
RXBIO

Wellness of your Companion animal

Metabolic disease breakthrough

I. Company Profile

Mission

- Development of diabetes and obesity treatments for companion animals

Details

Corporate name	RXBIO, Inc.
CEO	Myung-Suk Song
Establishment date	October 25th, 2022
Business domain	Veterinary drug development
Location	3F, Startup Campus #3, 20, Pangyo-ro 289Beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, Korea 13488

FOUNDER, CEO
Myungsuk Song

✔ Education

- Yonsei University BA and Master's Degree in Public Administration

✔ Experience

- 96. 07 ~ 16. 11: KEB Hana Bank
- 16. 12 ~ 20. 03: VP of Sillajen
- 21. 03 ~ 22. 12: CEO of Nexturn Bio
- 21. 06 ~ 24.12: Board member of Rosvivo
- 22. 11 ~ Present: CEO of RXBIO
- 25. 01 ~ Present: CEO of Rosvivo

II. The Importance of miRNA

The New York Times

Discovery in Tiny Worm Leads to Nobel Prize in Physiology or Medicine for 2 Scientists

The prize was awarded to Victor Ambros and Gary Ruvkun for their discovery of microRNA, which helps determine how cells develop and function.

Victor Ambros and Gary Ruvkun were awarded the Nobel Prize in Physiology or Medicine on Monday for the discovery of microRNA, a tiny class of RNA molecules that play a crucial role in determining how organisms mature and function — and how they sometimes malfunction.

Working with curious, millimeter-size roundworms of the species Caenorhabditis elegans, the two laureates' discovery revealed a new principle of gene regulation that is crucial for the development and health of multicellular organisms, including humans, Nobel Prize officials said.

The Washington Post
Democracy Dies in Darkness

Nobel Prize in physiology or medicine awarded for discovery of microRNA

American scientists Victor Ambros and Gary Ruvkun win the 2024 Nobel Prize.

Updated October 7, 2024

American scientists Victor Ambros and Gary Ruvkun won the 2024 Nobel Prize in physiology or medicine Monday for the discovery of microRNAs, a class of tiny molecules that have been connected to heart disease, a wide variety of cancers and viral diseases.

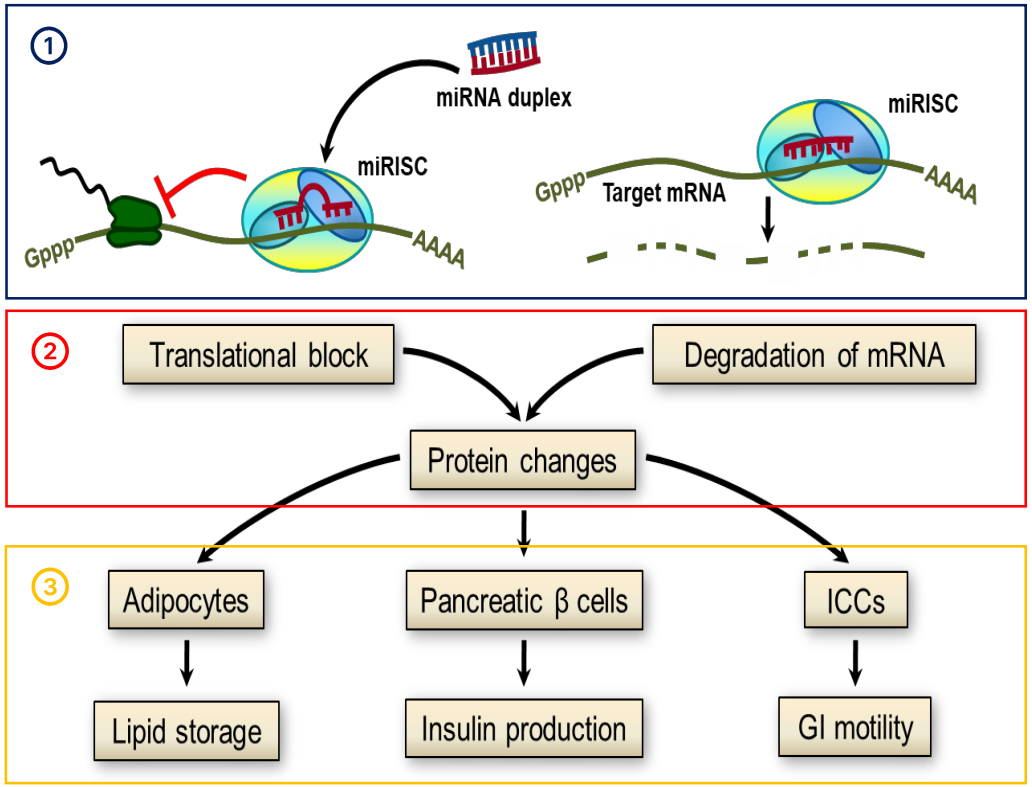
Mutations in microRNAs, just like those in genes, can lead to diseases, and fixing or replacing mutant microRNAs may prove crucial to developing treatments.

