

Goldman Sachs

45th Annual Global Healthcare Conference

Future focus on *in vivo* delivery of biologic therapeutics for large indications and unmet needs

MEIRA GT_x

Diverse Clinical Pipeline

3 late stage clinical programs pivotal/Phase 3

- Retinitis Pigmentosa: Phase 3
 dosing complete. Collaboration with JNJ recently sold back.
- Commercial manufacturing agreement

For prevalent non-inherited indications

- Radiation Induced Xerostomia: pivotal
- Parkinson's Disease: Phase 3 ready

End-to-end GMP manufacturing

Flexible and Scalable

- 2 GMP facilities, commercial scale.
- Plasmid production for GMP
- QC facility with commercial license
- Fill and Finish, warehouse, supply chair
- Specials License
- Proprietary manufacturing process industry leading
- Global Regulatory CMC experience
- AI driven improvements based on 20 vectors and >50 GMP runs

Next Generation Vector Optimization

Potency, safety, dose, CofG

- Capsids:, Muscle, CNS, Eye, Liver,
- Promoters: Muscle, CNS, Liver, eye
- Proprietary Vectorization
 Technology: Peptides and
 Antibodies increases potency 2-10x
 from same promoter
- DATA fed into Al driven in silico cloning
- Organoid testing for HUMAN function

Transformative RiboswitchTechnology In vivo delivery via oral

small molecule

- **in vivo delivery** of any biologic therapeutic
- Precise dose response of protein production to oral small molecule
- in vivo efficacy for antibodies, peptides, hormones and cell therapy
- GLP1, GLP1-GIP, GLP1-GIP-Glucagon, Amylin, PYY combinations
- CAR-T: for liquid and solid tumors and autoimmune disease

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- Unmet need
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- ALS
- MC4R obesity
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Strong Industry Partnerships



janssen

MeiraGTx entered into an asset purchase agreement with Janssen, for the remaining interests in bota-vec for the treatment of XLRP

MeiraGTx will receive a total of up to \$415 million:

- \$130 million in upfront and near-term milestone payments
- Additional \$285 million upon first commercial sales of bota-vec in U.S. & EU and manufacturing technology transfer
- MeiraGTx will manufacture and supply commercial product for Janssen at MeiraGTx's cGMP facilities
- J&J will be responsible for any royalty or milestone amounts that become payable on bota-vec to UCL Business plc (University College London)



In October 2023, MeiraGTx received a **\$30 million strategic investment** from Sanofi through sale of 4 million ordinary shares at \$7.50 per share

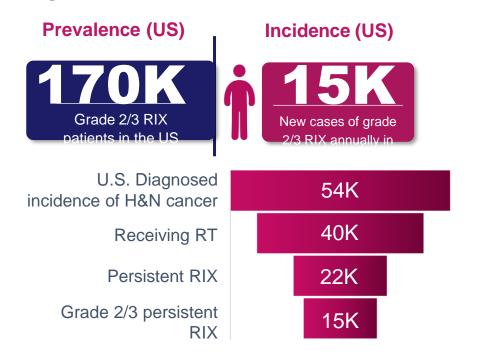
- Sanofi received a Right of First Negotiation (ROFN) for MeiraGTx's phase 2 Xerostomia program, as well as for the use of MeiraGTx's Riboswitch gene regulation technology in certain targets:
 - Immunology and Inflammation (I&I), including IL-4 and IL-13
 - GLP-1 and other gut peptides for metabolic disease and obesity
 - Central Nervous System (CNS)

AAV-AQP1: Large Patient Population with No Treatment Options



Patient Need:

- Large Patient population with Severe, unmet need, no competition
- Readily accessible patients and engaged KOLs
- Low cost of goods and payor support for good pricing



Data:

- Strong Phase 1 data presented AAOM April 2024
- Effect on all endpoints considered 'unprecedented' and 'transformative' by KOLs
- Pivotal Phase 2 enrolling (CMC)

AAV-AQP1 pipeline in a product:

- Sjogren's syndrome
- Radio-labeled Prostate cancer drugs
- Prevention of radiation induced Xerostomia

