



**Genprex<sup>®</sup>**

# Pioneering Gene Therapies for Patients in Need

May 2025



[www.genprex.com](http://www.genprex.com) | NASDAQ: GNPX

# Forward-Looking Statements

[www.genprex.com](http://www.genprex.com)

Statements contained in this presentation regarding matters that are not historical facts are “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. Because such statements are subject to risks and uncertainties, actual results may differ materially from those expressed or implied by such forward-looking statements. Such statements include, but are not limited to, statements regarding our expected operating results, our ability to maintain compliance with the continued listing requirements of The Nasdaq Capital Market and to continue as a going concern and to obtain capital to meet our long-term liquidity needs on acceptable terms, or at all, including the additional capital which will be necessary to complete the clinical trials that we have initiated or plan to initiate, achievement of key milestones, our ability to advance the clinical development, manufacturing and commercialization of our product candidates in accordance with projected timelines and specifications, and the effects of our product candidates, alone and in combination with other therapies, on cancer and diabetes. Risks and uncertainties that contribute to the uncertain nature of the forward-looking statements include our ability to achieve key milestones, the timing and effect of our achieving those milestones, the competition we face from other biotechnology and pharmaceutical companies, the effects of Fast Track and/or Orphan Drug Designations, and of other factors, on the clinical development, manufacturing and commercialization of our product candidates, as well as the presence and level of our product candidates’ effect on cancer and diabetes, the effects of any R&D prioritization initiatives or any other strategic alternatives or other efforts we make take in the future, the timing of our IND filings and amendments, the timing and outcome of FDA action with respect to our IND filings and amendments, the timing and our ability to contract with clinical sites and to enroll patients in our clinical trials, including the impact of competition for patients on such timing, the timing and performance of our third party manufacturers, vendors and suppliers, the timing and success of our clinical trials and planned clinical trials of our product candidates, the timing and success of obtaining FDA approval of our product candidates, costs associated with developing our product

or that are the subject of our license agreements or that others may be able to develop competing products that do not infringe our patent rights, such that our product candidates may not have an exclusive market position. These and other risks and uncertainties are described more fully under the caption “Risk Factors” in our annual report on Form 10-K for the year ended December 31, 2024 and our other filings and reports with the United States Securities and Exchange Commission. While we believe we have identified material risks, these risks and uncertainties are not exhaustive. Moreover, we operate in a very competitive and rapidly changing environment. New risks and uncertainties emerge from time to time, and it is not possible to predict all risks and uncertainties, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. All forward-looking statements contained in this presentation speak only as of the date on which they were made. Except as required by law, we undertake no obligation to update such statements to reflect events that occur or circumstances that exist after the date on which they were made.

This presentation highlights basic information about our company. Because it is a summary, it does not contain all of the information you should consider before investing in our company. Further information about our company may be found in our public filings and reports with the United States Securities and Exchange Commission.

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# Our Mission

Advancing novel gene therapies for  
**patients afflicted with cancer or diabetes.**



# Program Highlights



## ONCOLOGY

- ★ Non-viral gene therapy platform
- ★ Novel approach using systemic gene therapy to replace tumor suppressor genes for cancer in humans
- ★ Two FDA Fast Track Designations, one Orphan Drug Designation and two lung cancer trials
- ★ Clinical achievement in Ph 1 and Ph 2 studies

## DIABETES

- ★ Addressing both Type 1 and Type 2 diabetes with AAV gene therapy
- ★ Novel infusion process delivers genes to pancreas
- ★ Demonstrated ability to stabilize glucose levels and reduce insulin requirements shown in Non-Human Primate (NHP) studies
- ★ Poised to seek further FDA guidance in 2025

# Research and Development Pipeline

	Delivery System	Drug Candidate	Indication	Clinical Trial Program Name	Regulatory Designation	Discovery	Preclinical	IND-Enabling	Clinical Phase 1	Clinical Phase 2	Clinical Phase 3	
ONCOLOGY	ONCOPREX® DELIVERY SYSTEM (NON-VIRAL AND SYSTEMIC)	REQORSA® GENE THERAPY	NSCLC	Acclaim .1 (ONC-003)	Fast Track Designation	REQORSA® + Tagrisso						
		REQORSA® GENE THERAPY	SCLC	Acclaim .3 (ONC-005)	Fast Track, Orphan Drug Designation	REQORSA® + Tecentriq						
REQORSA® GENE THERAPY		Ras Inhibitor Resistant Lung Cancer	—			→						
REQORSA® GENE THERAPY		ALK-EML4 Positive Translocated Lung Cancer	—			→						
REQORSA® GENE THERAPY		Mesothelioma	—			→						
OTHER ONCOLOGY TARGETS		—	—			→						
DIABETES		AAV Vector	GPX-002	T1D	DIA-001		→					
			GPX-002	T2D	DIA-002		→					
			OTHER DIABETES TECHNOLOGIES	—	—		→					



# ONCOLOGY

REPROGRAMMING THE COURSE OF CANCER



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# Why TUSC2?

## Discovery

- Tumor Suppressor Candidate 2
- Chromosome 3p21.3 deleted gene
- Previously called FUS1
- NPRL2 is in the same area of the chromosome

## Tumor Suppressor Gene

- TUSC2 restoration in cancer cells in vitro inhibits cell growth and induces apoptosis
- TUSC2 is encoded by nuclear DNA but TUSC2 protein is located in inner membrane of mitochondria
- Plays a key role in mitochondrial Ca<sup>2+</sup> regulation
- Plays a key role in mitochondrial energy metabolism
  - TUSC2 restoration decreases glycolysis
  - Decreases glucose uptake by cancer cells

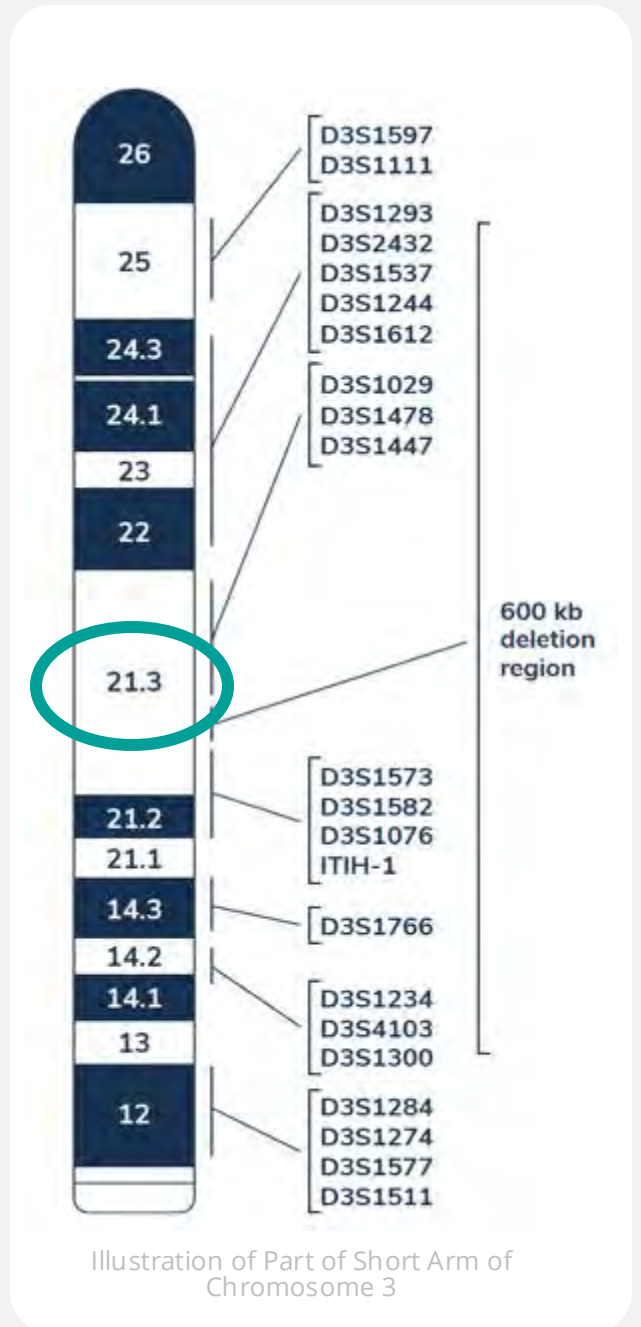
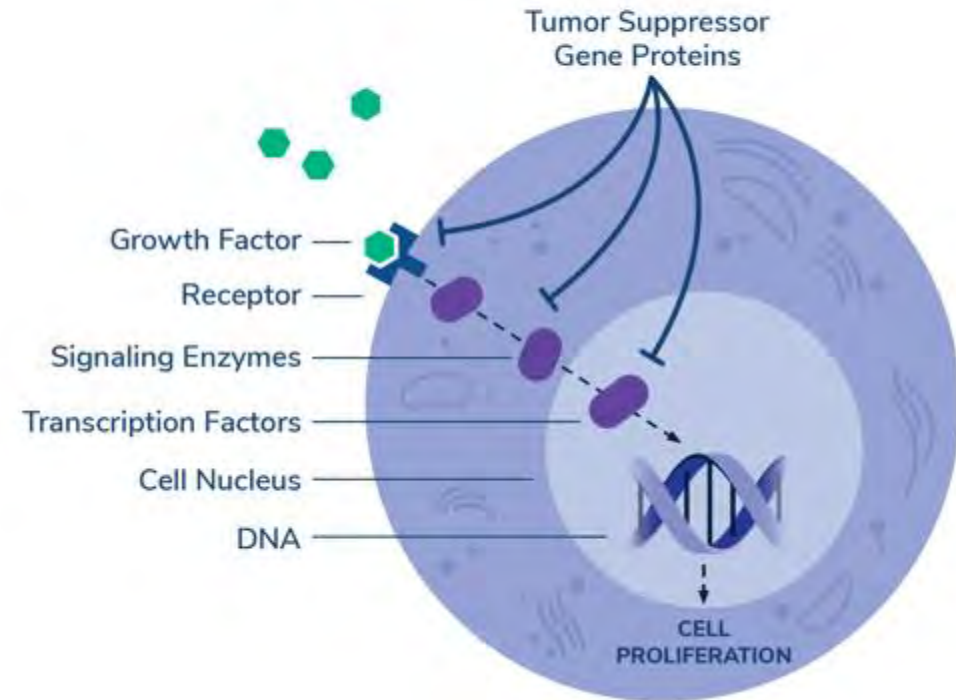


Illustration of Part of Short Arm of Chromosome 3

# Tumor Suppressor Genes Deleted During Cancer Development

- Tumor suppressor genes are deleted early during cancer development
- 82% of all non-small cell lung cancers and 100% of all small-cell lung cancers express decreased amounts of TUSC2 tumor suppressor protein
- Loss or reduction of TUSC2 expression is associated with significantly reduced overall survival
- Led to the hypothesis that reintroduction of tumor suppressor genes may be a new method of treating cancer

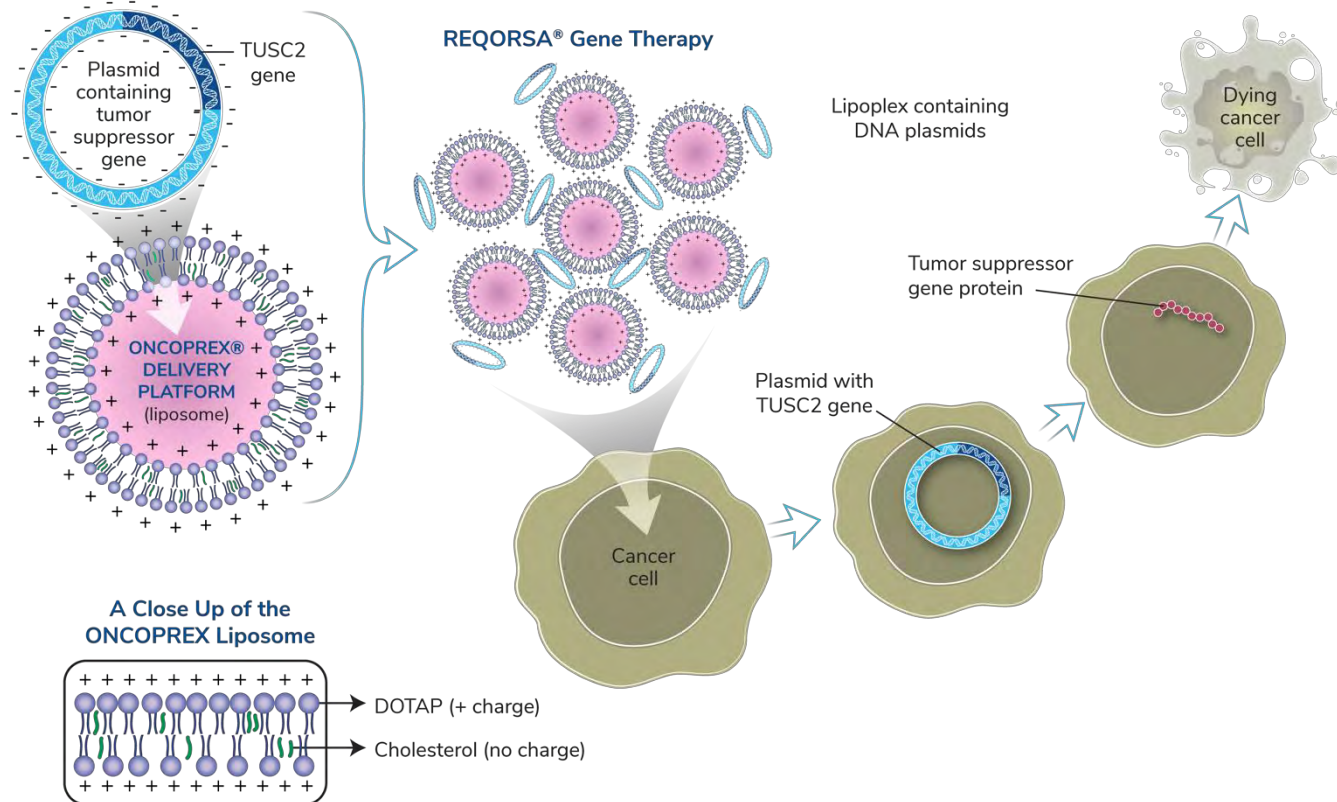
## Tumor Suppressor Genes Act Like a Brake Pedal



# Oncoprex<sup>®</sup> Delivery System

Non-viral, positively-charged lipid-based nanoparticle in a lipoplex form is **systemically delivered.**

## NON-VIRAL DELIVERY OF TUMOR SUPPRESSOR GENE



Cationic lipoplex carries drug to tumors.

# Our Cancer Treatment Approach

Tumor suppressor genes are deleted early during cancer development.

Our method of treating cancer is to reintroduce tumor suppressor genes to patients.



## Tumor Suppressor Gene in a DNA Plasmid

We have rights to tumor suppressor genes that may have cancer-fighting functions. These genes are expressed in a DNA plasmid.



## Non-Viral Lipid Nanoparticles in a Lipoplex

The gene expressing DNA plasmid is then encapsulated into our ONCOPREX<sup>®</sup> Delivery System, which consists of non-viral lipid-based nanoparticles in a lipoplex form.

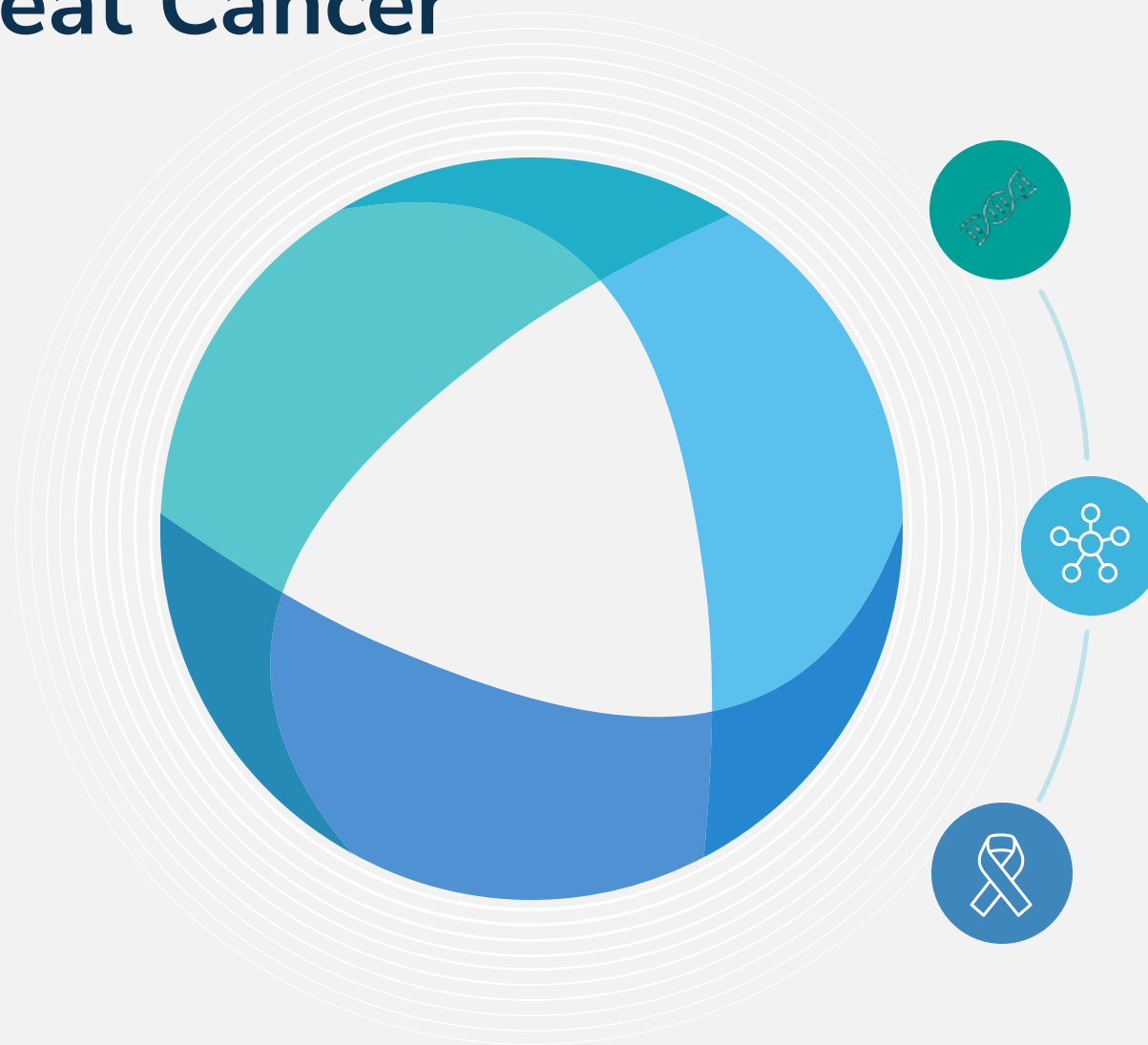


## Systemic Patient Administration

The final drug product is delivered systemically through intravenous injection and specifically targets cancer cells.

