROFILE

Indications:

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

Mode of administration:

Single dose, intranasal, with potential for self-administration

**Storage and distribution:** 

Stable at ambient temperatures for 3 or more months

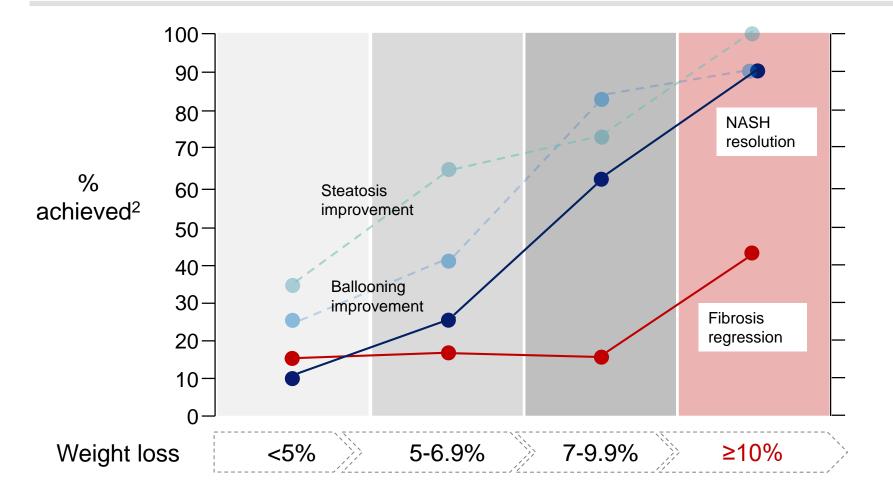
Safety profile:

Similar to placebo



# 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; Koutowkidis 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>	PPARα/δ 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: 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

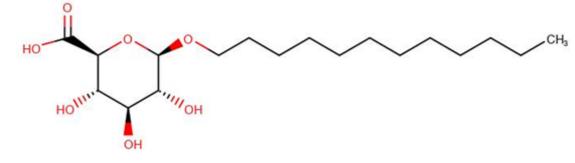


1 Day JA, et al. Peptide Science 2012;98:443-50

# ALT-801: IMPROVED PK FOR BETTER GI TOLERABILITY

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

 EuPort<sup>™</sup> 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<sub>max</sub>) of the peptide for improved tolerability
  - Significantly extend the half-life (t<sub>1/2</sub>) 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>



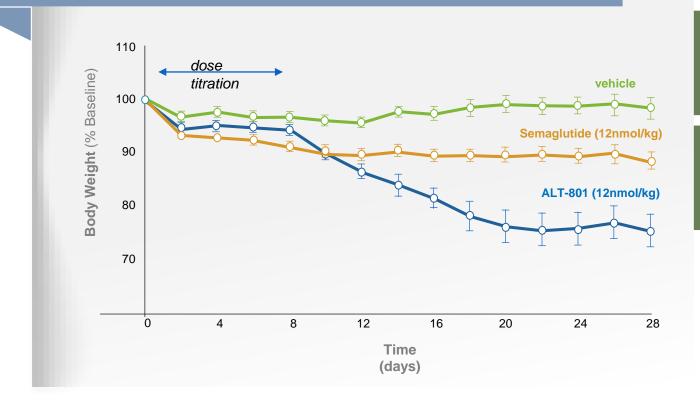
#### ALT-801: SUMMARY OF NON-CLINICAL STUDIES COMPLETED TO DATE THOROUGH INVESTIGATION OF COMPOUND CHARACTERISTICS

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 that semaglutide with prolonged gluco-regulatory effect
Mouse	РК	Single Dose	The Jackson Laboratory (USA)	ALT-801 later Tmax, lower Cmax vs semaglutide	More gradual PK for improved tolerability
Rat	PK	4 weeks	Charles River (USA)	Concentration still rising at 8hr	ALT-801 later Tmax, lower Cmax vs semaglutide
Minipig	РК	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 EC50 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

