

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of earliest event Reported): October 11, 2023

**Scholar Rock Holding Corporation**  
(Exact Name of Registrant as Specified in Charter)

**Delaware**  
(State or Other Jurisdiction of  
Incorporation)

**001-38501**  
(Commission File Number)

**82-3750435**  
(I.R.S. Employer Identification  
Number)

**301 Binney Street, 3rd Floor, Cambridge, MA 02142**  
(Address of Principal Executive Offices) (Zip Code)

**(857) 259-3860**  
(Registrant's telephone number, including area code)

(Former name or former address, if changed since last report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)  
 Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)  
 Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))  
 Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value \$0.001 per share	SRRK	The Nasdaq Global Select Market

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (17 CFR §230.405) or Rule 12b-2 of the Securities Exchange Act of 1934 (17 CFR §240.12b-2). Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

**Item 7.01.****Regulation FD Disclosure.**

On October 11, 2023, Scholar Rock Holding Corporation (the "Company") issued a press release announcing plans to expand into cardiometabolic disorders and advance its anti-myostatin program into cardiometabolic disorders and SRK-439, a novel investigational myostatin inhibitor, for the treatment of obesity towards the filing of an Investigational New Drug Application in 2025. A copy of the press release is attached hereto as Exhibit 99.1.

The information in this Item 7.01 of Form 8-K, including the accompanying Exhibit 99.1, shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise subject to the liability of such section, nor shall such information be deemed incorporated by reference in any filing under the Securities Act of 1933 or the Exchange Act, regardless of the general incorporation language of such filing, except as shall be expressly set forth by specific reference in such filing.

**Item 8.01. Other Events.**

The Company has also made available a slide presentation relating to its cardiometabolic disorders program, a copy of which is attached as Exhibit 99.2 to this Current Report on Form 8-K and is incorporated herein by reference. The Company undertakes no obligation to update, supplement or amend the materials attached hereto as Exhibit 99.2.

**Item 9.01. Financial Statements and Exhibits.**

## (d) Exhibits

Exhibit No.	Description
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<a href="#">99.1</a>	Press Release issued by the Company on October 11, 2023, furnished herewith.
<a href="#">99.2</a>	Presentation Slide Deck
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

**SIGNATURE**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

**Scholar Rock Holding Corporation**

Date: October 11, 2023

By: /s/ Junlin Ho  
Junlin Ho  
General Counsel and Corporate Secretary

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**SCHOLAR ROCK TO ADVANCE ANTIMYOSTATIN PROGRAM TO DEVELOP NOVEL THERAPIES FOR CARDIOMETABOLIC DISORDERS**

- *Company plans to expand into cardiometabolic disorders, leveraging its experience in myostatin inhibition*
- *Preclinical data support advancing SRK-439, a novel investigational myostatin inhibitor for the treatment of cardiometabolic disorders, with an initial focus on obesity, towards an IND in 2025*
- *To inform the development of SRK-439, Company plans to initiate a Phase 2 proof-of-concept trial of apitegromab in obesity in 2024 with data readout expected in mid-2025*
- *Data from pivotal Phase 3 SAPPHIRE trial in SMA expected in Q4 2024*

CAMBRIDGE, Mass., October 11, 2023 (BUSINESS WIRE) – Scholar Rock (NASDAQ: SRRK), a Phase 3, clinical-stage biopharmaceutical company focused on the treatment of serious diseases in which protein growth factors play a fundamental role, today announced it plans to advance SRK-439, a novel investigational myostatin inhibitor for the treatment of obesity towards an investigational new drug application (IND) in 2025. As part of the Company's strategy to advance the development of SRK-439, it intends to initiate a Phase 2 proof-of-concept trial with apitegromab in combination with GLP-1 receptor agonist (GLP-1 RA) in 2024. Data from the clinical trial are expected in mid-2025 and will be used to inform further clinical development of SRK-439.