Ambros and Ruvkun figured out that these small molecules have the power to reduce or block production of proteins, responsible for virtually every human action from breathing to thinking.

Not to be confused with messenger RNA — which acts as a "middleman" in the process of translating genetic material into proteins — microRNAs add a crucial, previously unrecognized layer to the process. MicroRNAs can bind on to the messenger RNA and are able to help cells regulate the kinds and amounts of proteins that are made.

III. Mechanism of miRNA

✔ **Identified anti-diabetic and anti-obesity miRNAs that act on pancreatic cells, fat cells, and gastrointestinal cells to reverse the pathology of type 2 diabetes.**



① The miRNAs inhibit protein expression by binding to messenger RNAs

⇩

② Selectively blocks the protein expression of specific genes, thereby regulating the expression process

⇩

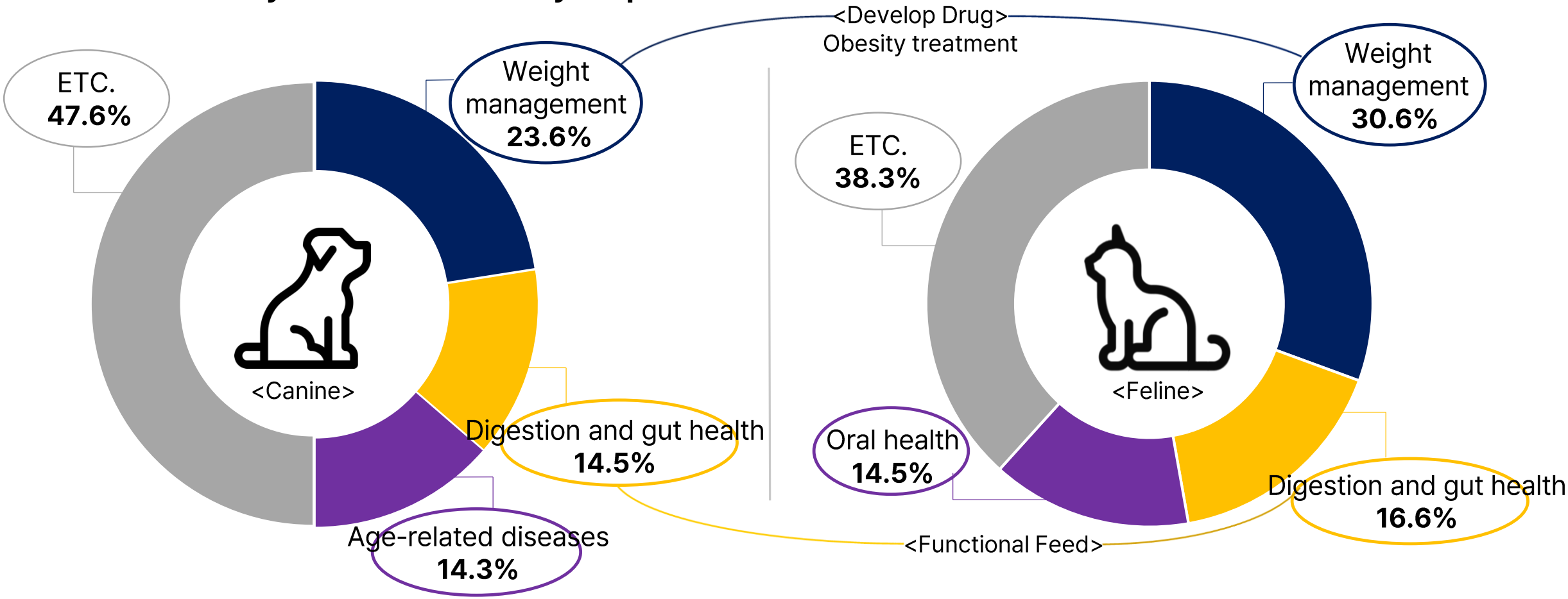
Regulates fat accumulation (lipid storage) in adipocytes
③ Insulin production in pancreatic cells
Mobility in the GI

⇓

<miRNA-10a, b>
Inhibition of transcription factor protein synthesis that control the mechanisms
⇒ **Restores cellular function**