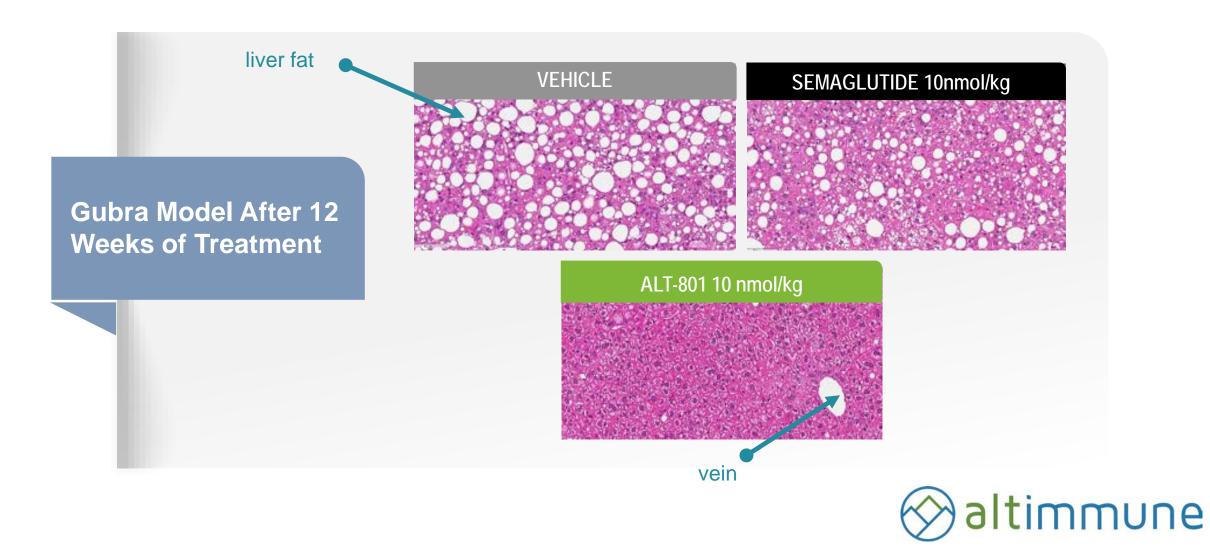


# More than **2x** the weight loss of **semaglutide**

# Body weight decreased to **lean normal range**



### ALT-801 REDUCTION IN LIVER FAT AND LIVER WEIGHT TO LEAN NORMAL RANGE



#### ALT-801 IMPROVEMENT IN NAFLD ACTIVITY SCORE (NAS)

Treatment 30% 20% +6% 10% **Gubra NASH Mouse** 0% Change in NAS on Model After 12 Weeks -10% -18% -32% -20% of Treatment -30% -61% -40% -50% All animal -60% achieved NAS  $\leq 3$ ++++ -70% % semaglutide -80% vehicle 5nmol/kg 10nmol/kg 10nmol/kg **ALT-801** 

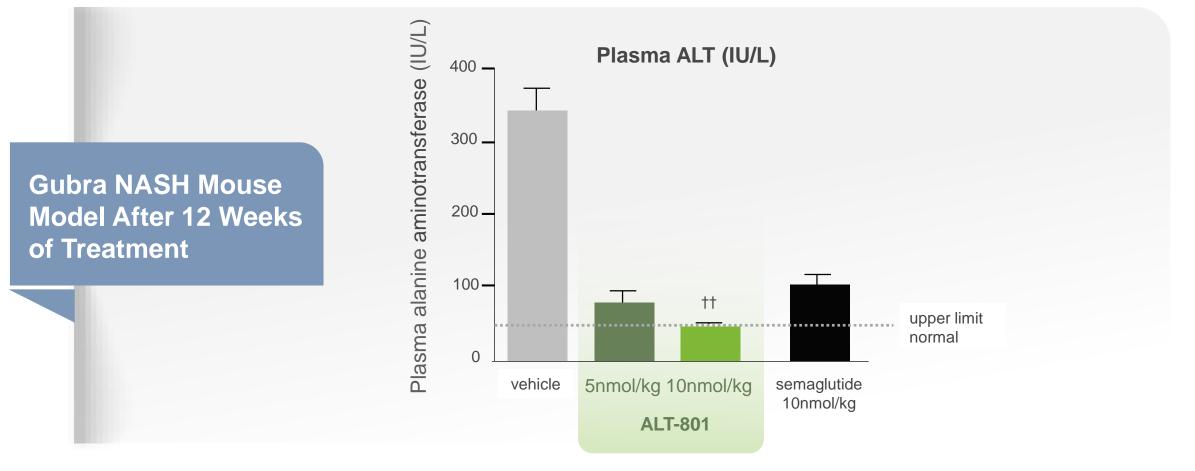
Change in NAFLD Activity Score (NAS)