Pivotal Phase 2 study currently enrolling Potential Global Filings 2026

5

AAV-GAD for Parkinson's Disease: Phase 3 ready

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Significant improvements in Parkinsion's Disease **UPDRS** motor scores vs Sham ITR AAV2 **ITR AAV2** BGH-AAV2 CAG del poly A del AAV2-GAD SHAM Change from Baseline in UPDRS Motor Scores Parkinson's Estimated patients worldwide economic burden The Glutamic Acid Decarboxylase (GAD) gene is delivered locally to the STN to -4 Large Patient population in need increase production of GABA only at the -6 Group Difference: p<0.03 of acceptable safe treatment specific site that is required for alleviating -8 PD related motor symptoms -10 Single tiny dose to STN the target of DBS -12 3 12 0 1 6 Thalamus Months *p < 0.05, **P < 0.01, ***p < 0.001 Well known routine intervention at most neurosurgery centers globally **FDG-PET shows treatment responsive** rewiring of the gangion to motor cortex Virus injected into No general anesthesia Subthalamic Nucleus AAV2-GAD-related bolic pattern (GADR Short time in surgery suite Substantia Nigra No in-dwelling hardware or associated safety concerns and off target side effects Phase 3 Ready Strong efficacy vs sham control

Small dose - very low CofG

Phase 3 Ready Disease Modifying in Patients no longer responding to Dopamine

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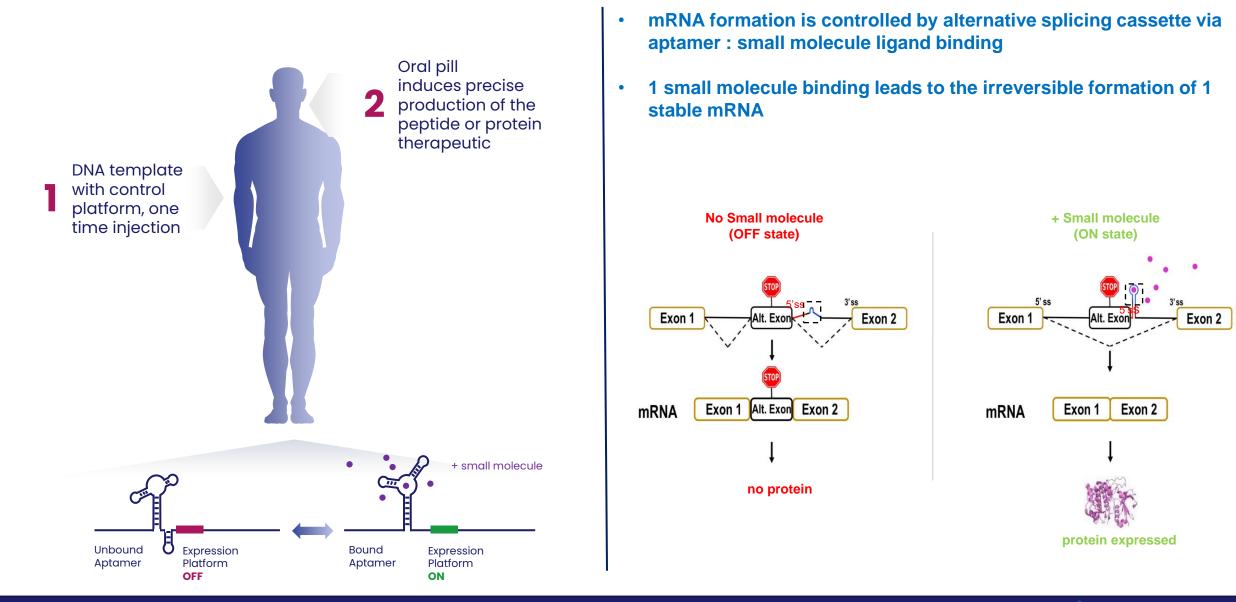
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Metabolic disease: leapfrogs current approaches addressing current problems:

- Efficacy and Tolerability
- Muscle Loss
- Fat regain
- Manufacturing barrier to entry
- Next generation Cell Therapy transforms:
- Exhaustion, Durability, Potency, Safety
- Manufacturing

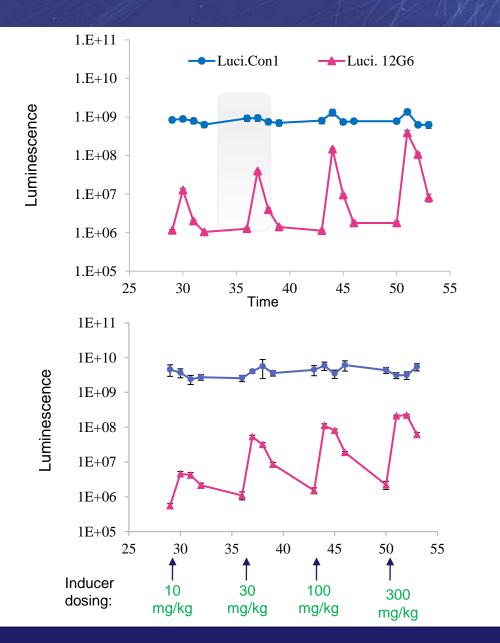
Riboswitch Platform: Allows Precise *in vivo* Dosing of Therapeutic Proteins and Peptides in a Physiological Timeframe using Oral Small Molecule Inducers