IV. Development Motivation for Diabetes/Obesity Treatments

<What concerns you the most about your pet's health?>



Survey on current status of pets and health-related perceptions(2019)

V. Experiments Conducted for Drug Development

[Rosvivo, USA]

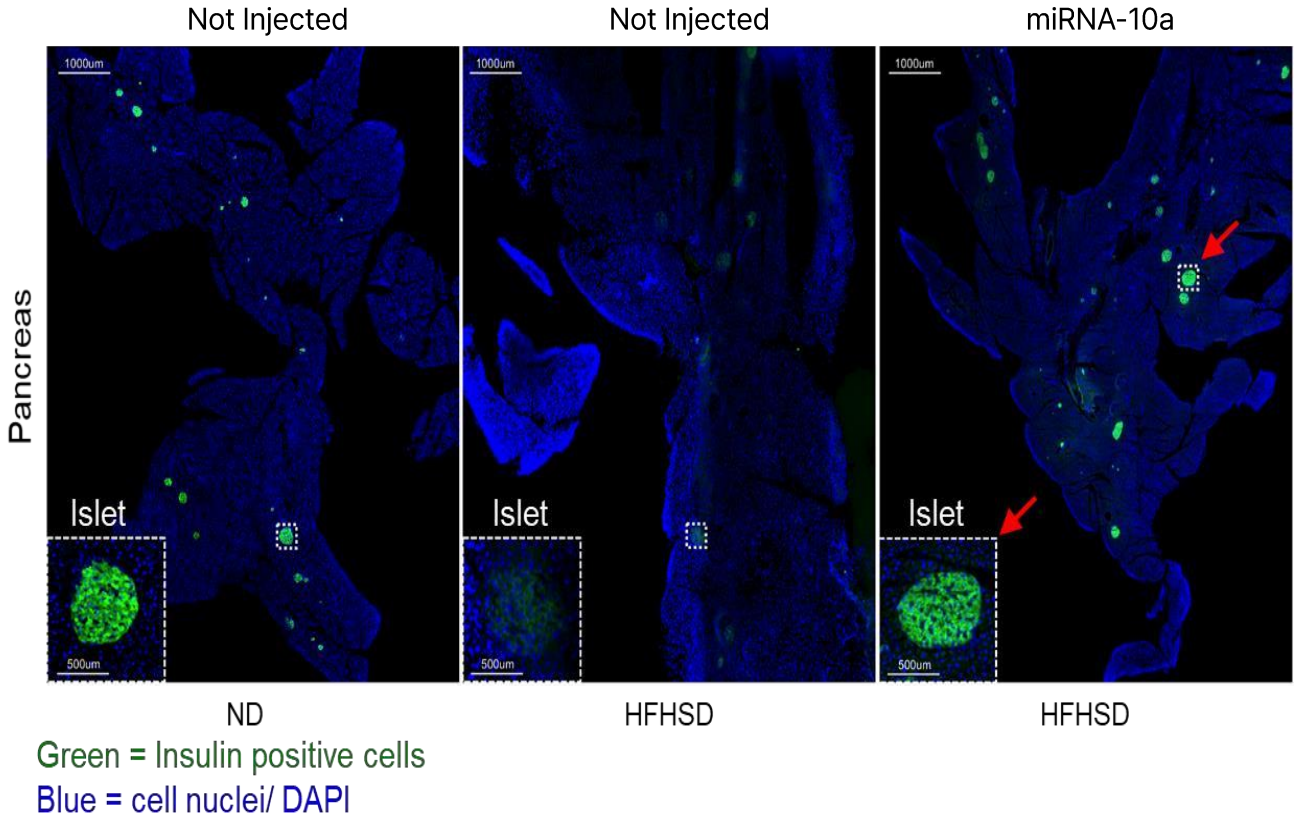
1. **Diabetes Mouse Data**
2. **Obesity Mouse Data**