# Novel Platform to Treat Cancer

## Systemic Gene Therapy Platform: **Oncoprex<sup>®</sup> Delivery System**



### **Genes**

Allows for delivery of TUSC2 and NPRL2 genes and potentially a variety of other genes

### **Synergies**

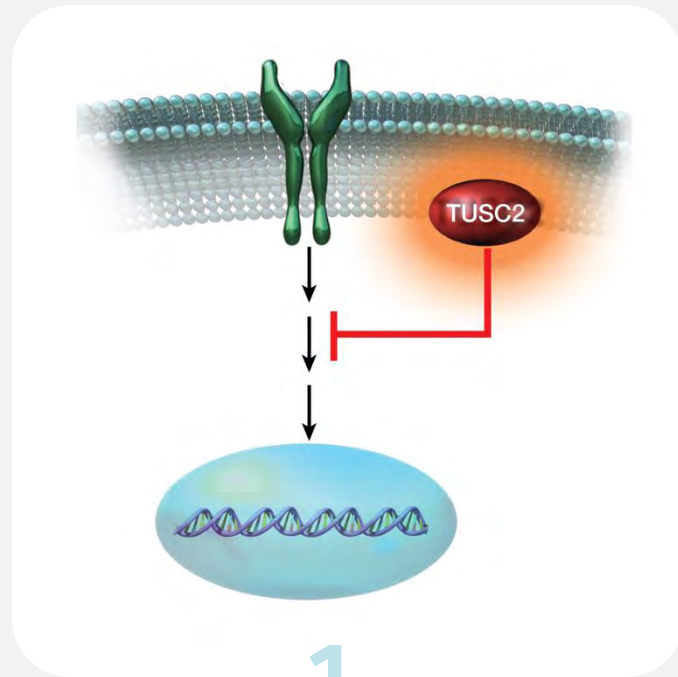
Can be used in combination with other cancer therapies such as Tagrisso<sup>®</sup> and Tecentriq<sup>®</sup>

### **Cancers**

Could combat multiple cancers including NSCLC, SCLC, head and neck, glioblastoma, breast, kidney, thyroid and soft tissue sarcomas

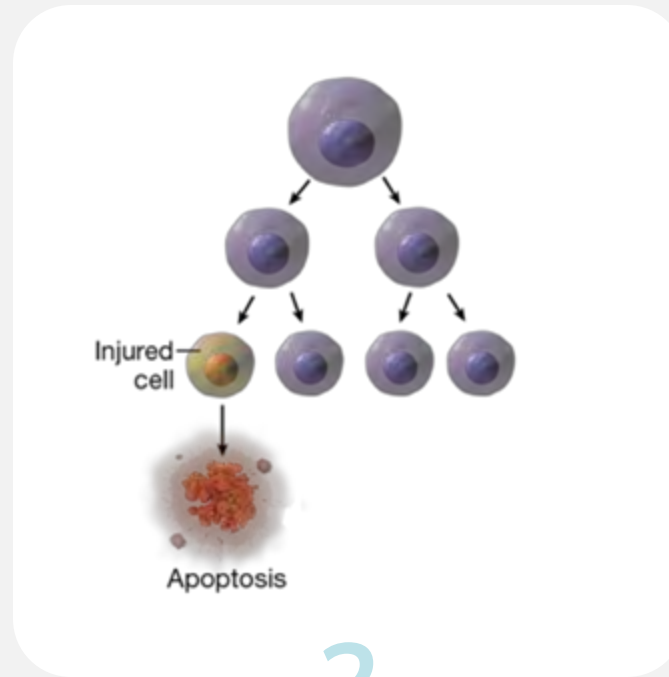
# Reqorsa<sup>®</sup> Targets Cancer At Its Core

Multiple anti-cancer  
mechanisms of action.



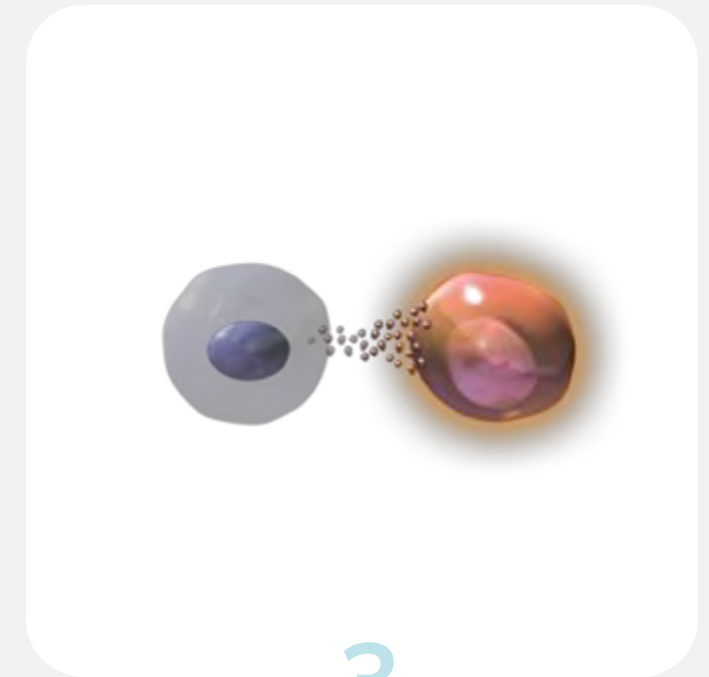
**Controls Cell Signaling**

Tyrosine kinase inhibition  
decreases cancer cell  
proliferation



**Stimulates Apoptotic Pathways**

Leads to programmed  
cancer cell death



**Modulates Immune Response**

Promotes immune  
activity against cancer

# Reqorsa<sup>®</sup> Reduces Glycolysis in Cancer Cells

Cancers are detected by PET scans

- PET scanning is based on increased glucose uptake in cancer cells
- Due to high rate of glycolysis in cancer cells

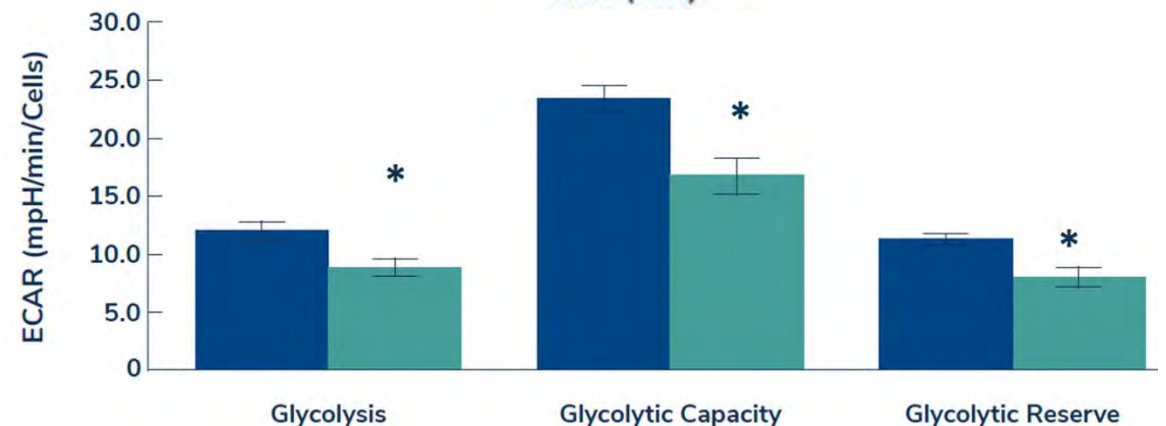
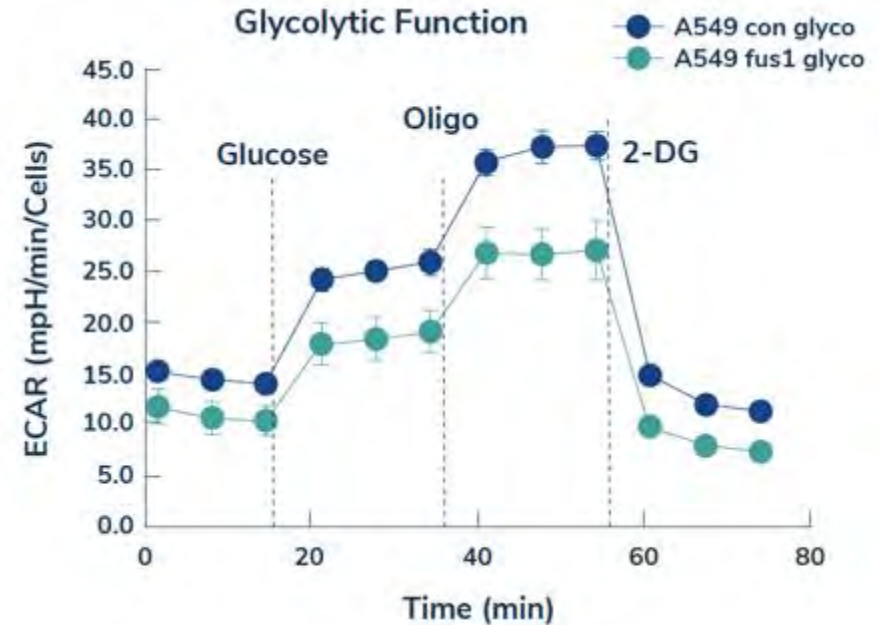
A549 cells are a NSCLC line virtually lacking TUSC2.

Transfected with TUSC2 gene (fus1)

- Decreased glycolysis
- Decreases glucose uptake
- May lead to negative PET scans with no change in CAT scans

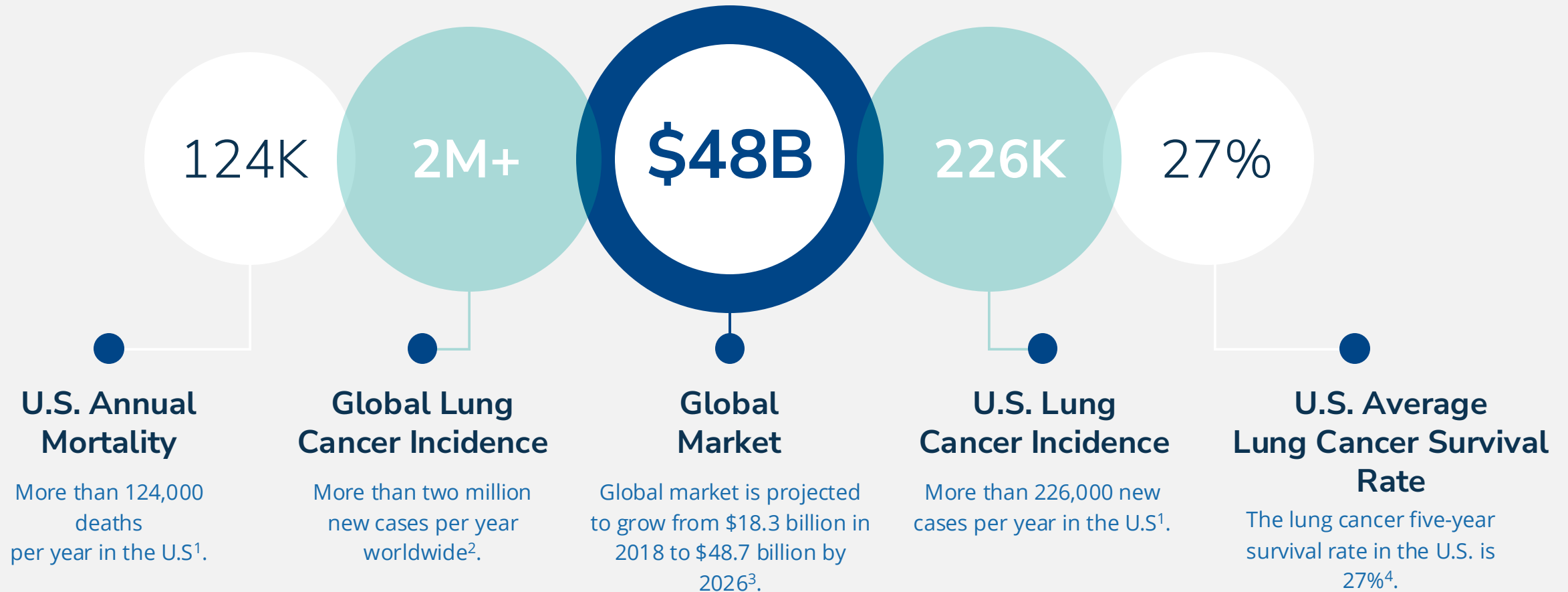
Increased glycolysis is found in virtually all cancers.

REQORSA Reverses Fundamental Characteristic of Cancer



\* indicates p<0.05

# Lung Cancer: By the Numbers



# Reqorsa<sup>®</sup> Monotherapy

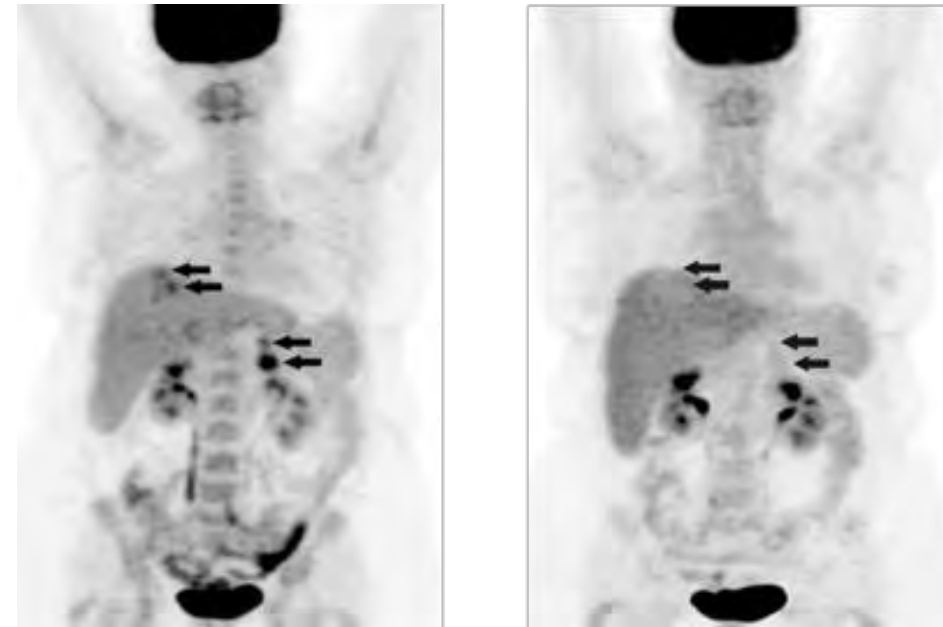
ONC-001 Trial

## DOSE ESCALATION STUDY

Explored toxicity and tolerability in patients.

Phase 1 monotherapy results:

- 31 Stage IV lung cancer patients
- 0.01 – 0.09 mg/kg
- 23 patients evaluable
  - 5 patients had stable disease
  - 2 patients had tumor shrinkage
- Generally well-tolerated



Metabolic responses in late-stage metastatic lung cancer patient

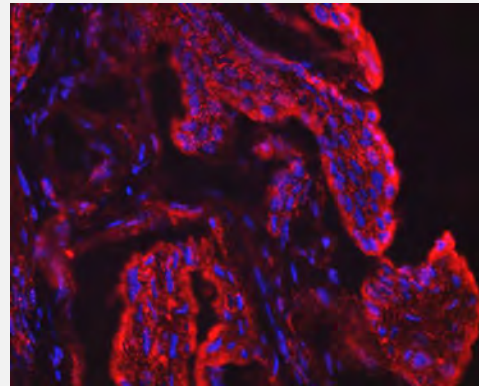
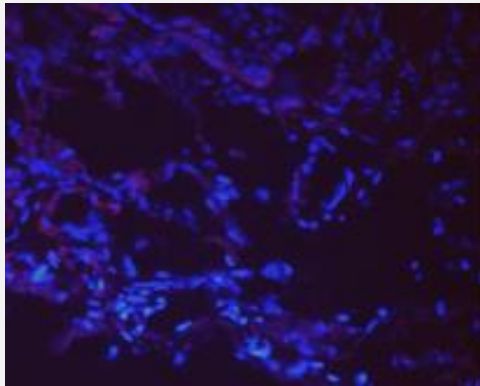
# Selective Uptake of Reqorsa<sup>®</sup>

REQORSA Targets Cancer Cells

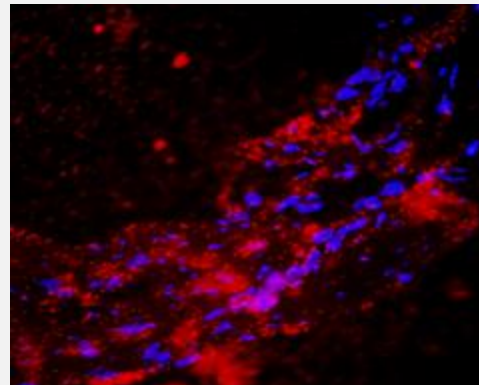
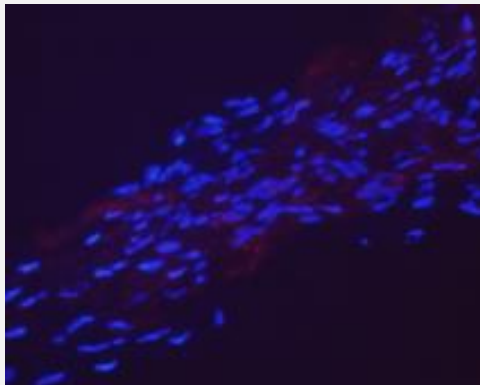
Pretreatment Biopsies

Posttreatment Biopsies

**Patient 1**  
(.02 mg/kg)



**Patient 2**  
(.06 mg/kg)



○ REQORSA is designed to deliver the functioning TUSC2 gene to cancer cells while minimizing its uptake by normal tissue.