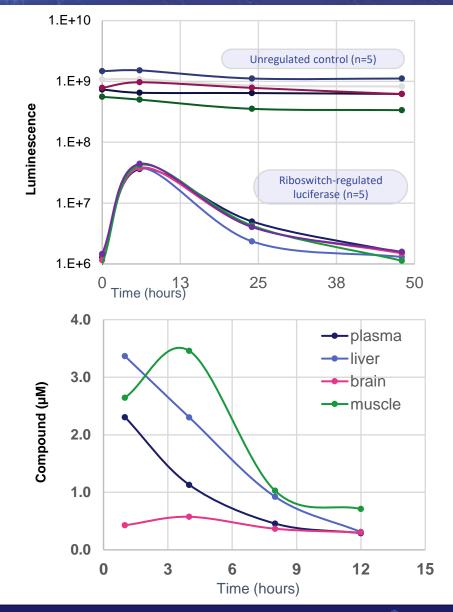


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Exquisite Accuracy of in vivo Dosing:







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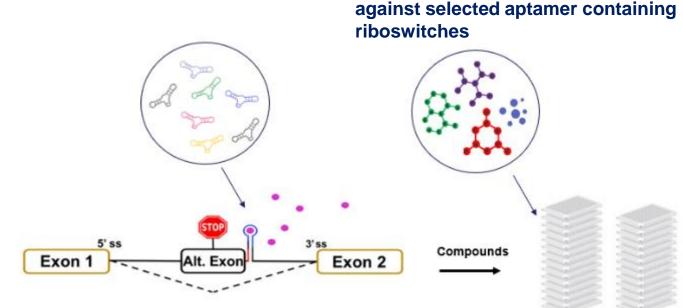
High Dynamic Range Regulation Cassette Allows Screening for RNA-Small Molecule Functional Binding in Mammalian Cells

Small molecule libraries screened



Large aptamer libraries screened expression cassette

- Randomized aptamer sequence
- · Site directed mutagenesis



Mammalian cell culture The gene is expressed **ONLY** when a small molecule binds an aptamer and drives hairpin formation and splicing

Assay readout: gene expression ON

Current status of small-molecule screening:

- Small libraries designed to improve potency and pharmaceutical properties
- ~350 Compounds have been screened
- 42 compounds demonstrated high potencyy; >30 compounds tested demonstrated good ADMET/PK properties
- 10 Compounds have gone or are going through rodent non-GLP tox studies.
- 2 compounds were identified to be BBB penetrant, with a brain:plasma ratio > 3 and desired ADMET/PK properties. additional BBB-penetrant compounds have been identified and are being evaluated.
- 5 compounds demonstrated high eye exposure levels when dosed orally
- 3 compounds are in pre-clinical development: one compound completed GLP tox studies, and two others will complete GLP tox in 2024. All showed good PK/safety profile in non-GLP rat, dog, and NHP studies.
- Most advanced candidate entering IND enabling studies
 in 2024

Riboswitch Unlocks the Potential of Genetic Medicine





Vectorized Biologics, Gene Replacement Safety and Consistency of any genetic medicines



CNS expression of biologics – across the BBB Gene Therapy delivered 1x within the BBB and activated using a small molecule that crosses the BBB



Cell Therapy

Controlled expression of CAR, cytokines, integrated 'kill switch'



Short-lived Therapeutic Hormones and Peptides

Precise activation of naturally short-lived peptides and hormones; combinations of natural peptides regulated together