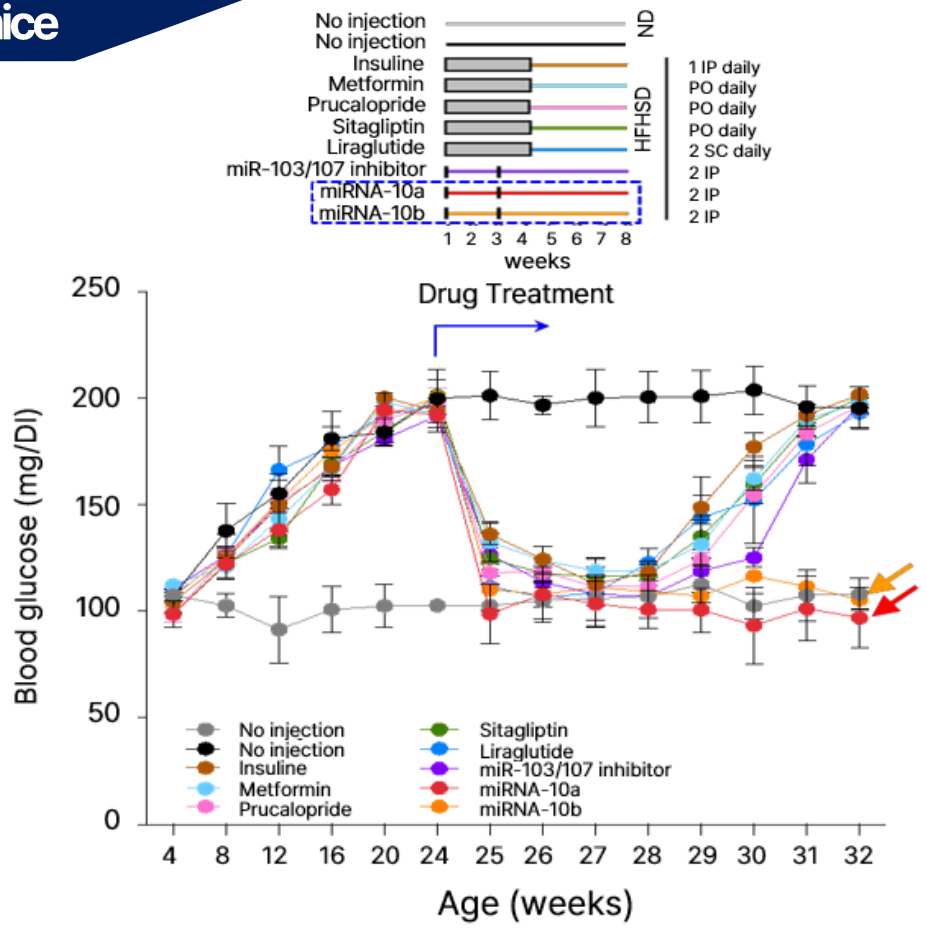
[RXBIO, S.Korea]