○ Tumor biopsy studies show that, in three patients, the expression of TUSC2 was markedly increased 1 day after REQORSA treatment.

# Reqorsa<sup>®</sup> + Tarceva

ONC-002 Phase 2 Trial

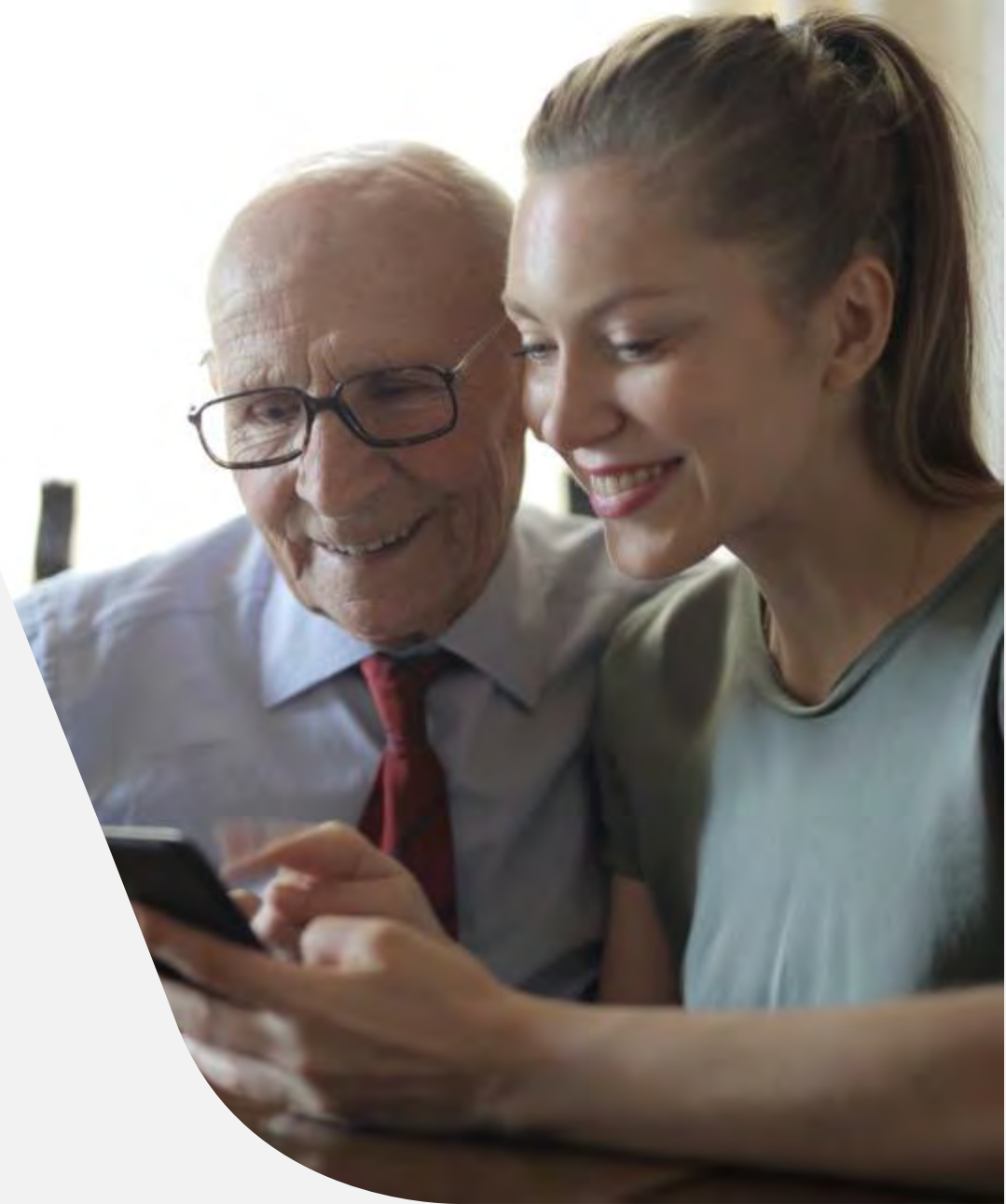
Met Simon 2-stage criteria to enroll the full 39 subjects, but was discontinued to start study with Tagrisso.

BEST OVERALL RESPONSE	NUMBER OF CYCLES	EGFR MUTATION STATUS	PRIOR THERAPY	PRIOR LINES OF THERAPY
CR	11 cycles	Positive (exon 18+20)	Chemo	3
SD 24% Regression target lesion	6 cycles	Unknown	Chemo/anti-PD1	2
SD 30% Regression one target Lesion 17% Regression all target lesions	8 cycles	Negative	Chemo/anti-PD1	6
SD	4 cycles	Positive (exon 21)	Erlotinib (10 cycles)/Chemo	3
SD	4 cycles	Positive (exon 21)	Erlotinib (12 cycles)	2
SD	4 cycles	Negative	Chemo	2
SD	4 cycles	Unknown	Chemo	4

For most patients, **drug resistance** to Tagrisso<sup>®</sup> and Tecentriq<sup>®</sup> **is inevitable.**<sup>1,2,3</sup>

**Our approach is designed to address drug resistance.**

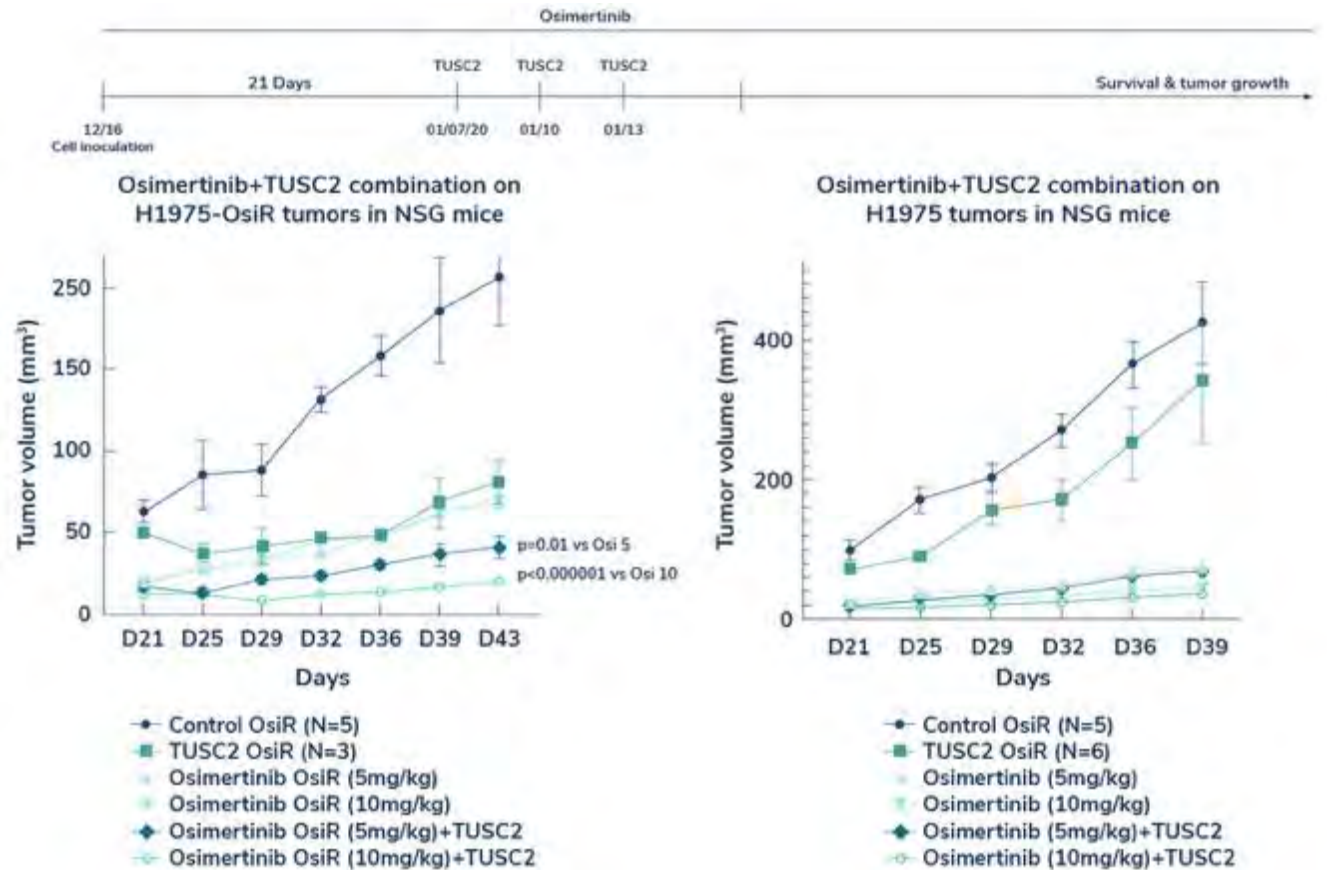
- REQORSA Immunogene Therapy may be complementary with targeted drugs and immunotherapies.
- REQORSA's multimodal activity may block emerging bypass pathways, thereby potentially reducing the probability that drug resistance develops.



# AACR 21: Reqorsa<sup>®</sup> + Tagrisso Reduce Tumor Growth in Tagrisso Resistant Tumors

## Enhanced Anti-Tumor Activity

REQORSA in combination with Tagrisso demonstrated significantly increased anti-tumor efficacy in EGFR mutant Tagrisso resistant NSCLC tumors in H1975-OsiR mouse xenografts.



TUSC2 = Reqorsa  
Osimertinib is the generic name for Tagrisso.

- Patients with advanced, EGFR mutant NSCLC whose disease progressed after Tagrisso® monotherapy or Tagrisso® combination therapy
- FDA Fast Track Designation
- ~10-15 U.S. sites
- ~119 patients
  - Phase 1 Dose Escalation: 12 patients (completed)
  - Phase 2a Expansion: ~33 patients (opened for enrollment in Jan. 2024)
  - Phase 2b: ~74 patients
- Phase 2a Expansion interim analysis at 19 patients
- Phase 2b interim analysis at 28 events (i.e., disease progression or death)



Reqorsa® in combination with AstraZeneca's Tagrisso® for NSCLC

**Phase 2b: Comparing Progression Free Survival of REQORSA + Tagrisso vs. Platinum-Based Chemotherapy**



# Phase 1 Dose Escalation

Excellent safety profile and efficacy in relapsed patients.

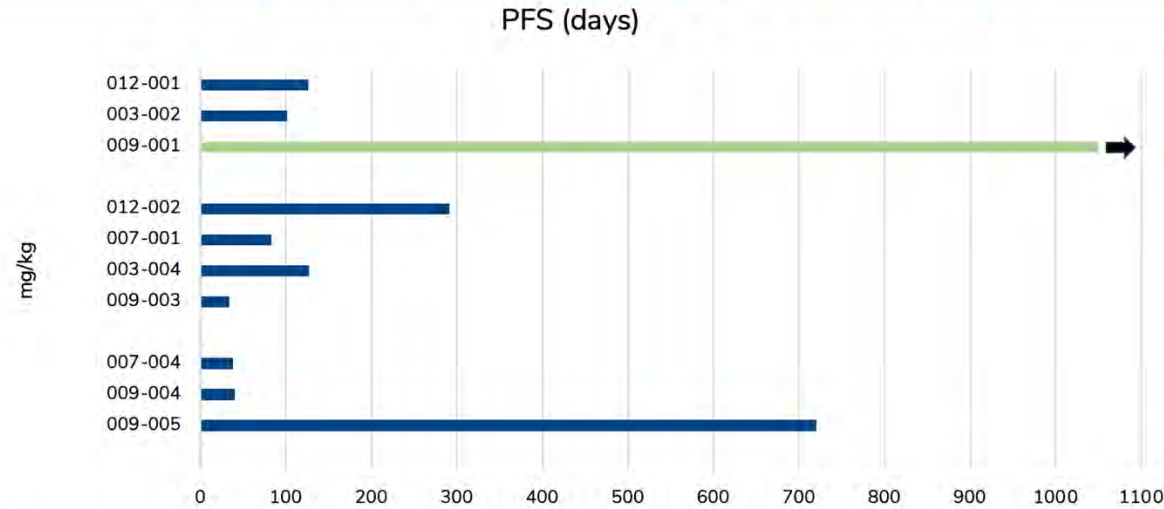
Enrollment and Dose Limiting Toxicities				
	0.06 mg/kg	0.09 mg/kg	0.12 mg/kg	Total
# Patients	3	4 <sup>0</sup>	5 <sup>^</sup>	12
M/F	0/3	2/2	1/4	3/9
Median Age (range)	59 (50-60)	51 (38-69)	59 (57-74)	59 (38-74)
DLTs	0	0	0	0

<sup>0</sup> 1 patient received quaratusugene ozeplasmid in 1st cycle but was excluded from RP2D assessment for reasons not related to DLT.  
<sup>^</sup> 1 patient withdrew and 1 lost to follow up before completing 1<sup>st</sup> cycle

## Delayed Infusion-Related Reaction

- No symptoms during 30 min infusion
- Fever, chills, and muscle aches
- Symptoms generally start 3-6 hours after infusion
- Generally lasts 2-4 hours
- Prophylaxis with dexamethasone, acetaminophen, and diphenhydramine
- Attenuated with repeat dosing

## Progression Free Survival by Dose Group



## 3/12 progressing on Tagrisso containing regimens had prolonged PFS

- 1 continuing treatment after 47 cycles (35 mos)
- 1 progressed after 32 cycles (24 mos)
- 1 progressed after 14 cycles (10 mos)

1 patient withdrew and 1 patient was lost to follow up before completing first cycle and therefore were not evaluable for PFS

➔ = Patient's study treatment ongoing

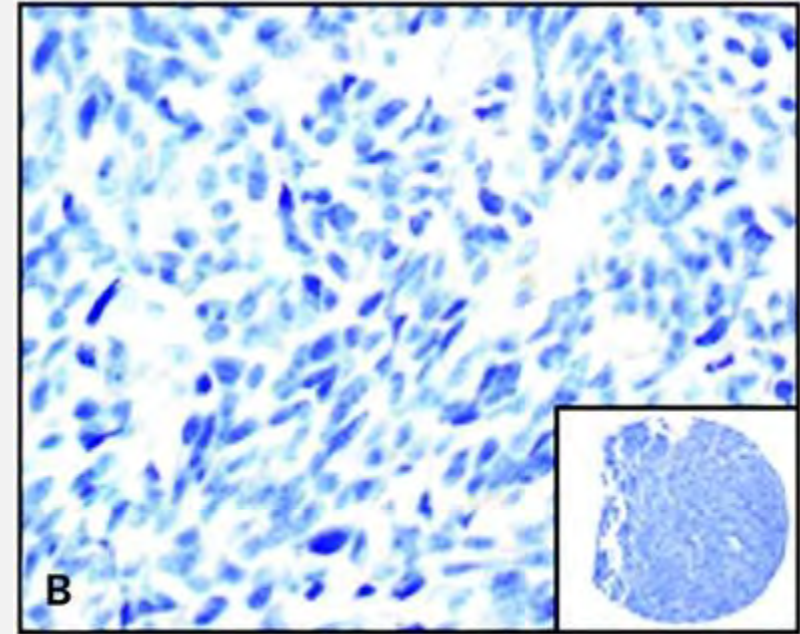
■ = Patient with partial remission

# Reqorsa<sup>®</sup> in Small Cell Lung Cancer

Targeting Small Cell Lung Cancer (in addition to NSCLC) **allows Genprex to address virtually the entire lung cancer market.**

## Small Cell Lung Cancer:

- Consistently has low TUSC2 protein levels
- Documented to often have deletion of at least one TUSC2 gene allele.
- Extensive stage SCLC has very poor prognosis – a median PFS of 5.2 months.



Small cell lung cancer with negative TUSC2 expression.

Image source: Clin Cancer Res 2008;14:41-7.

Another clinical opportunity to combine **REQORSA with checkpoint inhibitors**

# SCLCs Express Low Levels Of TUSC2 Protein

## IHC analysis of tumor specimens

- 41% of SCLC have no TUSC2 protein expression
- 100% of SCLC have reduced or no TUSC2 protein expression

Since all SCLCs have reduced or no TUSC2 protein expression, re-expressing TUSC2 protein may lead to clinical efficacy.