Ocular expression of therapeutic proteins

Tight control of expression in the eye with eye drop formulation



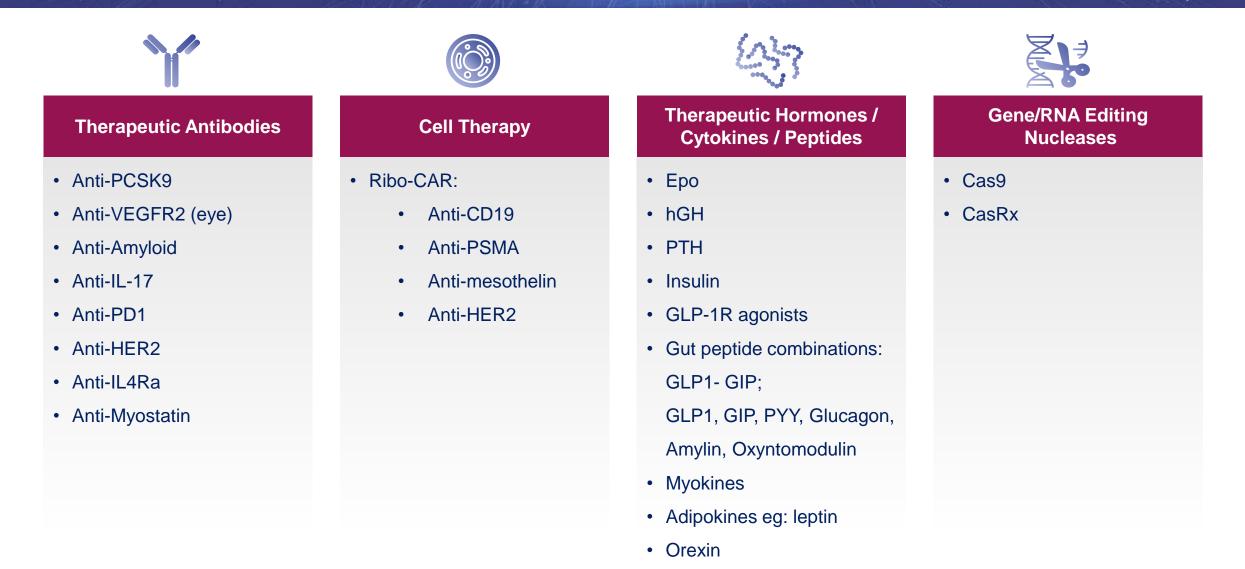
Tight regulation of Gene Editing DNA or RNA editing e.g., Cas9 and CasRx



Passive Vaccines with built-in capacity for Oral Small Molecule Driven Persistance

Riboswitch Drives *in vivo* Efficacy: Vectorized Antibodies, Peptides and Hormones, Receptors in Cell Therapy and DNA and RNA targeting Nucleases





Jurkat T cells TRAC locus knock in: Riboswitch-Regulated Chimeric Antigen **Receptor Induces CAR-T Activation in Response to Antigen**