3. **Diabetes Rat Data**
4. **Obesity Feline Data**

V-1. Diabetes Mouse Data

Effect of miRNA-10a on pancreatic β-cell insulin production of diabetic mice

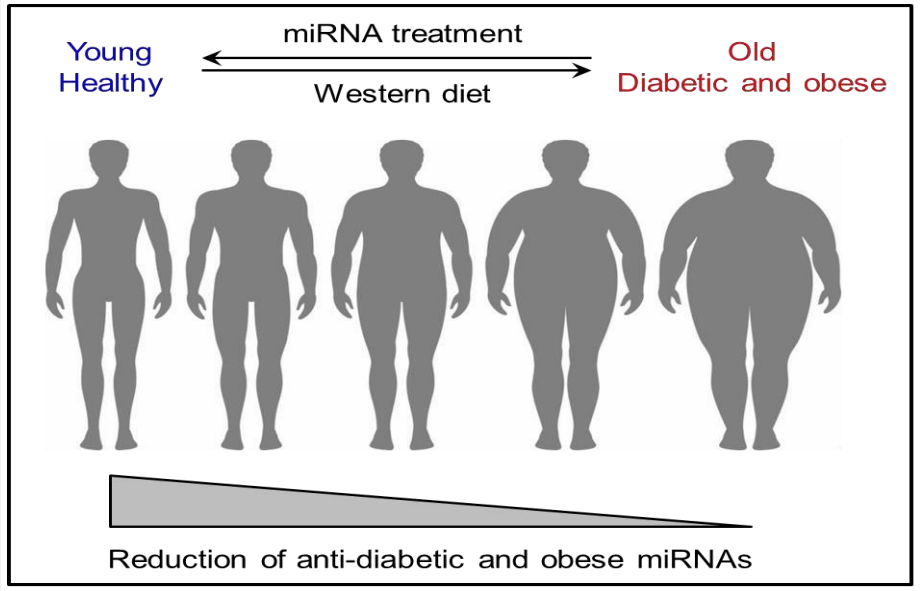


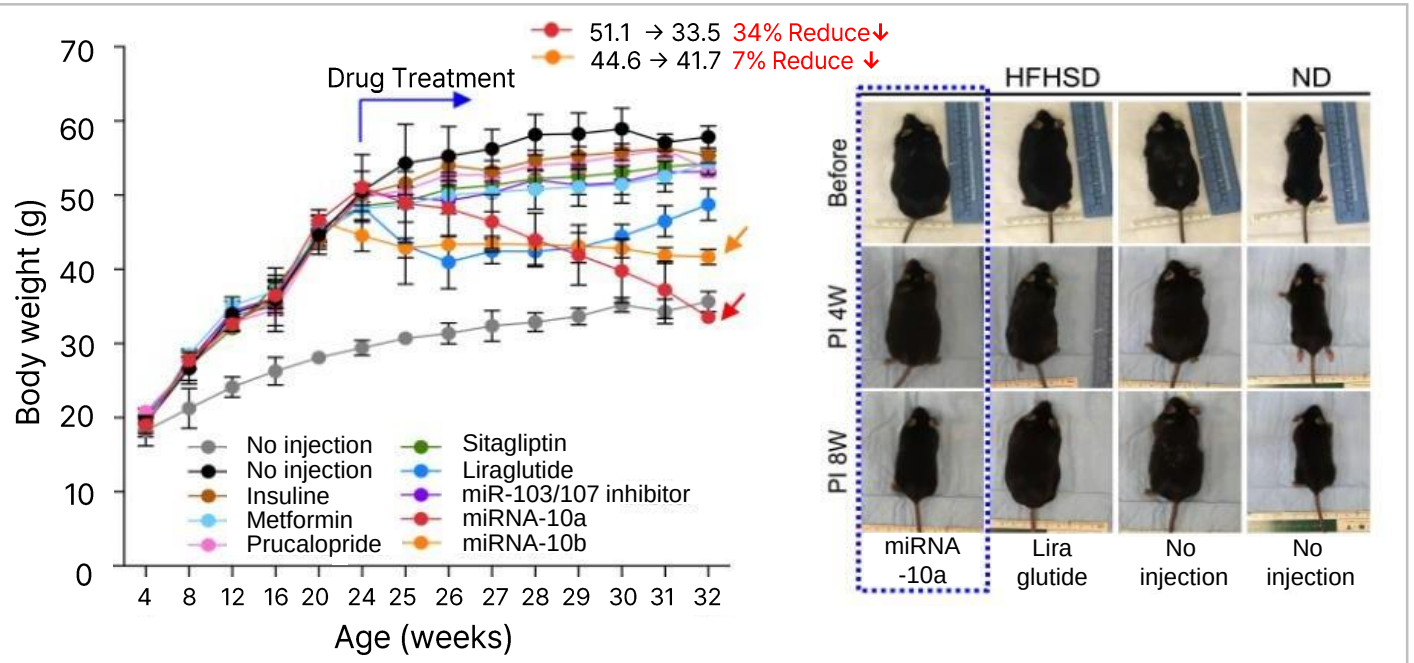


- Regeneration of β-cells (green fluorescent regions) and increased insulin production observed in mice with high-fat-high-sugar diet (HFHSD) induced diabetes after miRNA-10a injection