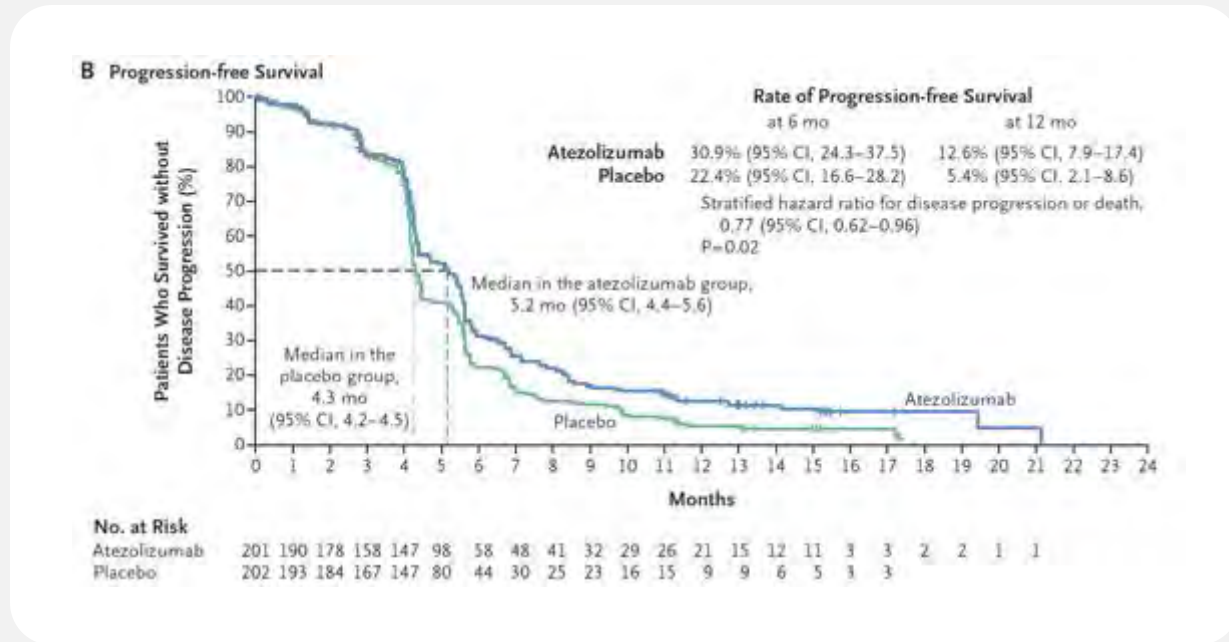
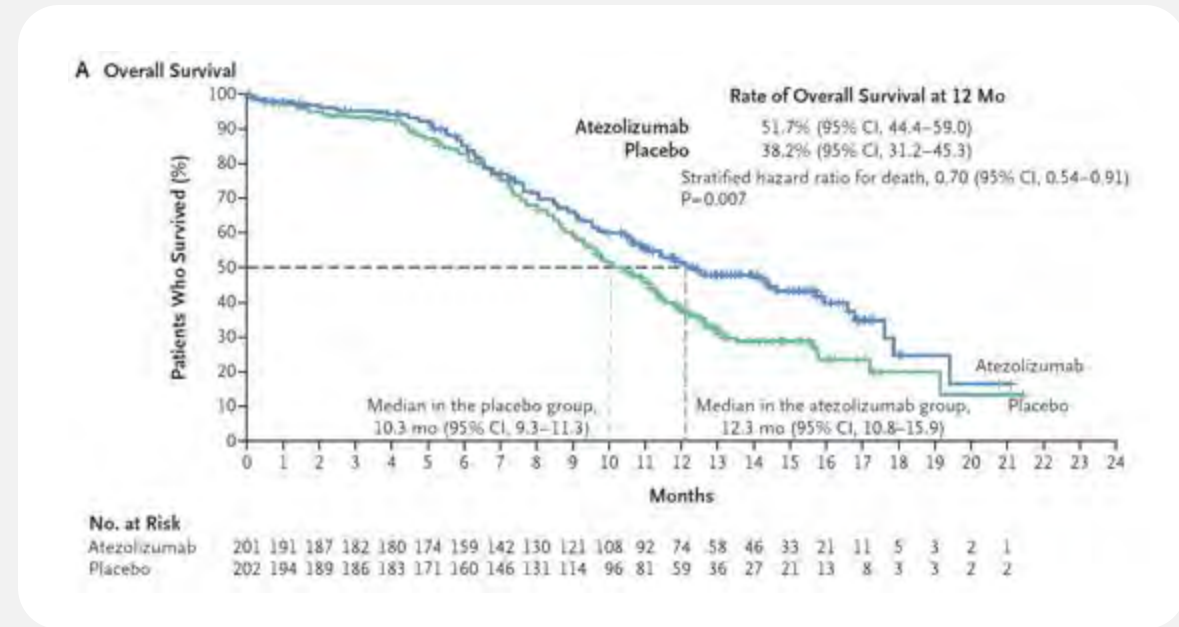
Histology of samples	No. of samples	Fus1 score, mean (SD)	Fus1 score levels			P value, Fus1 levels
			Lost (negative) <i>n</i> (%)	Reduced (low + intermediate) <i>n</i> (%)	Preserved (high) <i>n</i> (%)	
Cancer specimens						Comparison between tumors
SCLC	22	57 (67.4)	9 (41)	13 (59)	0	0.0008
NSCLC	281	121 (87.3)	36 (13)	194 (69)	51 (18)	
Adenocarcinoma	172	127 (91.8)	25 (15)	110 (64)	37 (22)	0.07
Squamous cell carcinoma	109	111 (79.1)	11 (10)	84 (77)	14 (13)	

# Atezolizumab (Tecentriq®) SCLC Approval Trial

## IMpower133 Study

Adding Tecentriq to standard therapy improves survival in SCLC and establishes a new standard therapy for ES-SCLC.

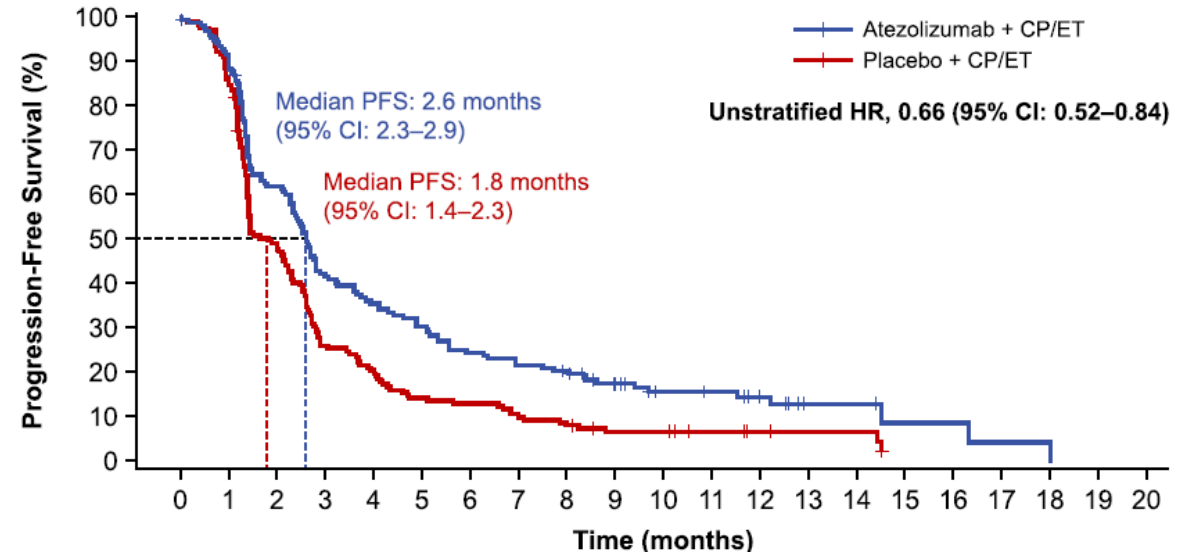
- Untreated, extensive stage SCLC
- Carboplatin & etoposide chemotherapy + atezolizumab or placebo
  - 4 cycles, then atezolizumab maintenance therapy or placebo until progression
  - Atezolizumab 1200 mg every 3 weeks
- PFS 5.2 vs 4.3 mos (HR 0.77)
- OS 12.3 vs 10.3 mos (HR 0.70)



# Atezolizumab Maintenance Therapy

Once patients begin maintenance therapy with Tecentriq, Progression Free Survival is very short (2.6 mos).

- Atezolizumab vs placebo
  - All CR, PR, and SD patients received maintenance therapy
  - Endpoints measured from the start of maintenance therapy
- PFS 2.6 vs 1.8 mos (HR 0.63)
- OS 12.5 vs 8.4 mos (HR 0.59)

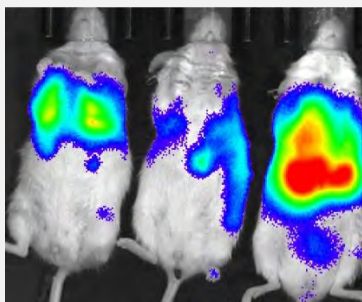


Atezolizumab is the generic name of Tecentriq.

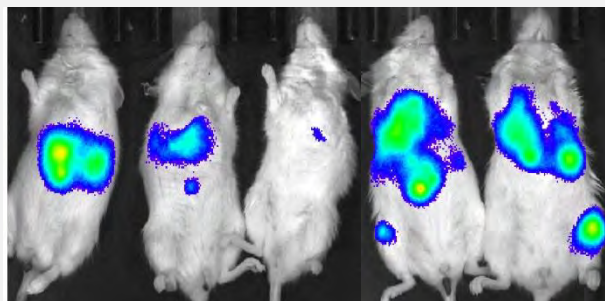
# Reqorsa<sup>®</sup> Adds Significantly to Tecentriq Treatment

H841 SCLC cell xenografts in humanized mice

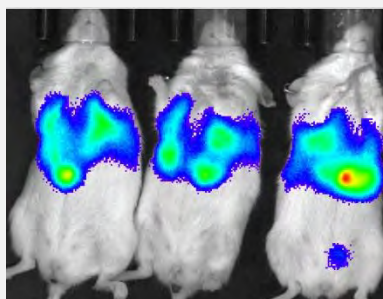
CONTROL



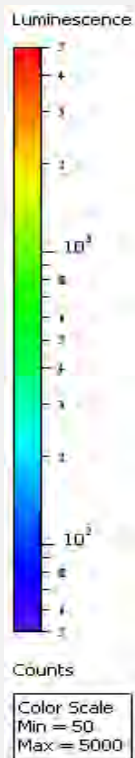
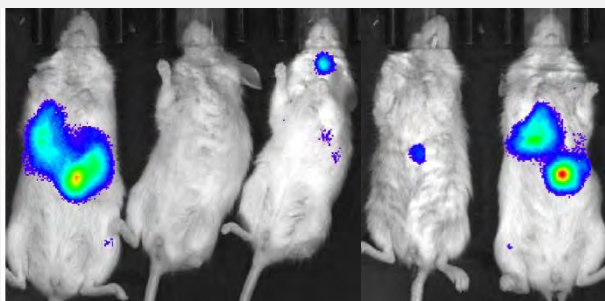
REQORSA



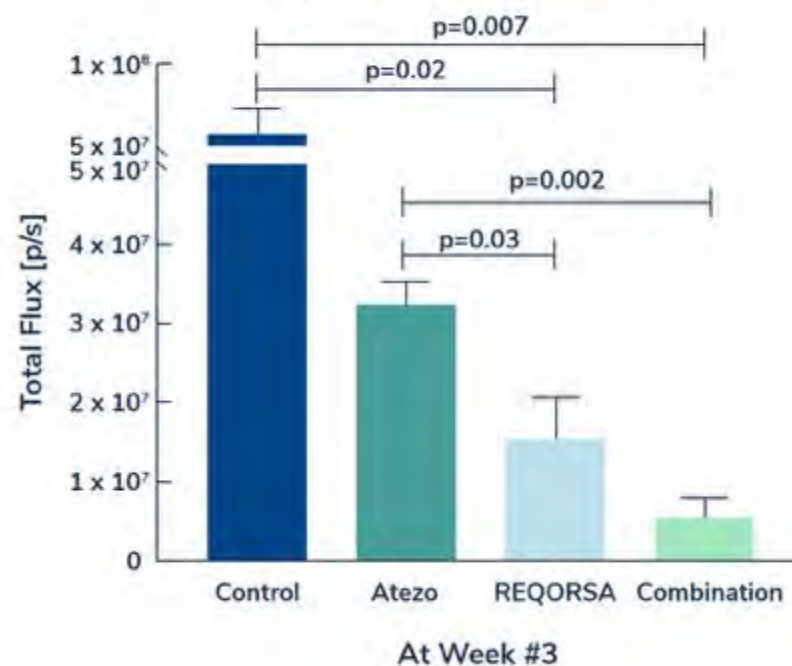
TECENTRIQ



REQORSA + TECENTRIQ

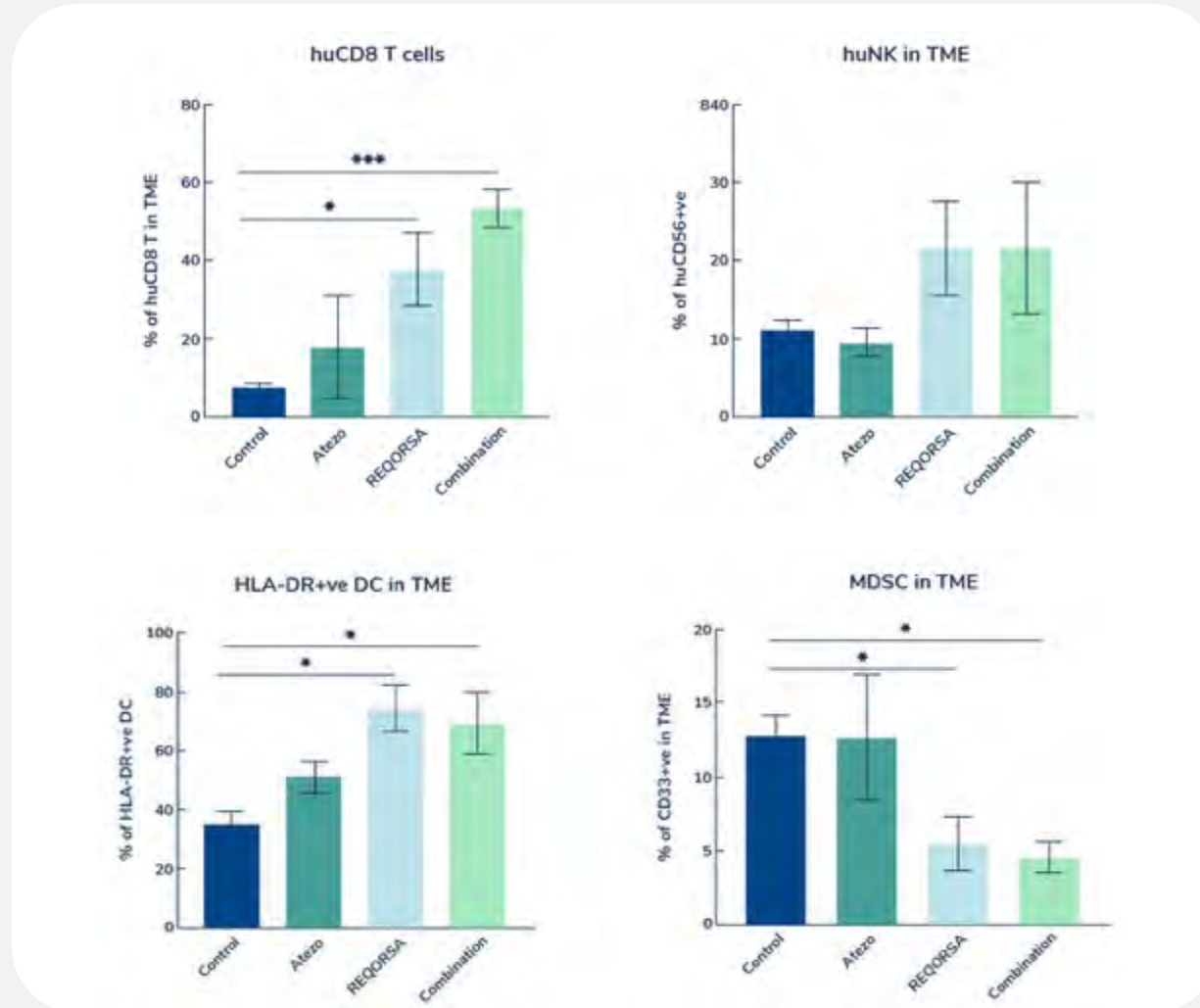


REQORSA + Atezo on H841 SCLC Lung Met in Humanized Mice



Atezolizumab is the generic name of Tecentriq.