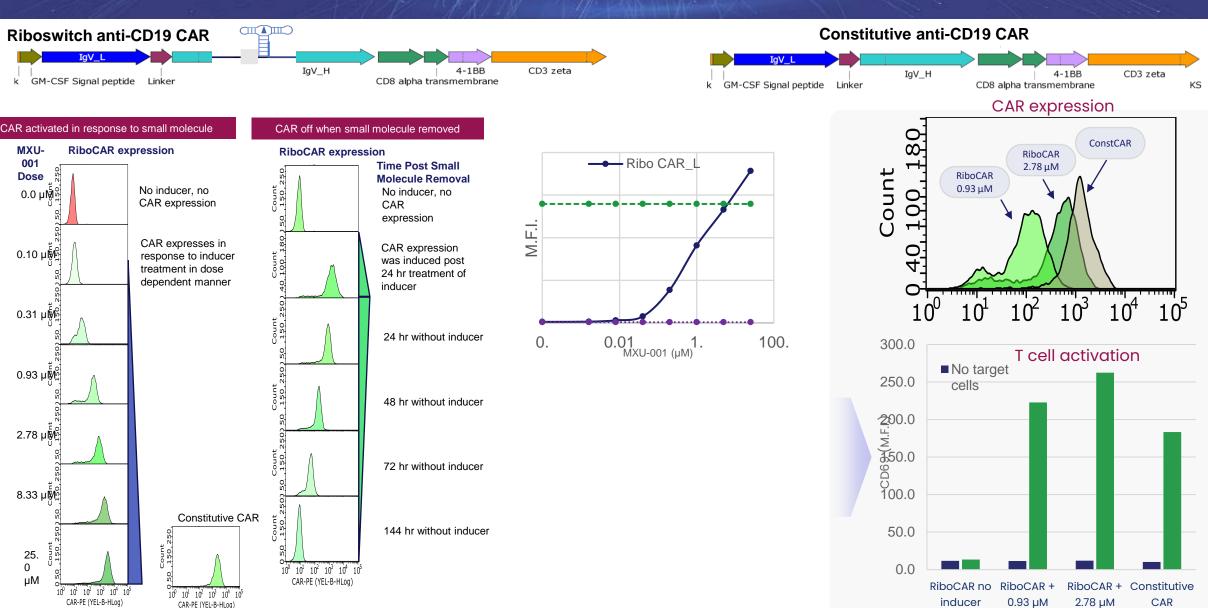
MXU-

001

Dose

25. 0

μM

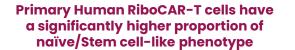


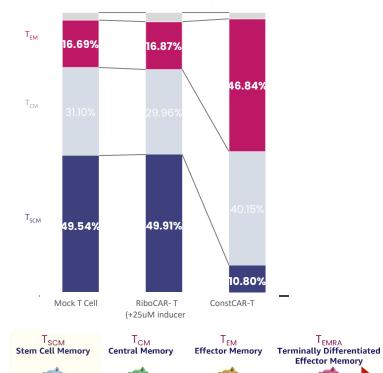
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Primary human T-cells: Riboswitch Controlled CAR-T Cells Are Enriched in Naïve/Stem Cell-Like Memory Phenotype, Display Reduced Exhaustion Markers, Increased Cytotoxicity and increased proliferation capacity







Less

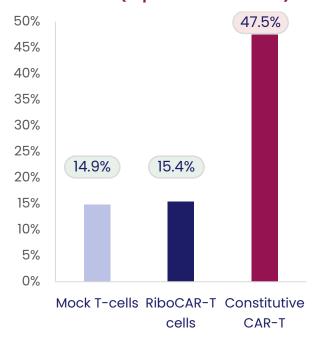
differentiated

O

More

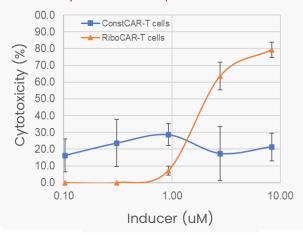
differentiated

Induced primary RiboCAR-T cells exhibit reduced exhaustion markers (CD39) vs. ConstCAR-T (25µM MXU-001 inducer)

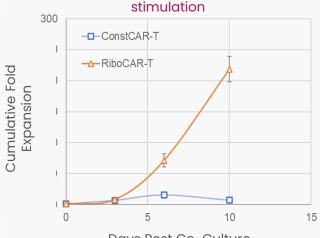


- Exhausted CAR-T cells exhibit decreased proliferative capacity, impaired anti-tumor activity, and attenuated persistence¹.
- RiboCAR T-cells exhibit significantly lower levels of the exhaustion marker, CD39, vs. constitutive CAR

RiboCAR-T cells exhibit superior cytotoxic activity in a dose-dependent manner



RiboCAR-T cells exhibit superior expansion capacity following repeated tumor cell

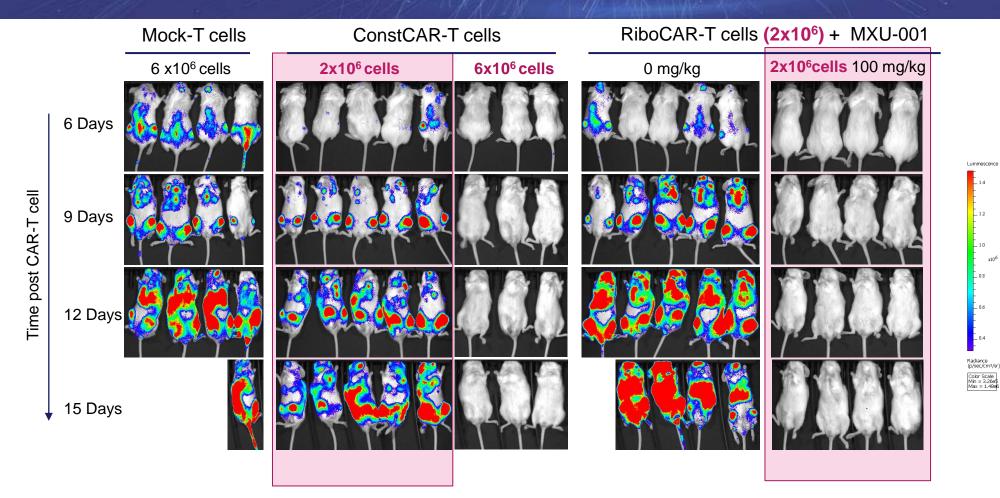


Days Post Co-Culture

MEIRAGT_x 16

Primary human T cells: *in vivo* Riboswitch-Controlled RiboCAR-T Cells Outperform ConstCAR-T Cells in anti-Tumor Activity