V-2. Obesity Mouse Data

miRNA-10a vs GLP-1 Receptor Agonist

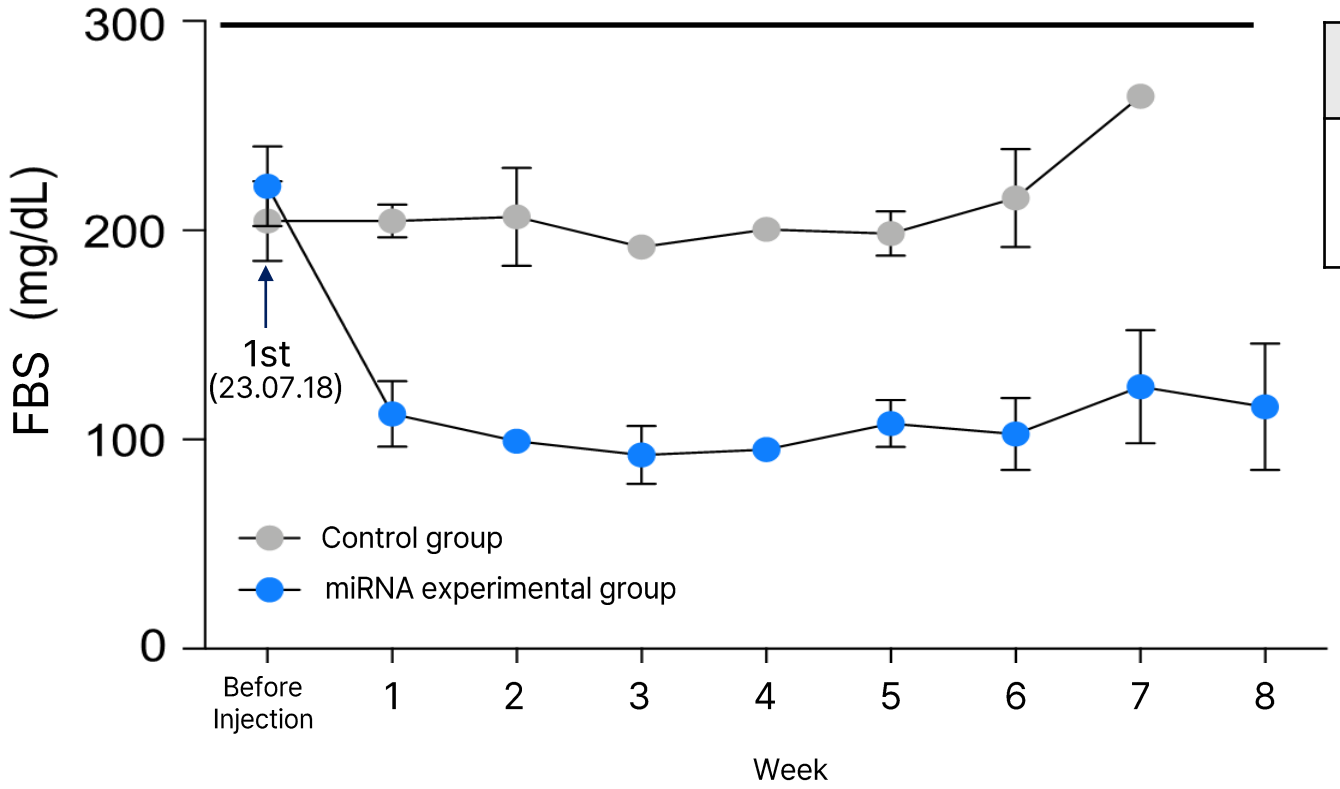




	miRNA (RosVivo 社)	Saxenda (Novo Nordisk 社)	Wegovy (Novo Nordisk 社)	Mounjaro (Lilly 社)
Main component	miRNA-10a	Liraglutide	Semaglutide	Tirzepatide
Administration frequency	Once (3 months)	Once every day (56 weeks)	Once every week (68 weeks)	Once every week (72 weeks)
Weight loss	≤40%	Average 8%	Average 15%	Average 22.5%

V-3. Diabetes Rat Data

Institution: CORESTEMCHEMON (CRO)