"As a long-standing leader in targeting myostatin with a highly selective antibody platform, we are excited to advance our cardiometabolic program. We have discovered multiple, highly selective myostatin inhibitors and see potential with SRK-439 to retain lean muscle mass, a concern that is commonly associated with weight loss strategies, including treatments currently on the market for obesity, a common, serious and costly public health issue affecting adults and children globally. As apitegromab has shown to date in spinal muscular atrophy (SMA), muscle-targeted therapies that are well tolerated have the potential to represent a new class of treatments across a wide range of diseases," said Jay Backstrom, M.D., M.P.H., President and Chief Executive Officer of Scholar Rock. "While we continue to expand the development of our pipeline, our top priority remains advancing the apitegromab program in SMA. We recently completed full enrollment of the pivotal Phase 3 SAPPHIRE trial of apitegromab in SMA, for which we expect to read out topline data in Q4 2024."

**Cardiometabolic program**

Muscle plays a key role in metabolic functions and energy homeostasis. Leveraging proven expertise in anti-myostatin and its effect on increasing muscle mass, the Company has been developing myostatin-selective inhibitors to address cardiometabolic disorders, including obesity. Scholar Rock's platform has generated multiple antibody candidates, including apitegromab, that selectively target pro- and latent forms of myostatin. The Company believes the selectivity of these antibody candidates enables a favorable risk-benefit profile for patients with cardiometabolic disorders.

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SRK-439, a novel anti-myostatin antibody candidate developed by Scholar Rock, has attractive properties, including high *in vitro* affinity for pro- and latent myostatin, maintenance of myostatin specificity (i.e., no GDF11 or Activin-A binding), and robust *in vivo* efficacy in preclinical models. Studies in diet-induced obese mice showed that SRK-439 in combination with GLP-1 receptor agonist (GLP-1 RA) achieved:

- Dose-dependent reversal of lean mass loss during GLP-1-RA mediated weight loss; and
- Enhancement of fat mass loss mediated by GLP-1 RA treatment.

"Cardiometabolic disorders are creating growing global medical challenges and contribute to the development of serious health conditions, such as cardiovascular disease, Type 2 diabetes, and certain cancers," said Mo Qatanani, Ph.D., Senior Vice President and Head of Research. "Leveraging our unique scientific platform, Scholar Rock has developed SRK-439 with a proposed mechanism of action that aims to safely maintain muscle mass, while enhancing body fat loss, thereby potentially enhancing metabolic health and potentially offering a unique opportunity to address a high unmet need in treating metabolic conditions, including obesity. We look forward to presenting preclinical data on this new asset from our pipeline at upcoming scientific conferences."

#### About Scholar Rock

Scholar Rock is a clinical-stage biopharmaceutical company focused on the discovery and development of innovative medicines for the treatment of serious diseases in which signaling by protein growth factors plays a fundamental role. Scholar Rock is creating a pipeline of novel product candidates with the potential to transform the lives of patients suffering from a wide range of serious diseases, including neuromuscular disorders, cancer, and fibrosis. Scholar Rock's approach to targeting the molecular mechanisms of growth factor activation enabled it to develop a proprietary platform for the discovery and development of monoclonal antibodies that locally and selectively target these signaling proteins at the cellular level. By developing product candidates that act in the disease microenvironment, Scholar Rock intends to avoid the historical challenges associated with inhibiting growth factors for therapeutic effect. Scholar Rock believes its focus on biologically validated growth factors may facilitate a more efficient development path.

Scholar Rock® is a registered trademark of Scholar Rock, Inc.