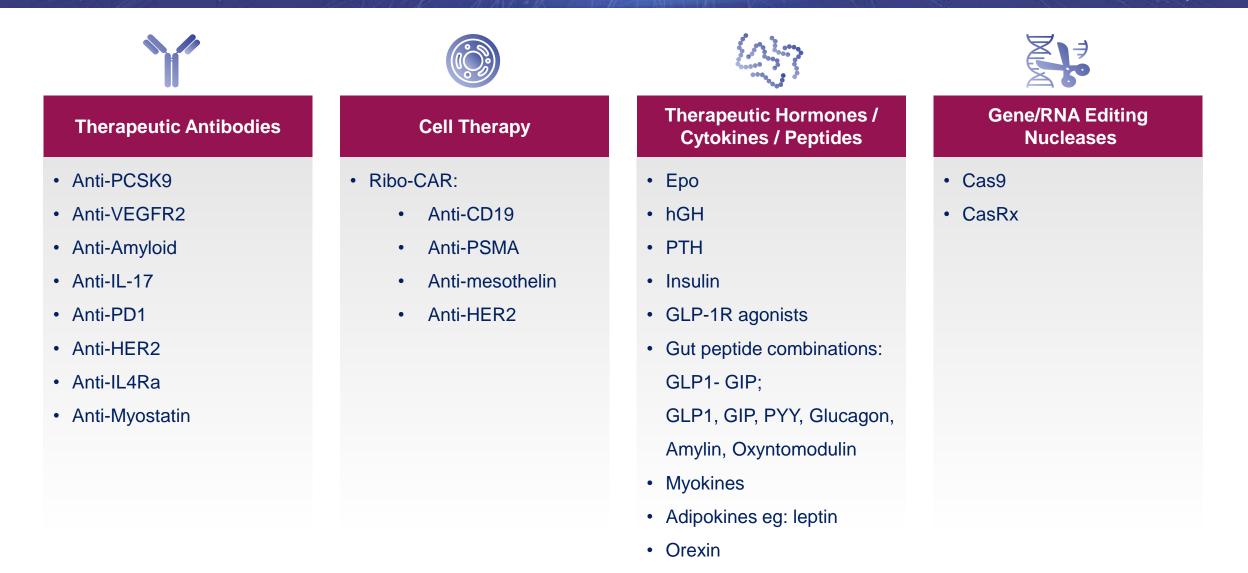




- 1x10⁶ Raji-ffLuc cells were injected into NSG mice.
- 4 days after Raji-ffLuc cell injection, the indicated CAR-T cells were injected into mice.
- Mice were dosed with the small molecule inducer with the indicated doses orally and daily starting the day before CAR-T cells injection.
- Tumor growth was monitored every 3 days using bioluminescence imaging.

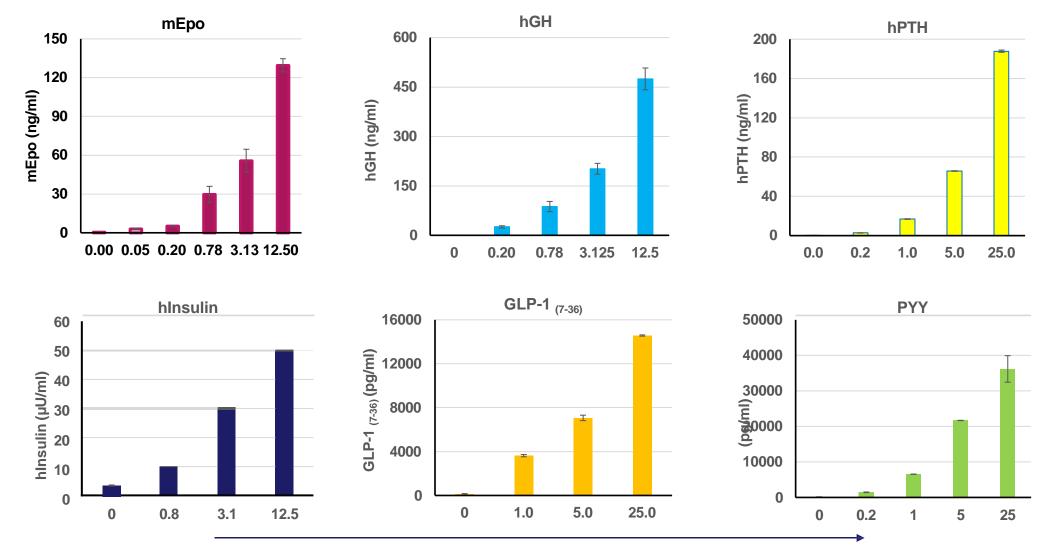
Riboswitch Drives *in vivo* Efficacy: Vectorized Antibodies, Peptides and Hormones, Receptors in Cell Therapy and DNA and RNA targeting Nucleases