# Increased Immune Response with Reqorsa<sup>®</sup> and Tecentriq



Atezolizumab (Atezo) is the generic name of Tecentriq.  
huNK = human natural killer cells  
DC = dendritic cells  
MDSC = myeloid derived suppressor cells  
TME = tumor microenvironment

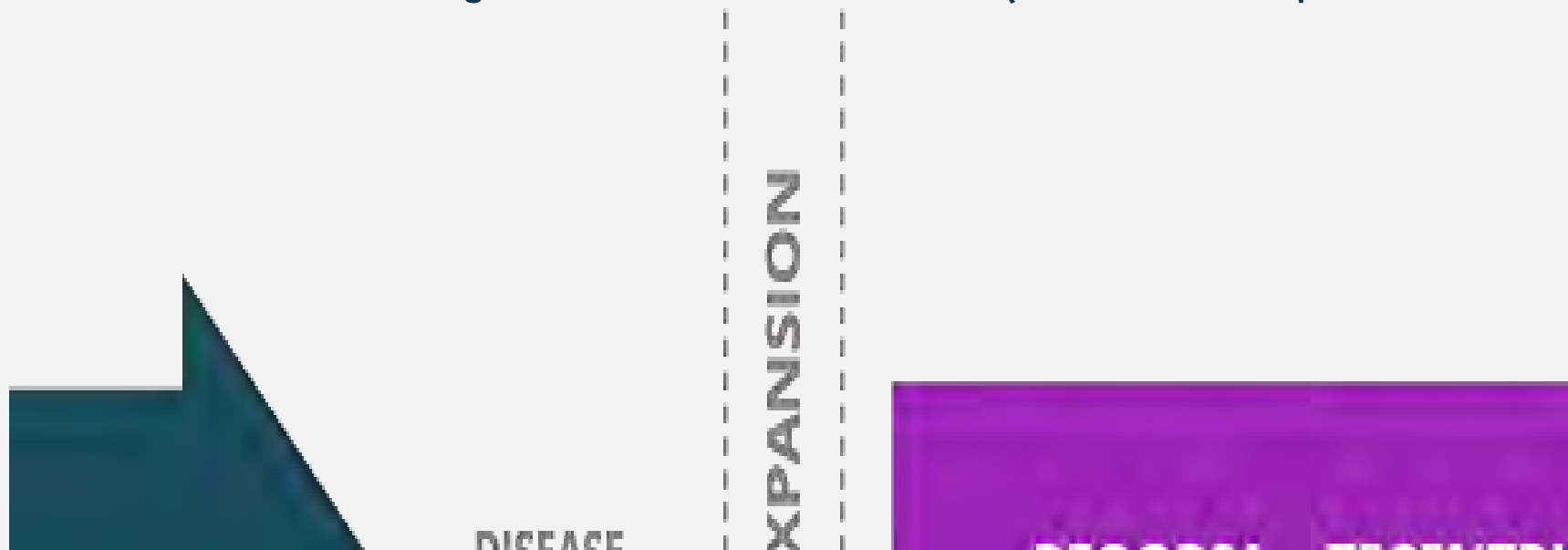
- Patients with ES-SCLC who did not develop tumor progression after receiving Tecentriq® and chemotherapy
- Fast Track Designation and Orphan Drug Designation
- ~10-15 U.S. sites
- ~62 patients
  - Phase 1 Dose Escalation: Completed
  - Phase 2: ~50 patients
- Phase 2 interim analysis after 25th patient enrolled and treated reaches 18 weeks of follow up



Acclaim 3

Reqorsa® in combination with Genentech, Inc.'s Tecentriq® for SCLC

Phase 2: Determine 18-week Progression Free Survival Rate of REQORSA + Tecentriq Maintenance Therapy



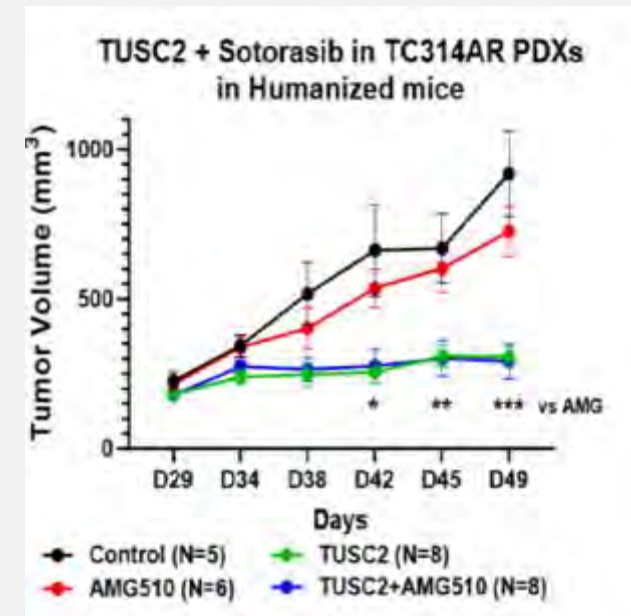
# Reqorsa<sup>®</sup> in Ras Inhibitor Resistant Lung Cancer

REQORSA effectively overcomes sotorasib AR in KRASG12C mutant NSCLC mouse xenografts

## 2024 EORTC-NCI-AACR Symposium on Molecular Targets and Cancer Therapeutics

- TUSC2 transfection significantly reduced colony formation in two Acquired Resistant (AR) cell lines
- Transfection of TUSC2 also markedly increased apoptosis in AR cells
- Treatment with REQORSA alone or in combination with sotorasib was highly effective in controlling H23AR tumor growth in mouse xenografts
- REQORSA alone also exhibited significantly strong antitumor effect on TC314AR patient-derived xenografts (PDXs) where sotorasib alone showed no significant antitumor activity
- A synergistic antitumor effect was observed when TC314AR PDX tumors were treated with the combination of REQORSA and sotorasib

- Researchers demonstrated that REQORSA, alone or in combination with sotorasib inhibited colony formation, induced apoptosis, and showed significant antitumor efficacy in KRASG12C mutant acquired resistant xenografts and in PDX tumor xenografts



Another clinical opportunity to combine  
**REQORSA with Ras inhibitors**

# Reqorsa® in ALK-ELM4 Positive Translocated Lung Cancer

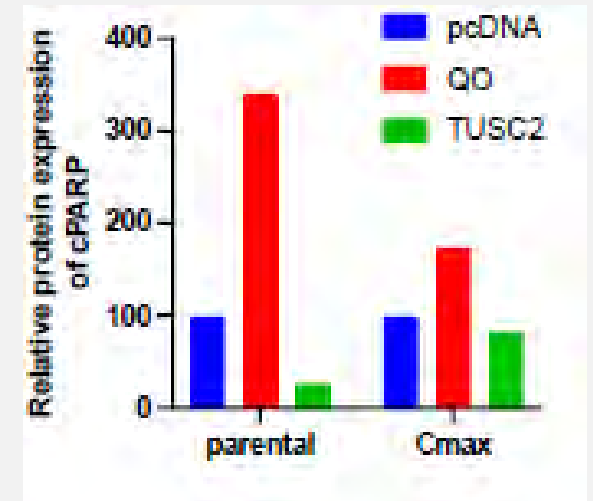
SRA with The University of Michigan Rogel Cancer Center and Collaboration with ALK-Positive Advocacy Group

## 2024 AACR Annual Meeting:

- REQORSA induced apoptosis in alectinib resistant EML4-ALK positive NSCLC cell lines
- Researchers found that overexpressing TUSC2 using REQORSA treatment in ALK+ lung cancer cell lines inhibited the ability of the cells to form colonies
- REQORSA in ALK+ NSCLC cell lines was effective in decreasing cell growth and proliferation through the activation of apoptotic pathways

## ALK-Positive Collaboration:

- Non-profit patient-driven research organization
- Dedicated to improving the life expectancy and quality of life for ALK+ lung cancer patients
- Both Genprex and ALK Positive share the cost of the Sponsored Research Agreement (SRA) with the University of Michigan Rogel Cancer Center



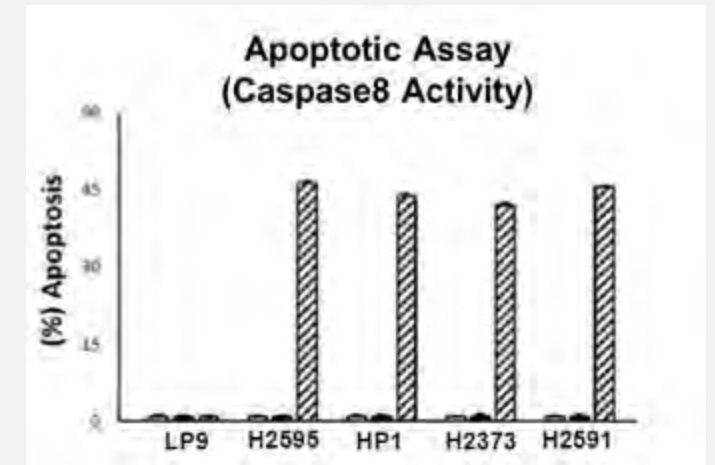
Another clinical opportunity to combine  
**REQORSA with ALK inhibitors**

# Reqorsa® in Mesothelioma

SRA with New York University  
Langone Health

## 2024 EORTC-NCI-AACR Symposium on Molecular Targets and Cancer Therapeutics

- Researchers investigated whether TUSC2 transfection could modulate MPM aggressive properties
- Four MPM cell lines and tert-transformed mesothelial LP9 cells were treated with REQORSA and control liposomes for 48h. Treated cells were then evaluated for TUSC2 expression by semi quantitative RT-PCR, Western blot analysis, and functional assays including cell proliferation, invasion, and apoptosis.
- Researchers demonstrated that REQORSA treatment resulted in:
  - Significant decrease in cell proliferation, cell invasion, and a significant increase in cell apoptosis in all four MPM cell lines
  - Potent tumor suppressive activity of the TUSC2 gene delivered by REQORSA

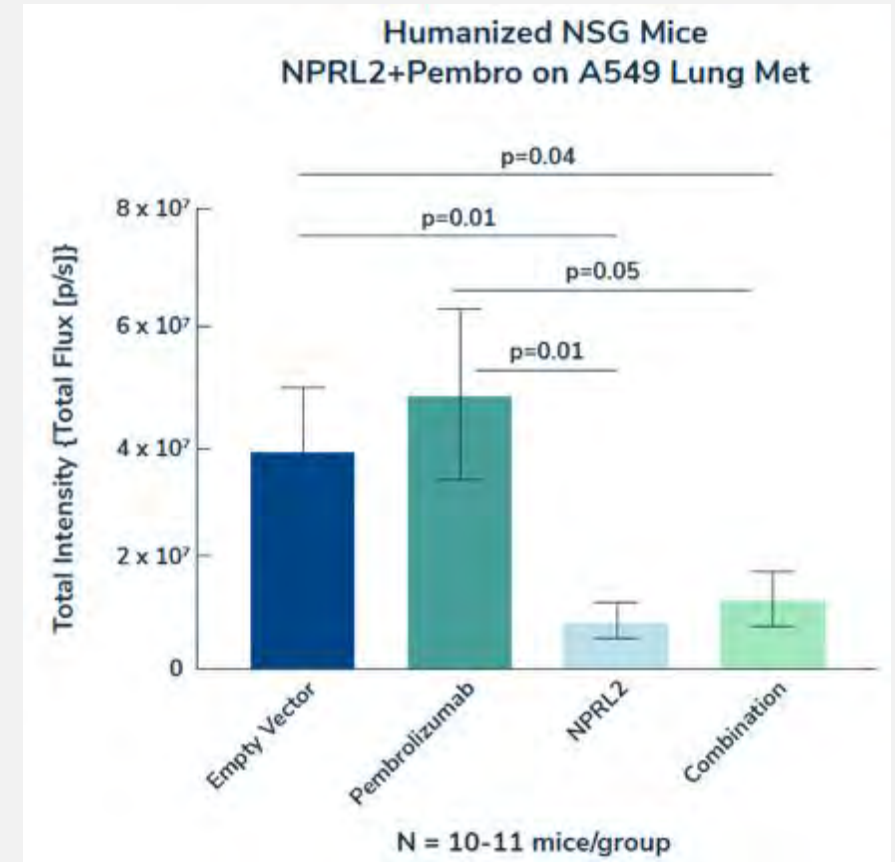


Another clinical opportunity for  
**REQORSA**

# NPRL2 Induces Anti-tumor Activity in NSCLC

## Further Evidence of Oncoprex® Delivery System as a Platform for Treatment Using Tumor Suppressor Genes

- Study investigated the antitumor responses to NPRL2 gene therapy on anti-PD1 resistant KRAS/STK11 mutant NSCLC in a humanized mouse model
- Humanized mice were treated with NPRL2 gene therapy, Keytruda®, or the combination
- A dramatic antitumor effect was observed by NPRL2 treatment, whereas Keytruda was largely ineffective
- NPRL2 gene therapy induces antitumor activity on KRAS/STK11 mutant anti-PD1 resistant NSCLC through DC mediated antigen presentation and cytotoxic immune cell activation



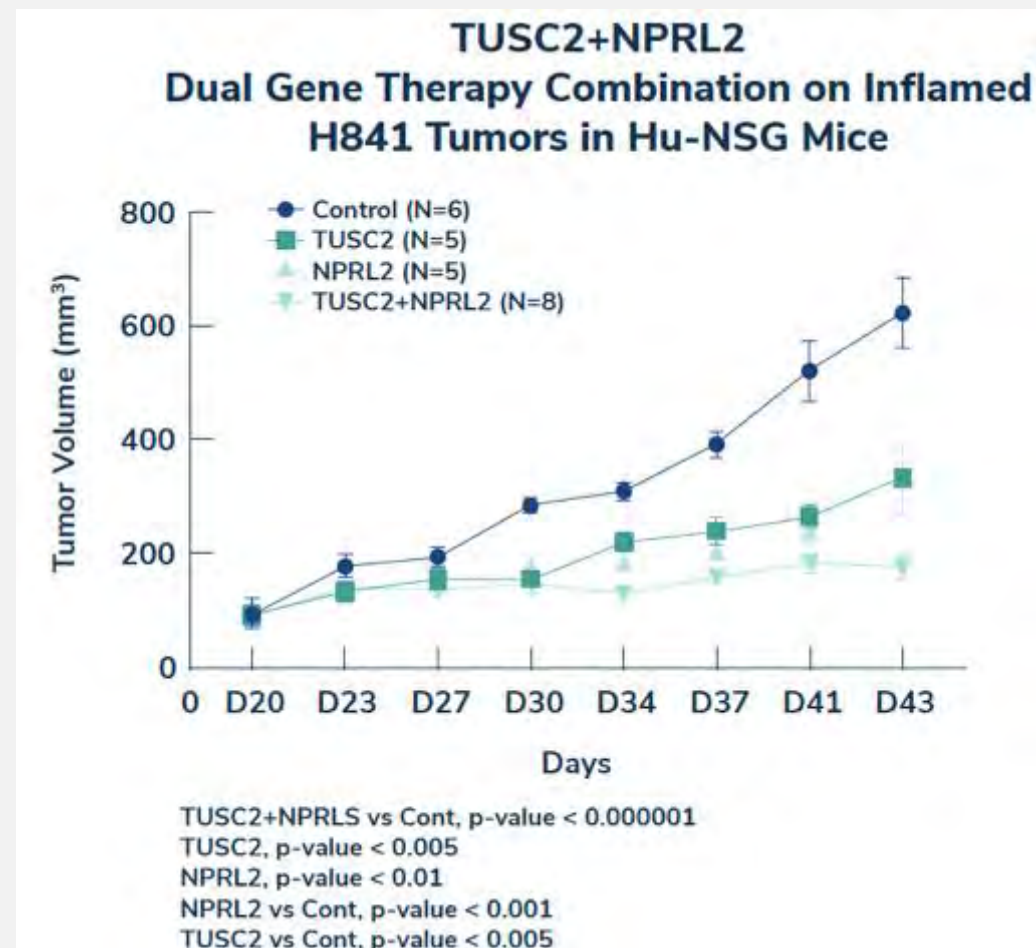
Provides preclinical validation of the ONCOPREX Delivery System, **which may provide a multitude of potential pipeline opportunities beyond lung cancer.**

# Combined TUSC2 and NPRL2 Re-Expression in SCLC

H841 lacks both TUSC2 and NPRL2 protein

Increased control of xenograft growth compared to:

- Control
- TUSC2 re-expression alone
- NPRL2 re-expression alone



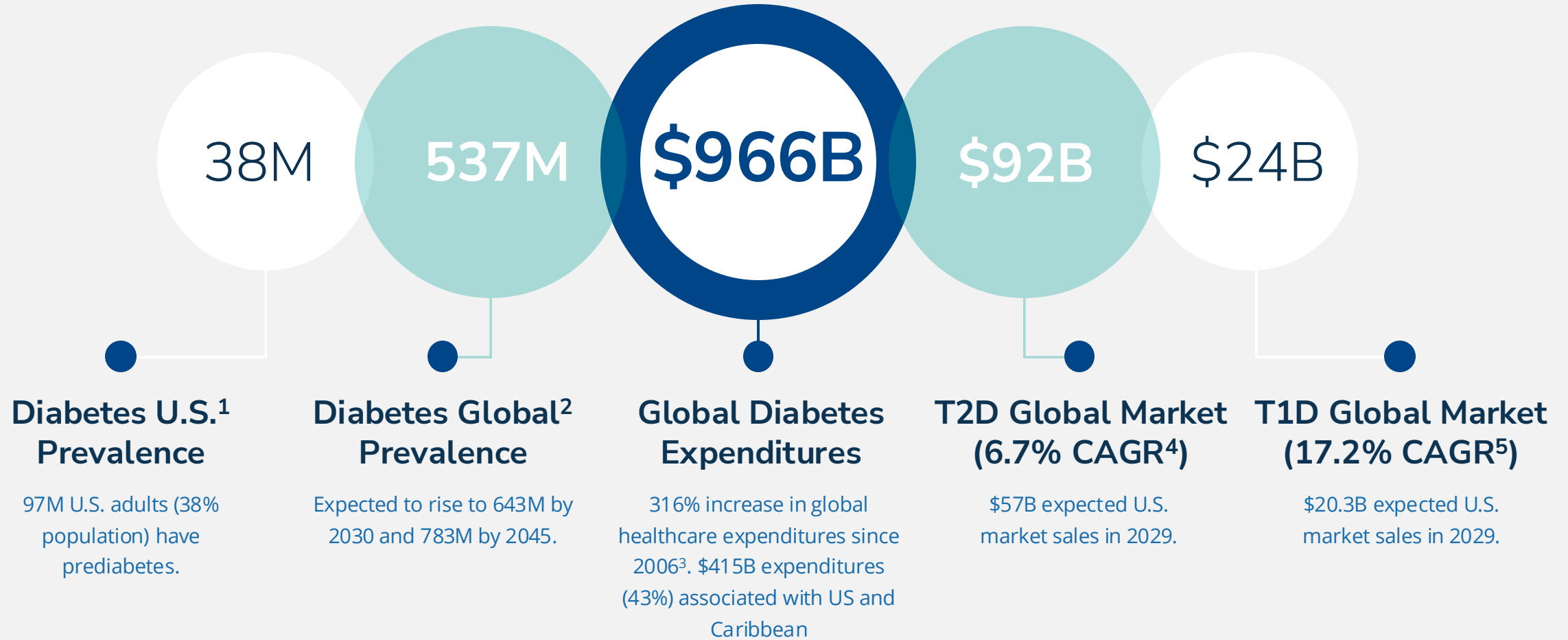


# DIABETES



[www.genprex.com](http://www.genprex.com)

# Diabetes: By the Numbers



Diabetes can cause serious complications.