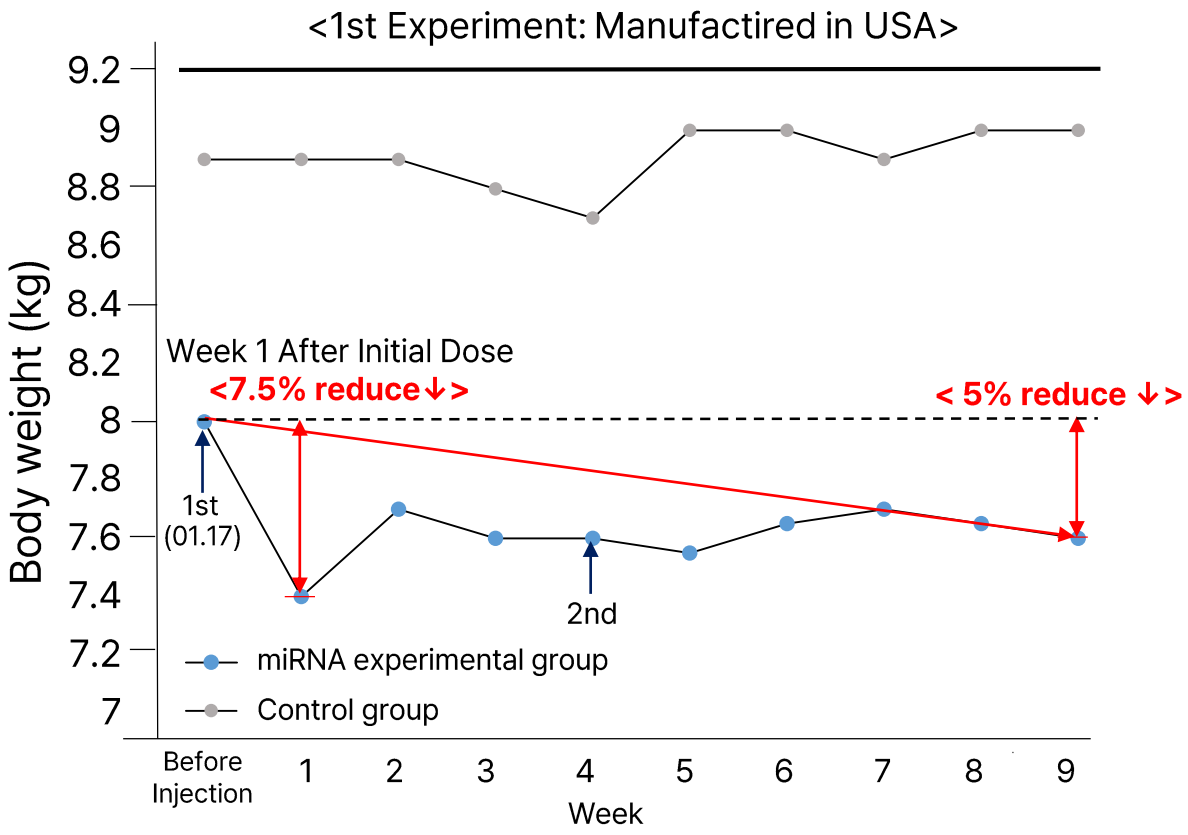


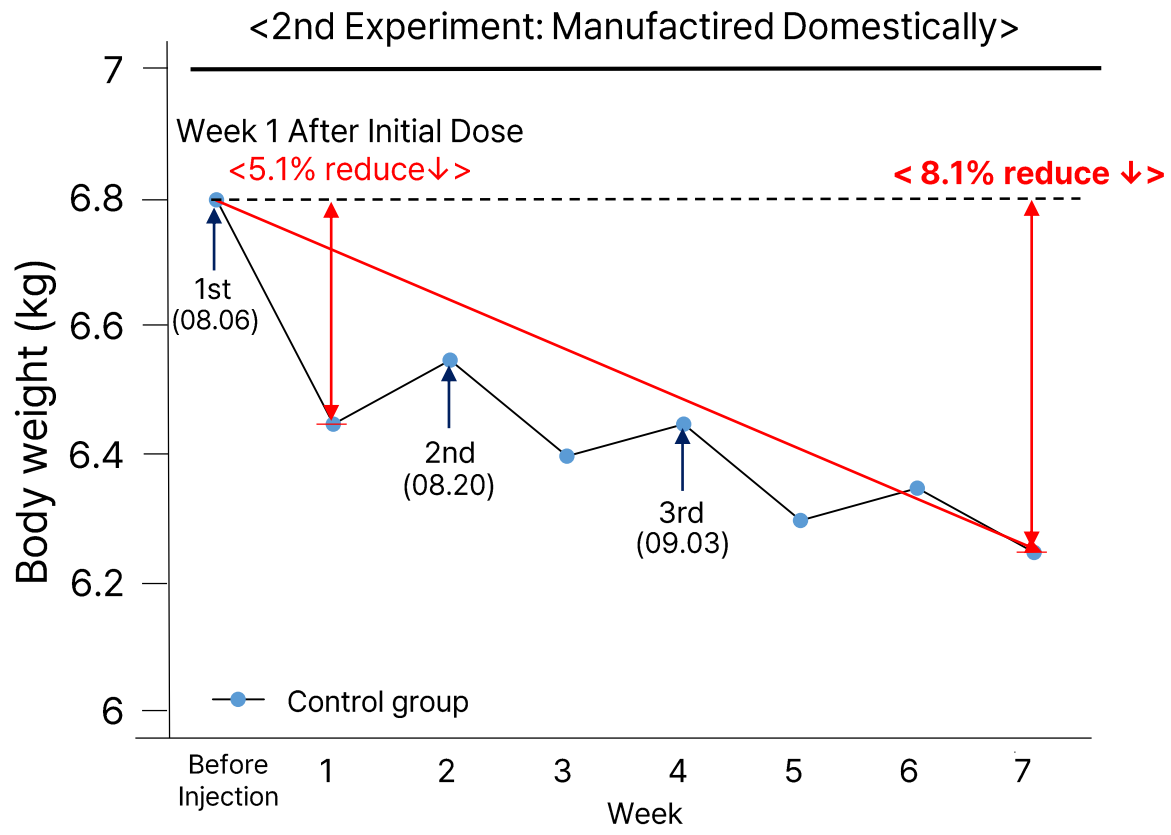
Species	Injection period	Route of injection	Period(week)
RAT	1time/8weeks	IV	8

- Total 5 (Control group: 2, miRNA experimental group: 3)
- Experiment period: 2023. 07. 18 ~ 2023. 09. 19
- Experiment subject:
  RAT with blood glucose level over 200 mg/dL after STZ induction
- Dosage administered: 250μg/kg
- Maintain blood glucose at an average of about 110mg/dL for 2months(8weeks) after one administration of miRNA