Riboswitch Gene Control Cassette Provides Tight Control of Expression of Multiple Vectorized Peptides and Hormones via Oral Small Molecules in a Dose Dependent Manner

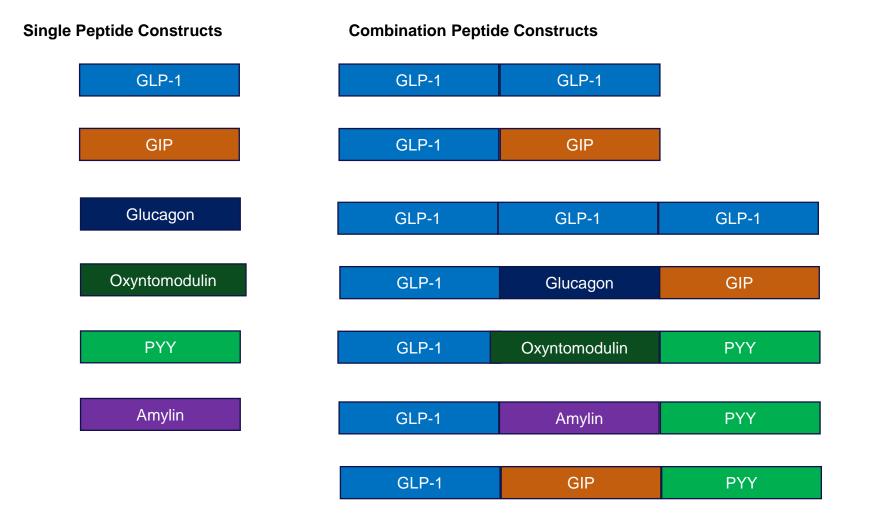




Small molecule inducer (µM)

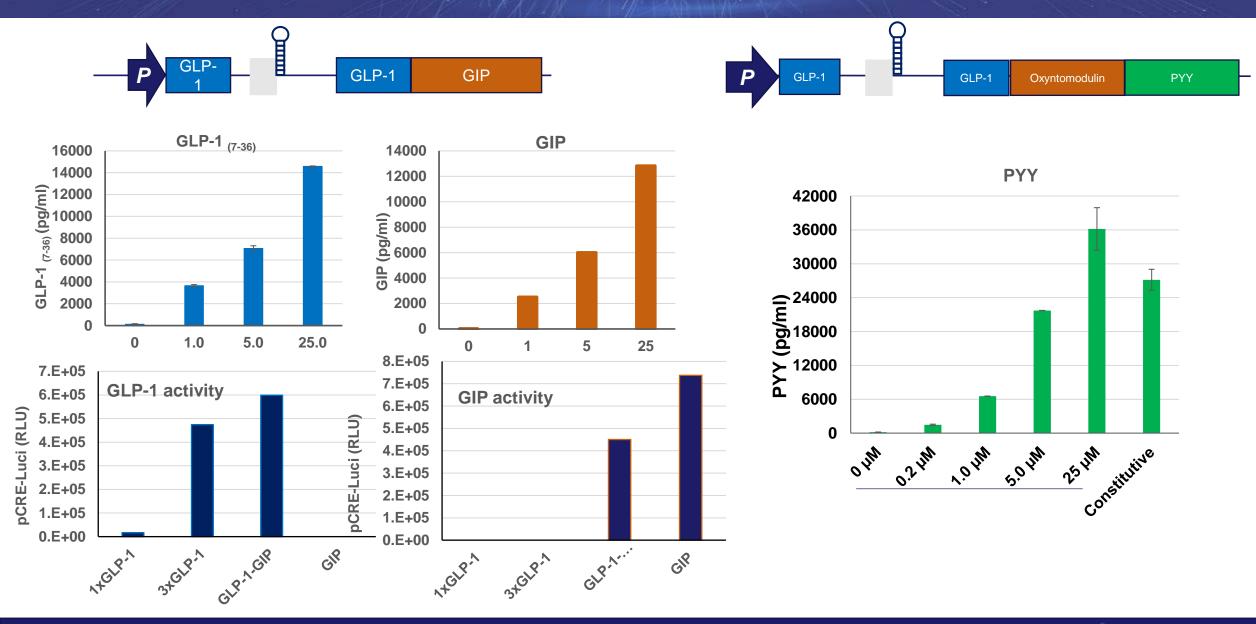
Gene Regulation Cassette Controls the Expression of Combinations of Gut Peptides, GLP-1 plus GIP and PYY