In 2021, there was approximately **1 death every 5 seconds** caused by diabetes worldwide.



# Diabetes Causes Serious Complications



## Heart Disease

Leading cause of death for men and women in U.S. Diabetics are 2x as likely to have heart disease or a stroke.



## Chronic Kidney Disease

Approximately 1 in 3 adults with diabetes have CKD. Kidney diseases are the 9th leading cause of death in U.S.



## Nerve Damage

High blood sugar can lead to diabetic neuropathy. 50% of people with diabetes have nerve damage.

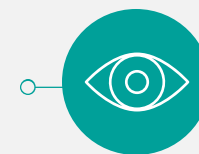


## Foot Health (Diabetic Neuropathy)

Feet and legs most affected by diabetic neuropathy. 50% of annual amputations are associated w/ diabetes.

## Vision Loss (Diabetic Retinopathy)

Diabetic retinopathy affects almost 1/3 of adults over 40 years old. Diabetes is leading cause of new blindness cases in adults.



## Hearing Loss

Hearing loss is 2x as common in diabetics. Prediabetes have a 30% higher rate of hearing loss.



## Oral Health

Gum disease can be more severe and take longer to heal. 25% of U.S. diabetics over 50 years old have severe tooth loss.

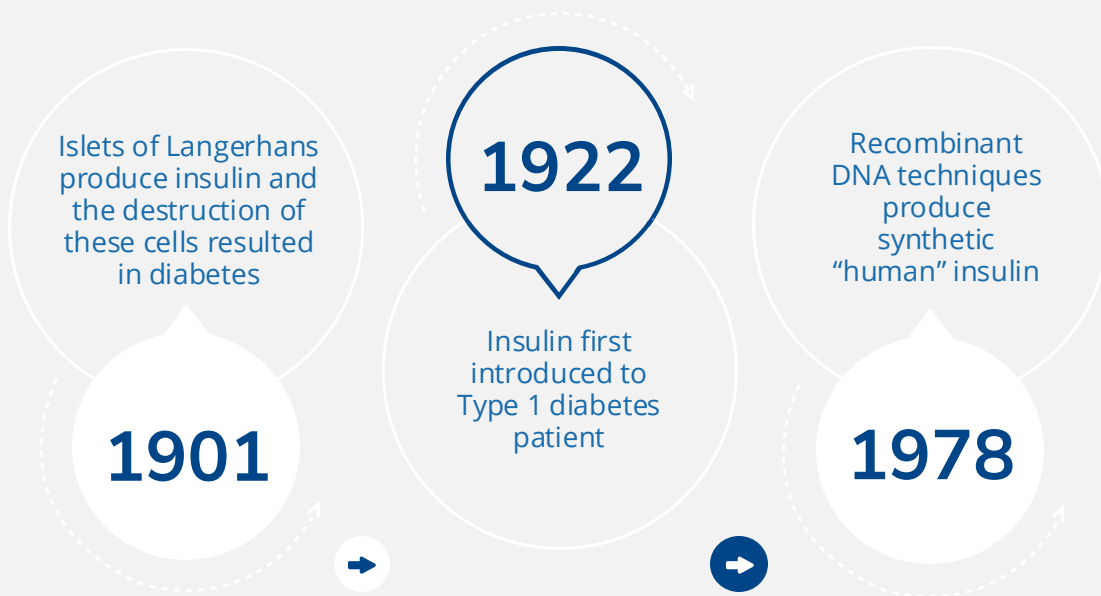


## Mental Health

Blood sugar levels are affected by stress. Diabetics are 2-3x more likely to have depression.



# Diabetic Patients Are In Need of Advanced Therapy



The most significant advancement in the treatment of diabetes happened in 1922 – more than 100 years ago.

Potential for disease modification for long-term effectiveness.



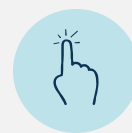
## Patients suffer compromised quality of life

Despite certain advancements in treatment, quality of life remains highly compromised for many individuals with diabetes.



## Gene therapy has potential to be the key

Diabetes gene therapies hold the potential to provide long-term effectiveness and change the course of the disease.



## Potential to improve diabetic's lifestyle

Our treatment may replace the daily burden of blood glucose monitoring and insulin replacement therapy, including finger pricks and insulin injections.

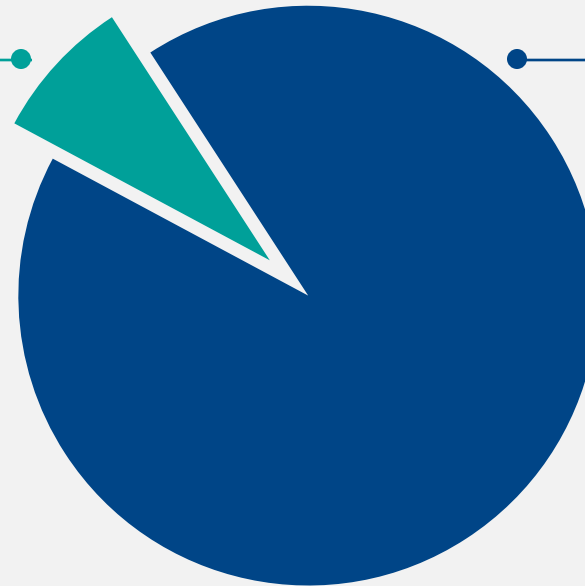
# Novel Gene Therapy Diabetes Program

Collaboration with University of Pittsburgh  
intends to address both T1D and T2D.

38M or 11.6% of Americans Have Diabetes<sup>1</sup>

## Type 1 Diabetes (5-10%)

An auto-immune condition where the body's immune system destroys pancreatic beta cells that make insulin. Generally occurs in children and adolescents.



## Type 2 Diabetes (90-95%)

Inability of the pancreas to produce enough insulin due largely to resistance to insulin function. Generally occurs in adulthood, and highly related to obesity.

Genprex is positioned as an  
**innovator in emerging diabetes therapies.**

# GPX-002 Replenishes Insulin Producing Cells

Reprograms and restores cell function in T1D.

## Delivers Genes to the Pancreas

A novel infusion process uses an AAV vector to deliver the Pdx1 + MafA (PM) genes to the pancreas.

## Reprograms Alpha Cells

GPX-002 transforms alpha cells in the pancreas into functional beta-like cells, which can produce insulin but may be distinct enough from beta cells to evade the body's immune system.

## Restores Blood Glucose Levels

In vivo, preclinical studies show that **GPX-002 restored normal blood glucose levels** for an extended period of time.

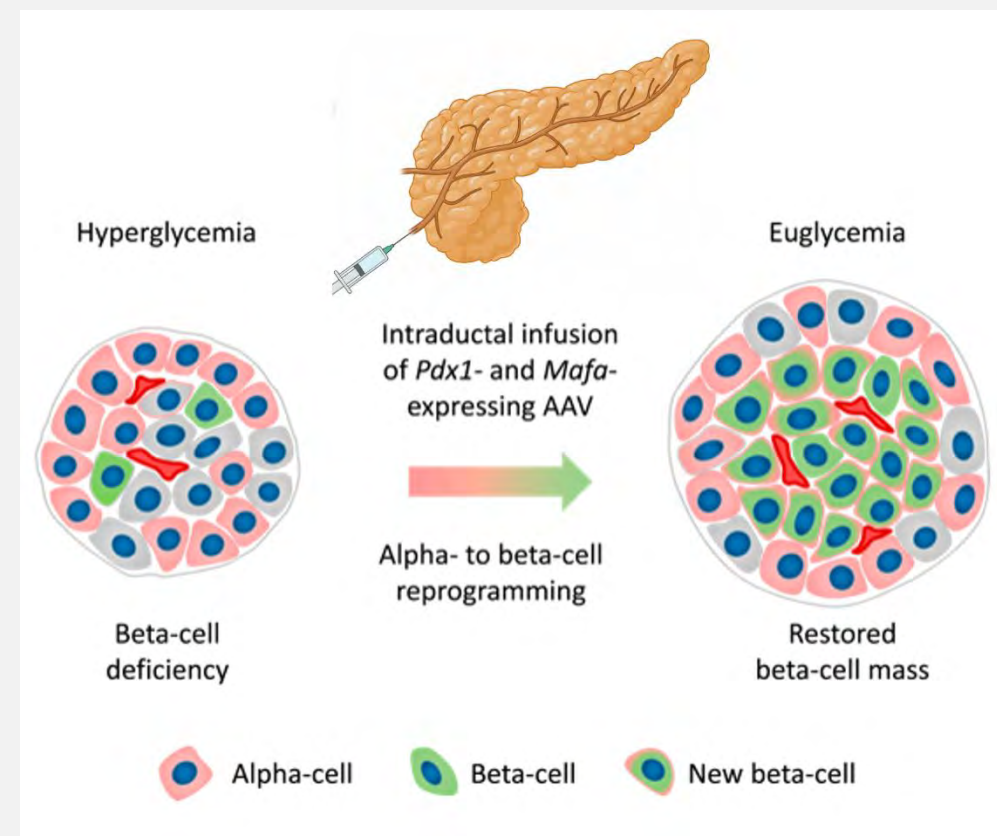
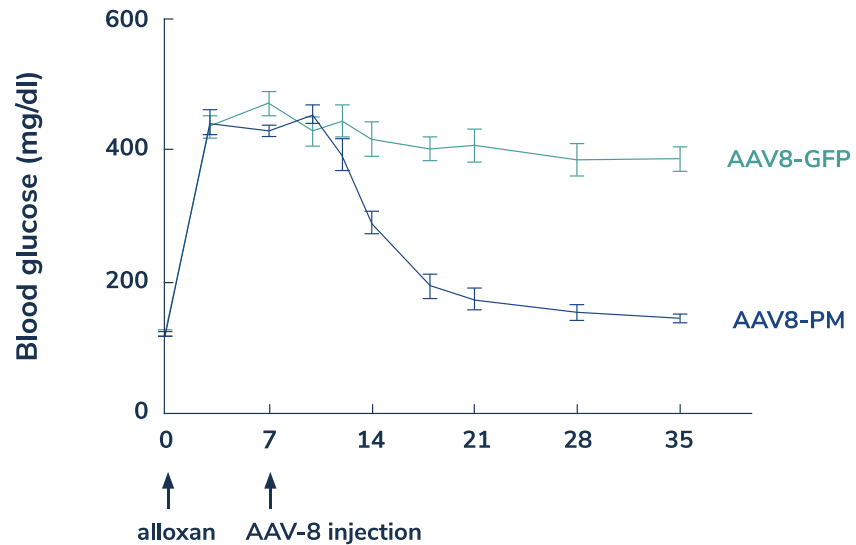
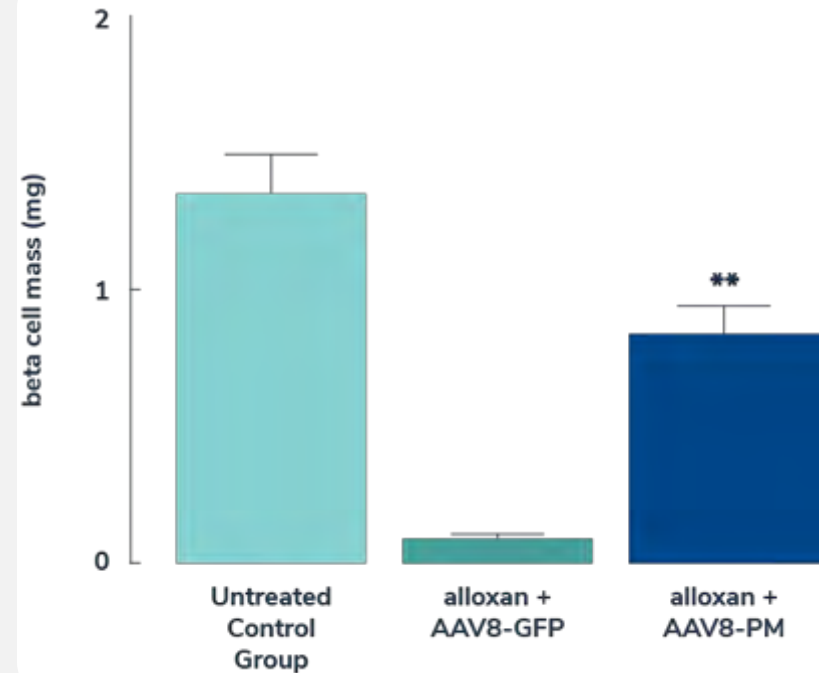


Image source: Osipovich, Anna & Magnuson, Mark. (2018). Alpha to Beta Cell Reprogramming: Stepping toward a New Treatment for Diabetes. *Cell Stem Cell*. 22. 12-13. 10.1016/j.stem.2017.12.012.

# Reversed Drug-Induced Diabetes in T1D Toxin-Induced Mouse Model



GFP = Green Fluorescent Protein (fluorescent marker) | PM = Pdx1 + MafA



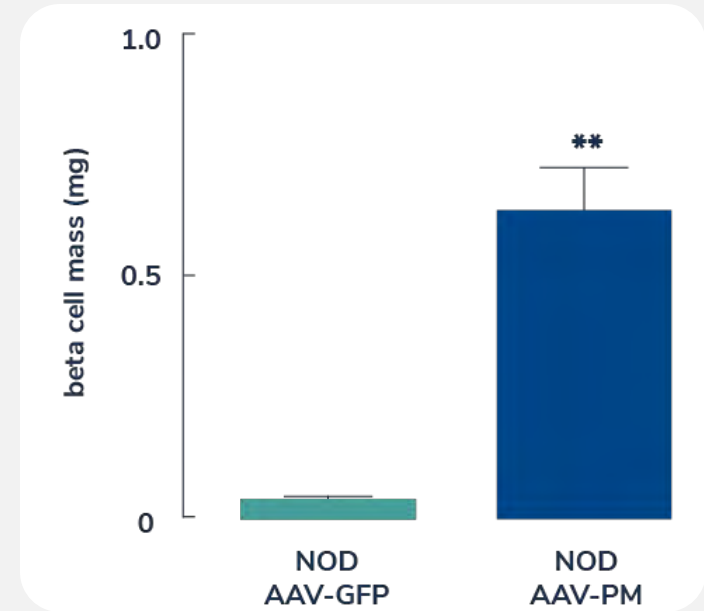
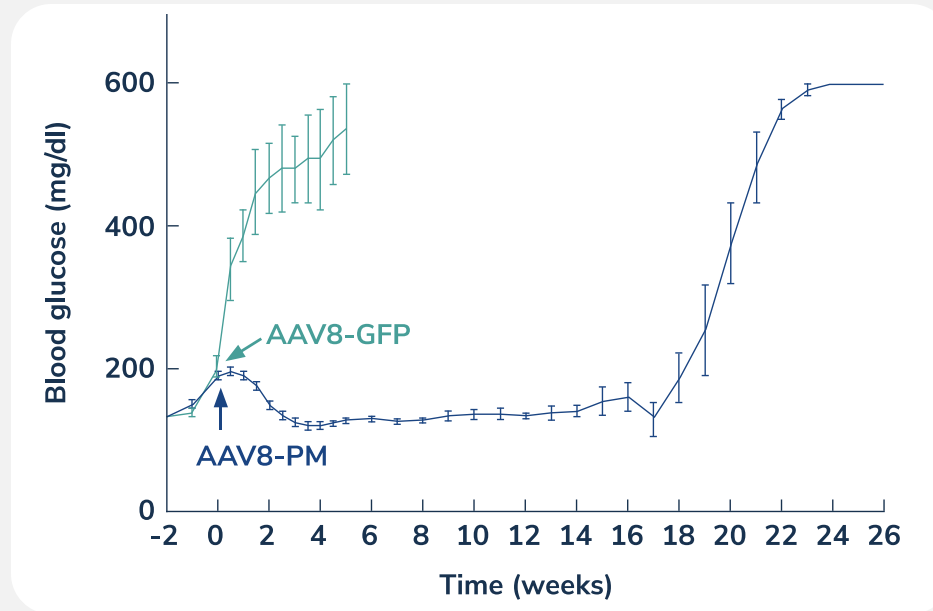
Reprogrammed alpha cells into beta-like cells that appropriately produce insulin in response to glucose levels.

Normalized blood glucose in beta cell-toxin-induced diabetic mice.

# Restored Blood Glucose in T1D In Autoimmune Mouse Model for Four Months

The duration of restored blood glucose levels in mice could potentially translate to decades in humans.

- One week in a mouse tends to correlate to about one year in humans.
- NOD mice given syngeneic islet transplants became hyperglycemic a median of 17 days after treatment.