Mean (SE), 1-way ANOVA with Dunnett's adjustment for multiplicity  $\uparrow \uparrow p < .01$ ,  $\uparrow \uparrow \uparrow p < .001$ ,  $\uparrow \uparrow \uparrow \uparrow$ , p < .0001 vs. semaglutide (n=11-12)



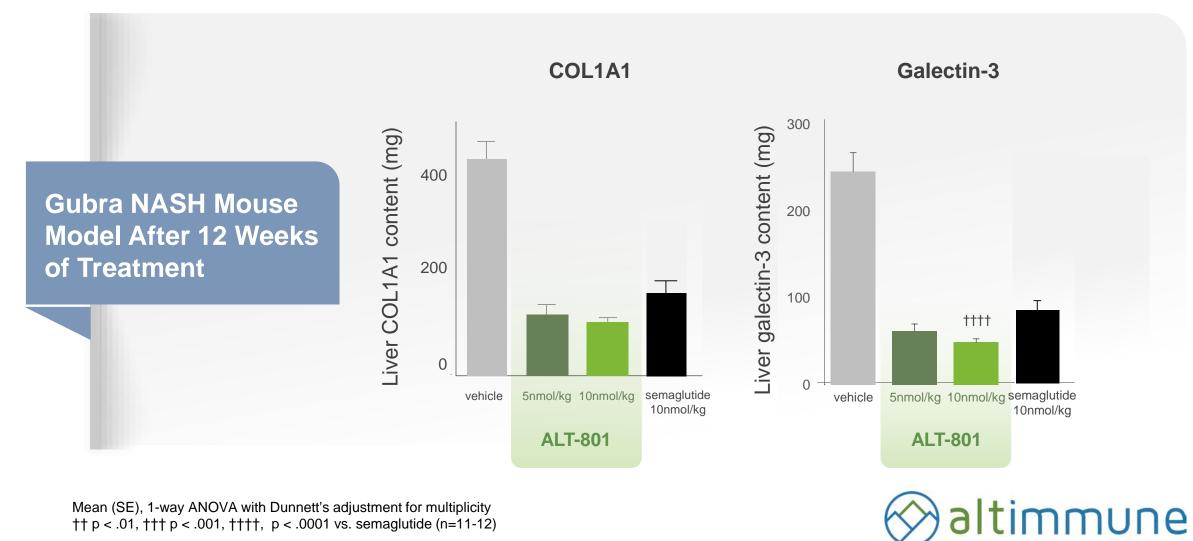
52

#### ALT-801 NORMALIZATION OF PLASMA ALT



Mean (SE), 1-way ANOVA with Dunnett's adjustment for multiplicity  $\uparrow \uparrow p < .01$ ,  $\uparrow \uparrow \uparrow p < .001$ ,  $\uparrow \uparrow \uparrow \uparrow$ , p < .0001 vs. semaglutide (n=11-12)

#### **ALT-801 GREATER EFFECTS ON FIBROSIS**



Mean (SE), 1-way ANOVA with Dunnett's adjustment for multiplicity tt p < .01, tt p < .001, tt t, p < .0001 vs. semaglutide (n=11-12)