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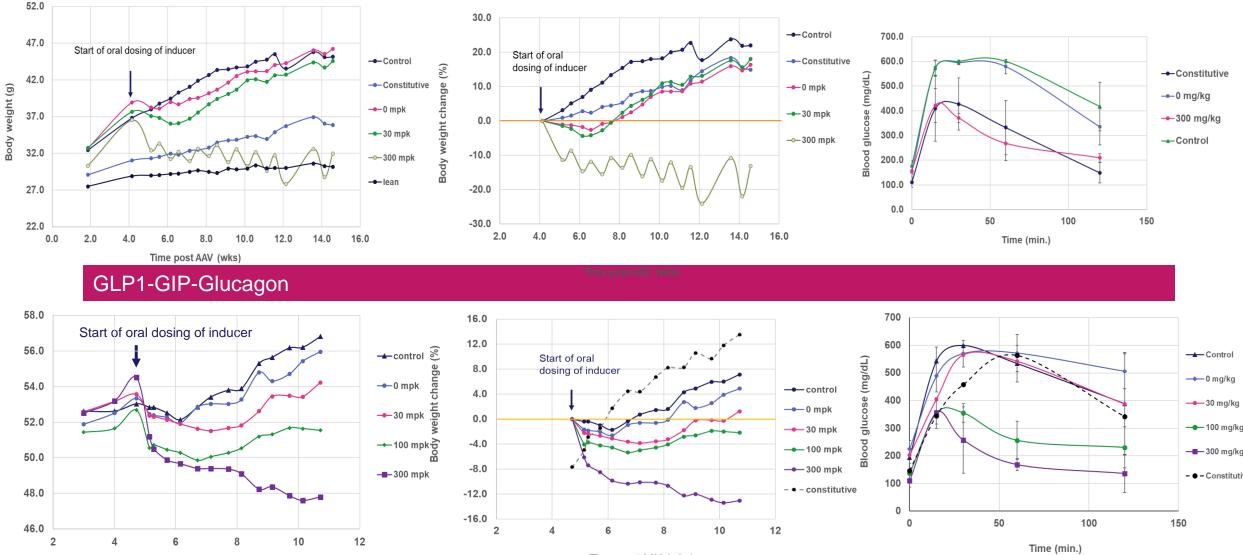


In vivo delivery of short-lived form of incretins in a more physiological time frame works much better than the same combinations active all the time

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GLP1-GIP

Body weight (g)



Time post AAV (wks)

Time post AAV (wks)

In vivo delivery of peptide therapeutics address many issues in current pharmacological treatment of metabolic disorders



Precise in vivo delivery of native short acting agonist peptides and hormones:

- Efficacy: any combination of native short acting peptides can be delivered with dose and timing precisely controlled by oral small molecule activator. Data demonstrates delivery short acting agonist peptides results in significantly improved efficacy than higher levels of constitutively active peptides.
- Tolerability: lower dose of periodically delivered short acting peptides have significantly better efficacy than higher doses of persistently active - which improves tolerability
- Muscle loss: delivery of native myokines that drive improved muscle strength, fat metabolism, mood etc. eg: key myokines
- Neurodegenerative and Psychiatric diseases of Aging / Obesity: deliver the myokines, peptides hormones that have CNS impact particularly in aging and as muscle mass declines
- Fat re-gain can deliver natural Leptin avoiding the disastrous consequences of immune response to injected metreleptin
- Manufacturing & COGS: the body makes the peptides, circumvents the peptide manufacturing barrier to entry
- Cell Engineering for in vivo delivery: control system for in vivo delivery works best for cell therapy the control cassette can be knocked into any transgene within the engineered cell rendering that gene precisely controllable by oral small molecule ligand – in this way the production of biologic therapeutics by the therapeutic engineered cell can be precisely controlled in time and does by the oral drug

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