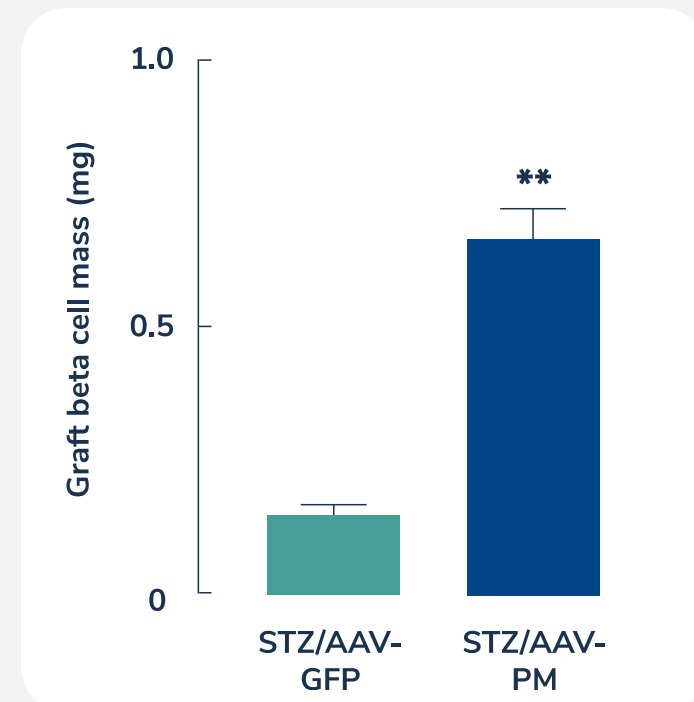
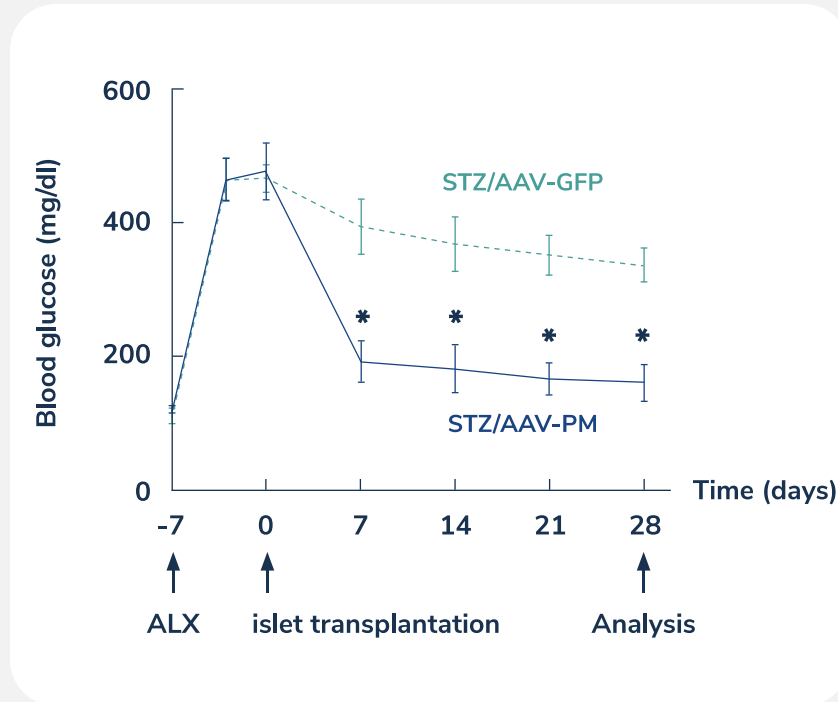


GFP = Green Fluorescent Protein (fluorescent marker) | PM = Pdx1 + MafA

# Induced Generation of Functional Insulin-Expressing Cells from Alpha Cells in Human Islets

Provides a potential basis for further investigation in human Type 1 diabetes

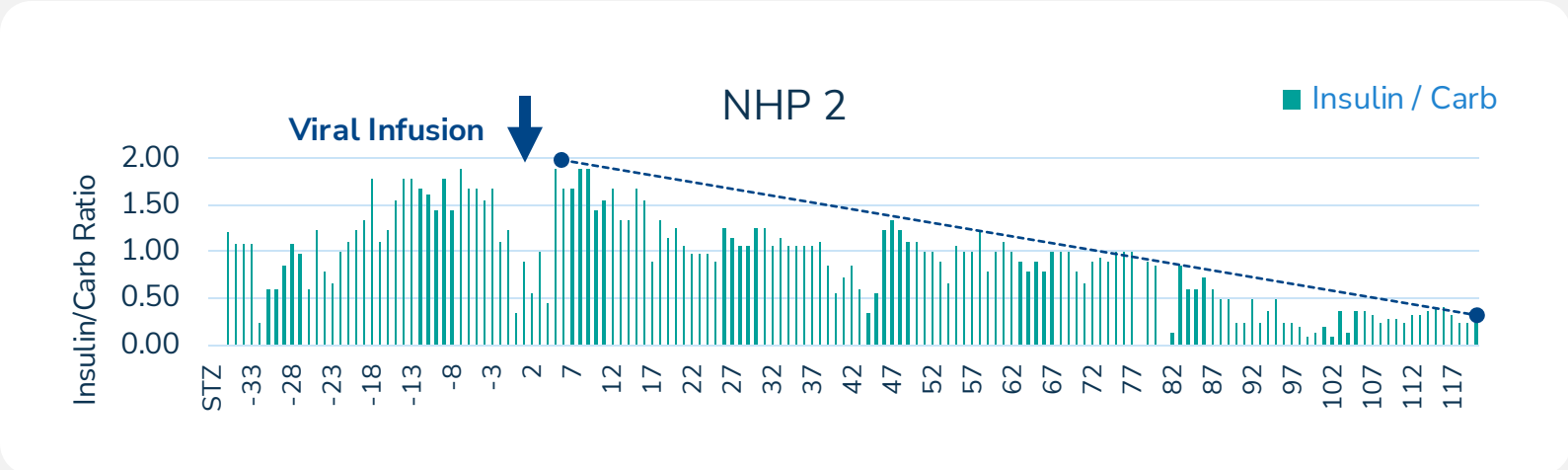
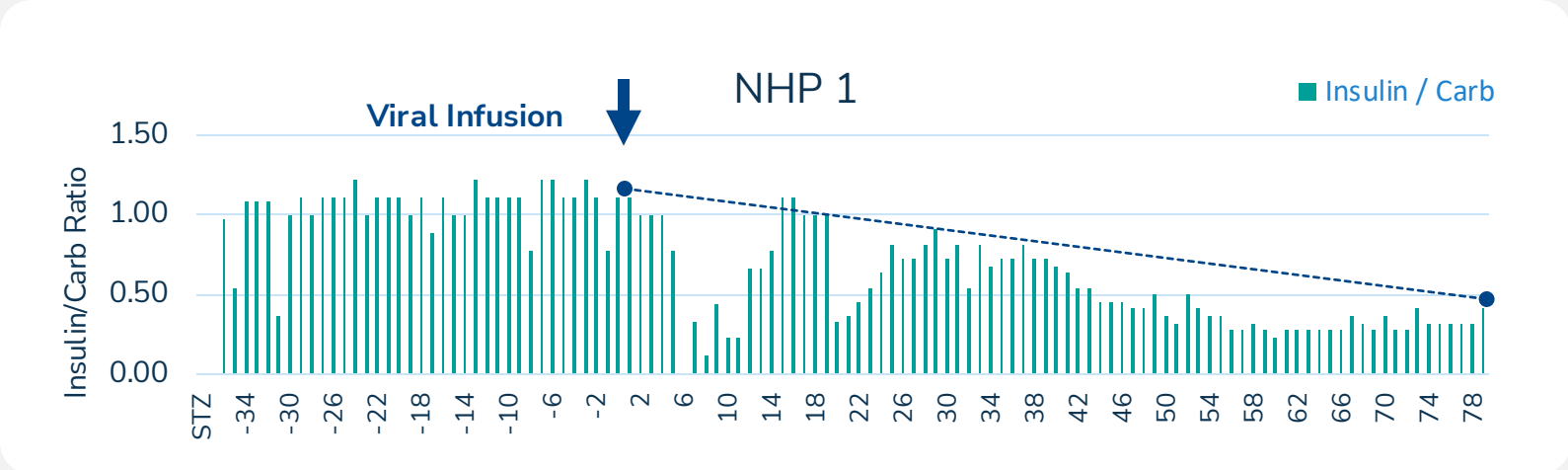
- Human islets treated with streptozotocin to destroy beta-cells, then treated with either AAV-PM or AAV-GFP
- AAV treated islets then transplanted into hyperglycemic NOD/SCID mice, treated with alloxan to destroy beta cells
- NOD/SCID mice receiving AAV-PM islets had significantly lower blood glucose levels and significantly higher beta cell mass than those receiving AAV-GFP islets
- These data suggest that the **AAV-PM treatment can convert human alpha cells into human beta-like cells that secrete insulin**



GFP = Green Fluorescent Protein (fluorescent marker) | PM = Pdx1 + MafA

# Non-Human Primate Model of T1D

## Reduced Insulin Requirements



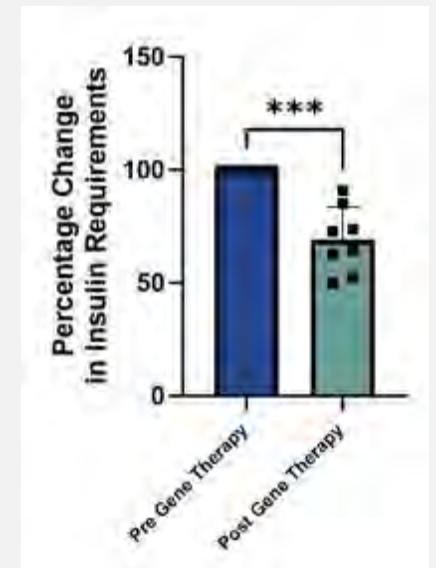
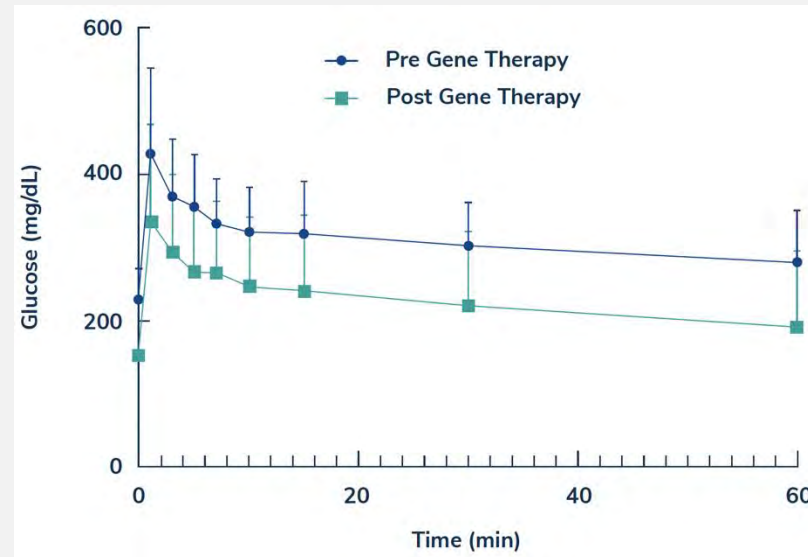
NHP = Non-Human Primate

Data from University of Pittsburgh researchers show a marked reduction in insulin requirements.

# ATTD 23: Decreased Insulin Requirements and Improved Glucose Tolerance in NHPs

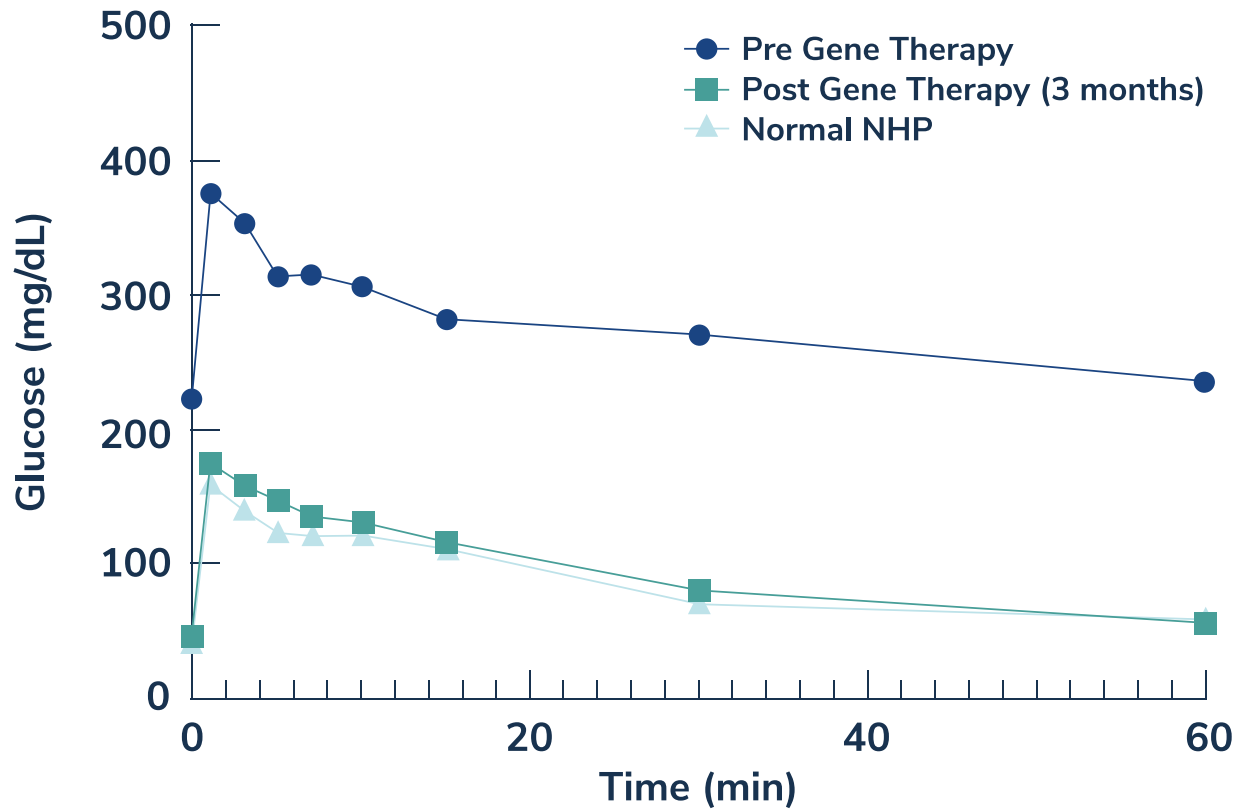
Following the pancreatic intraductal infusion of the AAV engineered construct, the eight NHPs had:

- Decreased insulin requirements ( $p < 0.001$ )
- Increased c-peptide levels ( $p < 0.05$ )
- Improved glucose tolerance compared to baseline ( $p < 0.05$ )
  - One NHP had normal glucose tolerance three months post-gene therapy
- The presence of more insulin-positive cells compared to non-treated diabetic controls based on immunohistochemistry (IHC)



# NHP2

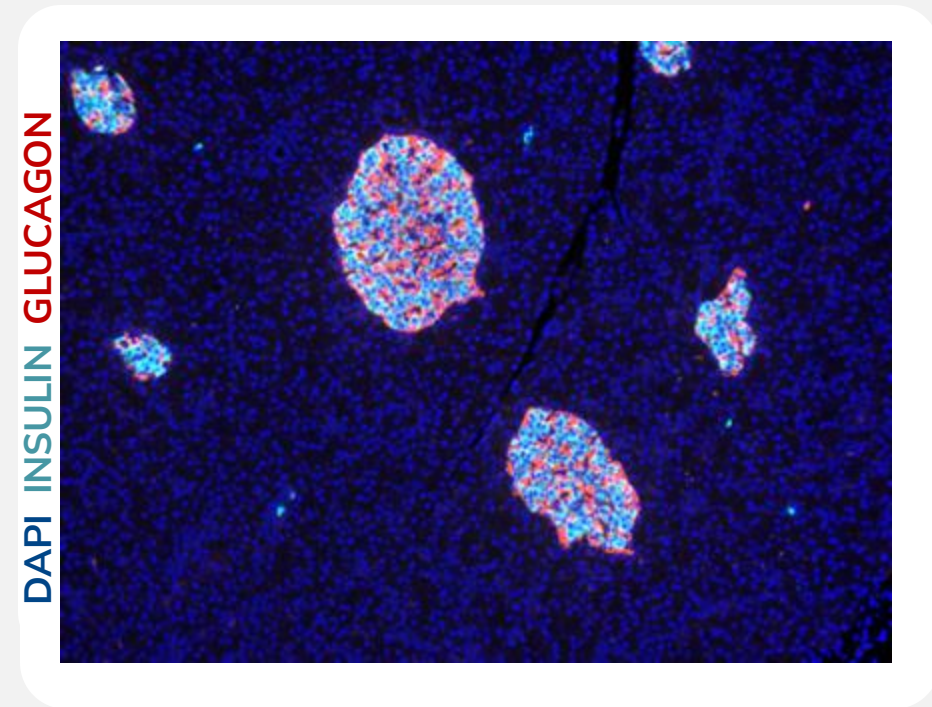
## Three-Month Glucose Tolerance Test



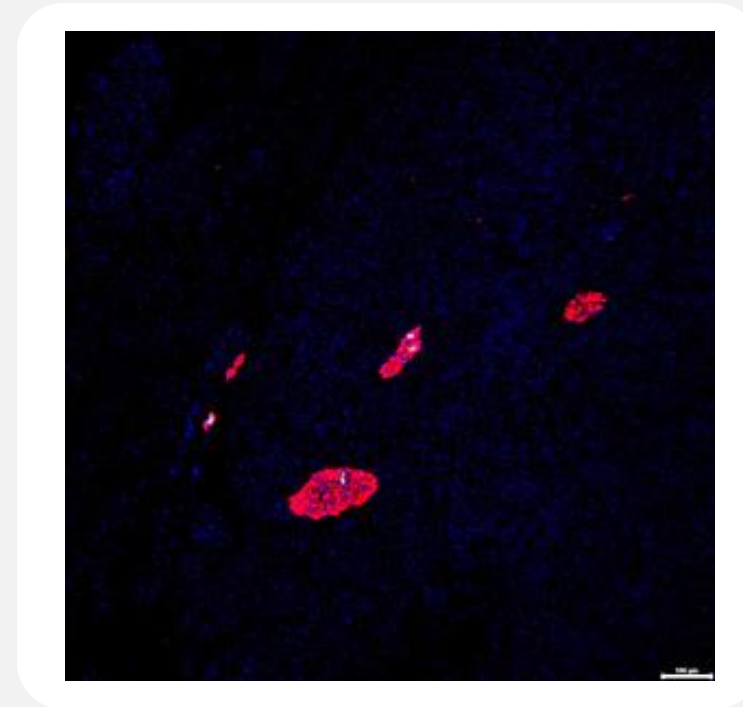
UNPUBLISHED DATA

# IHC Eight Weeks After Gene Therapy

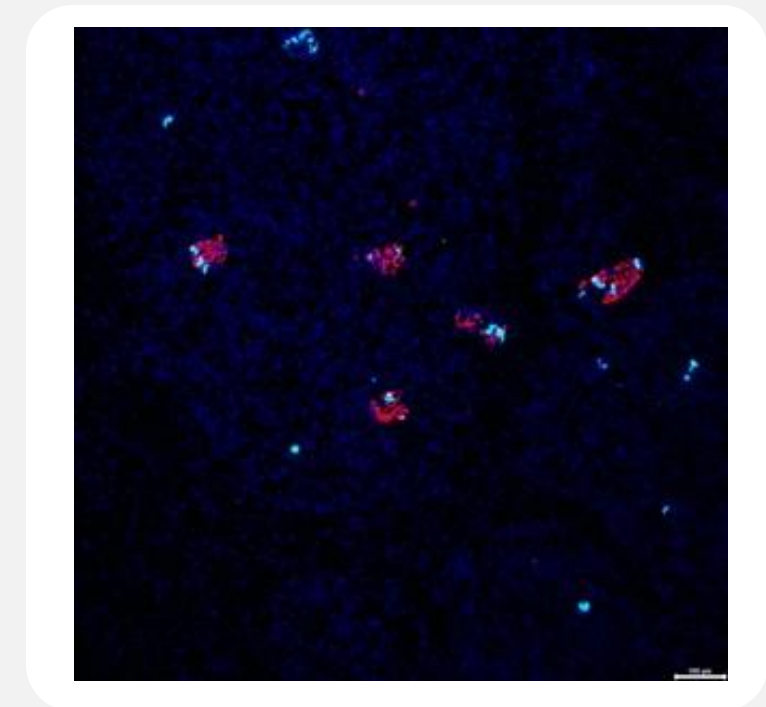
Need at least 20% of normal beta cell mass to maintain normoglycemia