V-4. Obesity Feline Data

Institution: Huvet (CRO)





VI. Drug Comparison

	RSVI-301/302	GLP-1 Receptor Agonist
Food consumed by mice	Slight decrease (1~2%)	Drastic decrease (~50%)
Efficacy	Effective for 6 months post-administration	Effective briefly post-administration
Blood sugar levels	Significant decrease (4~5% in A1C)	Slight decrease (1.2% in A1C trial)
Pancreatic β-cell	Fundamental functions recovered through β-cell regeneration	Impaired functions due to excessive insulin production
Insulin levels	No change	Increased
Insulin resistance	Recovered functions observed in adipose and muscle tissue	Recovered functions observed only in liver cells
Obesity	Remedied through direct decrease in abdominal adipose cells	Remedied through suppressing appetite and blood sugar levels
Weight loss	Up to ~40% lost	Average 10~20% lost

VII. Therapeutics Development Roadmap

RXBIO

VIII. Scientific Advisory Board

<Member of the Rosvivo Scientific Advisory Board >

Takara Leah Stanley, MD

- BA, Social Studies, Harvard University, Cambridge, MA
- MD, Medicine, Harvard Medical School, Boston, MA
- PhD Candidate, Epidemiology, Boston University School of Public Health
- Associate Professor of Pediatrics, Harvard Medical School
- Associate Pediatrician, Massachusetts General Hospital & Program Director, Pediatric Endocrine Fellowship Program

HARVARD MEDICAL SCHOOL

Linda Nguyen, MD

- BS, Biomedical Science, University of California Riverside
- MD, University of California, Los Angeles School of Medicine
- Director, GI Motility and Neurogastroenterology, Stanford Gastroenterology and Digestive Health Clinic
- Clinic Chief, Digestive Health Center
- Clinical Professor, Gastroenterology & Hepatology, Stanford Gastroenterology and Digestive Health Clinic

Stanford HEALTH CARE

Arthur Beyder, MD

- BS, Mathematics & Biophysics, University at Buffalo
- MD & PhD, School of Medicine and Biomedical Sciences, University at Buffalo
- Residency, Internal Medicine, Mayo School of Graduate Medical Education
- Fellowship, Gastroenterology, Mayo School of Graduate Medical Education

MAYO CLINIC HEALTH SYSTEM

Fadi Hendee, MD

- BS, University of Baghdad College of Medicine
- MD, Indiana University School of Medicine
- Associate Professor, University of Nevada, Reno School of Medicine
- Clinical Professor, Endocrinology, Kaiser Permanente South Bay Medical Center

KAISER PERMANENTE

Kenton M. Sanders, PhD

- BS, Chemistry, University of California, , Santa Cruz
- PhD, Physiology, University of California, Los Angeles
- Professor, Physiology & Cell Biology, University of Nevada School of Medicine
- Chair, Physiology & Cell Biology, University of Nevada School of Medicine

University of Nevada, Reno School of Medicine

IX. Related Articles

머니투데이
https://news.mt.co.kr › mtview

That difficult cat diet… ‘Animal version of Wegobi’ in 7 weeks...

2025. 1. 8. — **Animal version of Wegobi** 'countdown... Obese cat loses 8.1% weight in 7 weeks Song Myeong-seok, CEO of RX Bio, "Application for new drug approval in the second half of 2027".

https://news.mt.co.kr/mtview.php?no=2025010812333548294

머니투데이
https://news.mt.co.kr › mtview

Can my fat cat escape obesity?… Results of a 9-week experiment on ‘Animal version of Wegobi’

2024. 7. 15. — When dogs and cats are over 10 years old, they have a 50% chance of developing obesity and diabetes. The substance that RX Bio uses for new drug development is 'miRNA-10a' (obes…

https://news.mt.co.kr/mtview.php?no=2024071208384048647

매일경제
https://www.mk.co.kr › news › business

Will a companion animal Wegobi appear? Domestic trials of treatment for dog obesity and diabetes...

2023. 9. 25. — RX Bio has joined hands with Rosvivo Therapeutics (hereinafter Rosvivo), a subsidiary of NextenBio, to develop diabetes and obesity treatments for animals.

https://www.mk.co.kr/news/business/10836013

한국경제
https://www.hankyung.com › tag

RX Bio “We will release the world’s first diabetes cure for animals”

RX Bio “We will release the world’s first diabetes cure for animals” . 2023.02.15 07:47. RX Bio “We will release the world’s first diabetes cure for animals” · Kiwoom Securities “Rosvivo, a rookie in the…

https://www.hankyung.com/article/202302132913i

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THANK YOU

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