Normal NHP



Diabetic NHP Without Gene Therapy



Diabetic NHP After Gene Therapy



# CORPORATE



[www.genprex.com](http://www.genprex.com)

# Our Team: Company Management



Ryan Confer, MS  
President, Chief Executive Officer &  
Chief Financial Officer

---

10+ years of C-Level  
experience in emerging  
technology companies

Extensive experience in  
investment management,  
deal negotiation and  
technology transfer



Mark S. Berger, MD  
Chief Medical Officer

---

25 years of biotech and  
pharmaceutical company  
experience in the  
development of oncology  
therapeutics

Successfully brought two  
drugs through the regulatory  
process to approval



Thomas Gallagher, JD  
Senior Vice President,  
IP & Licensing

---

20+ years of expertise in  
biotech IP law, business  
development, licensing  
transactions

Seasoned IP executive and  
attorney



David Schloss, JD  
Senior Vice President,  
Human Resources

---

25+ years of experience as  
human resources executive  
and employment attorney in  
life sciences with a focus on  
biotech and cell and gene  
therapy



Suzanne Thornton-Jones, PhD  
Senior Vice President,  
Regulatory Affairs

---

25+ years of experience in  
drug development and  
regulatory strategy and affairs  
for gene therapies

# Our Team: Scientific Advisory Board



Jack A. Roth  
MD, FACS, Chairman

---

Professor and Bud Johnson Distinguished Clinical Chair, Department of Thoracic and Cardiovascular Surgery; Chief, Section of Thoracic Molecular Oncology; Professor of Molecular and Cellular Oncology; UT MD Anderson Cancer Center

Director, W.M. Keck Center for Innovative Cancer Therapies



Tony S. K. Mok  
MD, FRCP(C), FHKCP, FHKAM

---

Professor and Chair of Clinical Oncology, the University of Hong Kong; Co-founder of the Lung Cancer Research Group



Pasi Antero Jänne  
MD, PhD

---

Professor of Medicine, Harvard Medical School; Director of Dana Farber Cancer Institute Lowe Center for Thoracic Oncology; Scientific Director of the Belfer Center for Applied Cancer Science; Director, Chen-Huang Center for EGFR Mutant Lung Cancers; Head of The Jänne Lab



George Simon  
MD

---

Chair, Department of Medical Oncology at Advent Health – Celebration; Executive Director of the Moffitt Cancer Center-Advent Health joint Clinical Research Unit



George K. Gittes  
MD

---

Chief of Pediatric Surgery and Surgeon-in-Chief Emeritus at the UPMC Children's Hospital of Pittsburgh; Director of the Richard King Mellon Foundation Institute for Pediatric Research; Co-Scientific director at UPMC Children's Hospital

# Our Team: Clinical Advisory Board



Michael Morse  
MD, MHS, FACP

---

Professor of Medicine,  
Division of Medical Oncology  
in the Department of Surgery  
at Duke University

Research expertise in  
targeted therapies and  
immunotherapies for cancer



Andrew Becker  
MD, PhD

---

President and Founder,  
Becker Pharmaceutical  
Consulting

Experience in consulting  
biotech and pharma  
companies on a global basis



Col. George Peoples  
MD, FACS

---

Chief Executive Officer of  
Cancer Insight, LLC, a  
boutique cancer  
immunotherapy CRO

Professor of Surgery at  
Uniformed Services  
University; Professor of  
Surgical Oncology at MD  
Anderson Cancer Center

# Our Team: Board of Directors



Jose A. Moreno Toscano  
Chairman of the Board

---

Chief Executive Officer, LFB  
USA Inc

20+ years of experience in  
pharma and biotech  
industries



Ryan Confer, MS  
Board Director

---

10+ years of C-Level  
experience in emerging  
technology companies

Extensive experience in  
investment management,  
deal negotiation and  
technology transfer



Brent Longnecker  
Board Director

---

Chief Executive Officer,  
Longnecker & Associates

30+ years of experience  
consulting with BODs, CEOs,  
key executives and advisors in  
many industries



William R. Wilson, Jr.  
Board Director

---

Chief Executive Officer,  
Wilson Land & Cattle Co.

40+ years of legal experience  
spanning health care, biotech,  
clinical trial management



James E. Rothman, PhD  
Strategic Advisor  
to the Board

---

2013 Nobel Prize in  
Physiology/Medicine

Member of the National Academy  
of Sciences and its Institute of  
Medicine; Professor of Biomedical  
Sciences, Yale University;  
Chairman of the Department of  
Cell Biology, Yale School of  
Medicine; Director of the  
Nanobiology Institute, Yale West  
Campus

# Achievements & Upcoming Milestones

## Acclaim · 1

- ✓ Open for enrollment in Phase 2a Expansion portion of the trial in Jan. 2024
- ☐ Complete enrollment of first 19 patients in Phase 2a Expansion portion of the trial by the end of 2025 for interim analysis
- ☐ Expect Phase 2a interim analysis in 1H 2026

## Acclaim · 3

- ✓ Complete Phase 1 Dose Escalation in 2H 2024
- ✓ Open for enrollment in Phase 2 Expansion portion of the trial in 2H 2024
- ☐ Complete enrollment of first 25 patients in Phase 2 Expansion Portion in 2H 2025 for interim analysis

## GPX-002

- ✓ Initiate research with non-viral lipid nanoparticle delivery system
- ✓ Formation of diabetes-focused wholly-owned subsidiary
- ☐ Initiate research in T2D animal models
- ☐ Poised for FDA guidance on IND-enabling studies in 2H 2025

## Corporate

- ✓ Formation of Mesothelioma Clinical Advisory Board
- ✓ Initiate research with support of the ALK-Positive Lung Cancer Advocacy Group
- ☐ Collaborators to present preclinical data at the April 2025 AACR meeting

We believe in a future of  
**transformational** patient care.

21<sup>st</sup> Century  
Gene  
Therapies

Large  
Markets &  
Unmet Need

Combination  
Trials with Top  
Selling Drugs

Two FDA  
Fast Track  
Designations

Exploring New  
Indications &  
Partnerships



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## Slide 37

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2. Amputation Prevention Centers of America: <https://bit.ly/4l3g1mu>
3. National Institutes of Health: <https://bit.ly/4iTBbsh>

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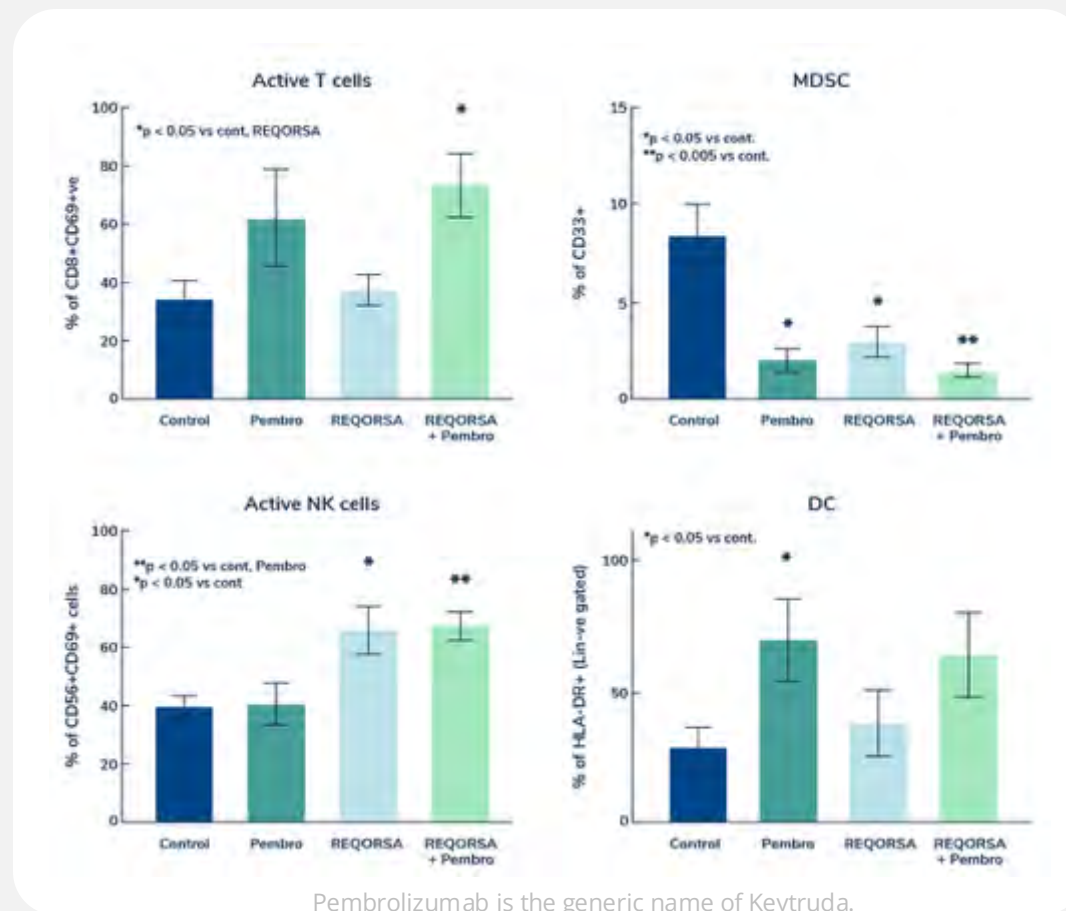
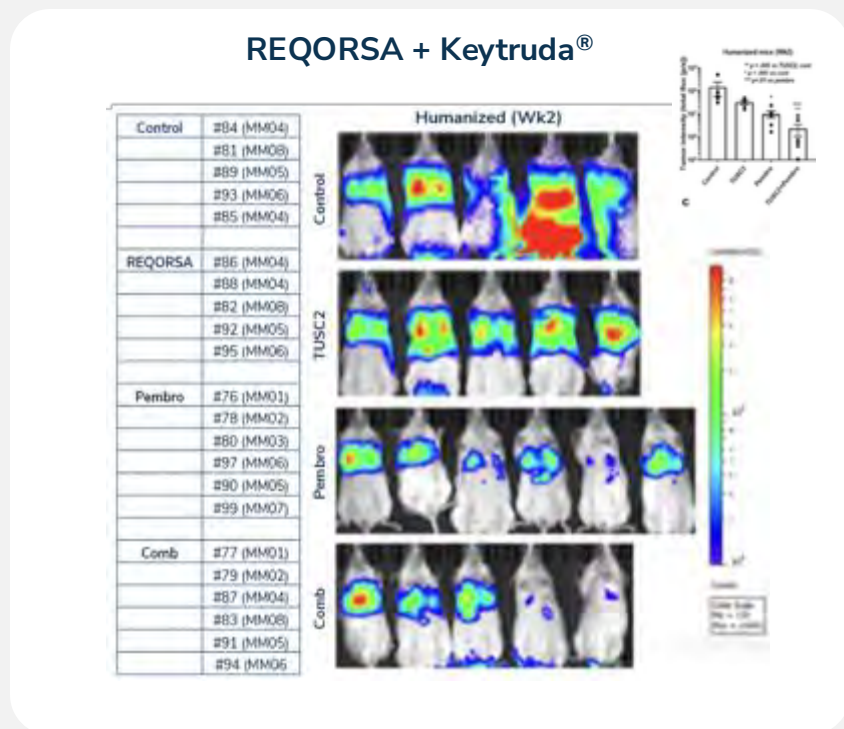
# APPENDIX



[www.genprex.com](http://www.genprex.com)

# Reqorsa<sup>®</sup> + Keytruda<sup>®</sup> Significantly Reduced Tumor Growth

REQORSA increases immune response  
against lung cancer xenografts

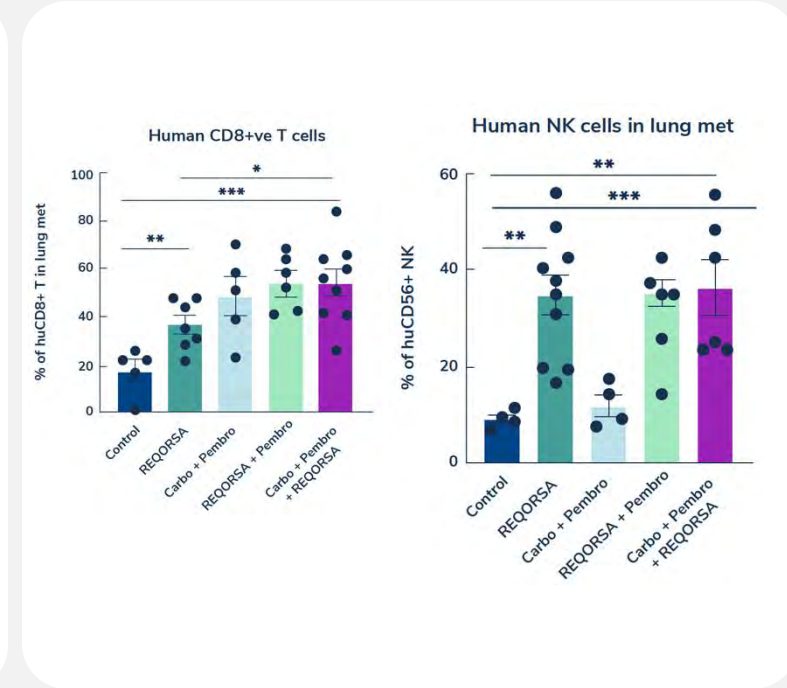
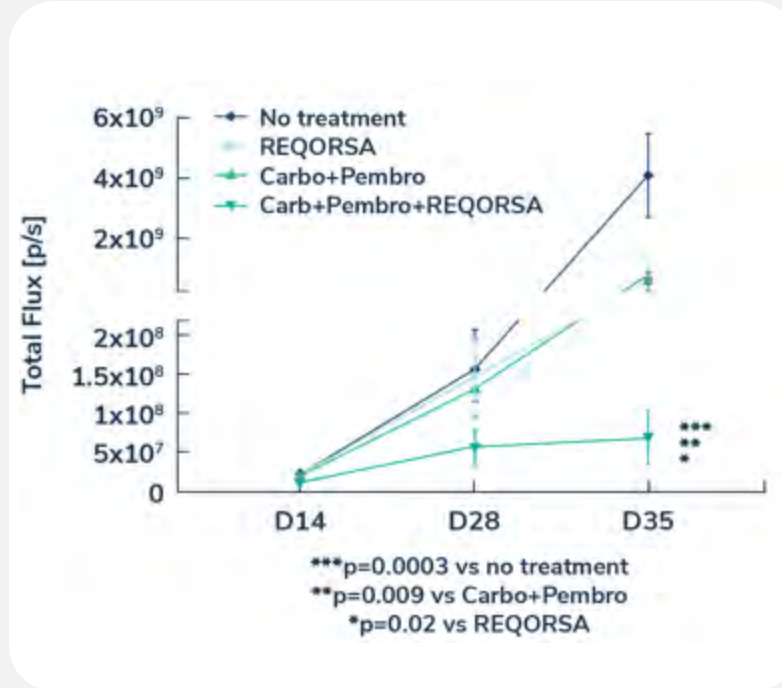


The independent immunologic effects of REQORSA and Keytruda markedly decrease tumor growth by increasing the immunologic attack on the tumor compared to PD-1 inhibition alone.

# AACR 21: Reqorsa<sup>®</sup> May Enhance First-Line Standard of Care

## Reqorsa<sup>®</sup> + Keytruda<sup>®</sup> + Chemo

- REQORSA enhances the efficacy of chemo-immunotherapy on KRAS-LKB1 (KL)-mutant lung metastases in humanized mice.
- Triple combination demonstrated strong antitumor efficacy and induced robust antitumor immunity in KL-mutant NSCLC in clinically relevant humanized mice models.



Pembrolizumab is the generic name of Keytruda.

Acclaim-2 is no longer enrolling new patients.

Overview of the former trial:

- Patients with advanced NSCLC whose disease progressed after treatment with Keytruda®
- FDA Fast Track Designation



Reqorsa® in combination with Merck & Co's Keytruda® for NSCLC

Phase 2b: Comparing Progression Free Survival of REQORSA + Keytruda vs. docetaxel +/- ramucirumab or Investigator's Choice