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#### **Forward-Looking Statements**

This press release contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, including, but not limited to, statements regarding Scholar Rock's future expectations, plans and prospects, including without limitation, any development plans, strategy and progress for apitegromab and SRK-439, the timing of its clinical trials, anticipated clinical data, and therapeutic benefits for apitegromab and SRK-439, and other product candidates and indication selection and development timing, the ability of any product candidate to perform in humans in a manner consistent with earlier nonclinical, preclinical or clinical trial data, and the potential of apitegromab, SRK-439 and its other product candidates and its proprietary platform. The use of words such as "may," "might," "could," "will," "should," "expect," "plan," "anticipate," "believe," "estimate," "project," "intend," "future," "potential," or "continue," and other similar expressions are intended to identify such forward-looking statements. All such forward-looking statements are based on management's current expectations of future events and are subject to a number of risks and uncertainties that could cause actual results to differ materially and adversely from those set forth in or implied by such forward-looking statements. These risks and uncertainties include, without limitation, expectations regarding the therapeutic potential of SRK-439 for the treatment of obesity, planned timing for an IND submission for SRK-439, that preclinical and clinical data, including the results from the Phase 2 clinical trial of apitegromab and preclinical studies of SRK-439, are not predictive of, may be inconsistent with, or more favorable than, data generated from future clinical trials of the same product candidates, including, without limitation, the Phase 3 clinical trial of apitegromab in SMA and preclinical studies of SRK-439, Scholar Rock's ability to provide the financial support, resources and expertise necessary to identify and develop product candidates on the expected timeline, the data generated from Scholar Rock's SAPPHIRE Phase 3 clinical trial, information provided or decisions made by regulatory authorities, Scholar Rock's dependence on third parties for development and manufacture of product candidates including, without limitation, to supply any clinical trials, as well as those risks more fully discussed in the section entitled "Risk Factors" in Scholar Rock's Quarterly Report on Form 10-Q for the quarter ended June 30, 2023, as well as discussions of potential risks, uncertainties, and other important factors in Scholar Rock's subsequent filings with the Securities and Exchange Commission. Any forward-looking statements represent Scholar Rock's views only as of today and should not be relied upon as representing its views as of any subsequent date. All information in this press release is as of the date of the release, and Scholar Rock undertakes no duty to update this information unless required by law.

#### **Scholar Rock:**

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## Introduction of Scholar Rock's Cardiometabolic Disorders Program

Optimizing weight loss by preserving and increasing muscle mass with a highly selective myostatin inhibitor

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# Forward-Looking Statements

Various statements in this presentation concerning the future expectations, plans and prospects of Scholar Rock, Inc. ("Scholar Rock"), including without limitation, Scholar Rock's strategy, its product candidate selection and development timing, including timing for the initiation of and reporting results from its preclinical and clinical trials for SRK-439, other product candidates and indication selection and development timing, the ability of any product candidate to perform in humans in a manner consistent with earlier non-clinical trial data, and the potential of its product candidates and proprietary platform. The use of words such as "may," "could," "might," "will," "should," "expect," "plan," "anticipate," "intend," "future," "potential," or "continue," and other similar expressions are intended to identify such forward-looking statements for the purposes of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. All such forward-looking statements are based on management's current expectations of future events and are subject to a number of factors that could cause actual results to differ materially and adversely from those set forth in or implied by such forward-looking statements. These risks and uncertainties include, among others, the availability and sufficiency of preclinical and clinical data, including the results from the Phase 2 trial of apitegromab or Part A of the Phase 1 trial of SRK-181, are not predictive of, may be inconsistent with data generated from future clinical trials of the same product candidate, including the Phase 3 clinical trial of apitegromab in SMA and Part B of the Phase 1 clinical trial of SRK-181. Scholar Rock's ability to provide the financial support, resources and expertise necessary to identify and develop product candidates on the expected timeline, the data generated from preclinical studies and clinical trials, information provided or decisions made by regulatory authorities, competition from third parties that are developing products for similar indications, the ability to obtain, maintain and protect its intellectual property, the success of Scholar Rock's current and potential future collaborations, Scholar Rock's dependence on third party manufacturers for the manufacture of product candidates including, without limitation, to supply any clinical trials, Scholar Rock's ability to manage expenses and to obtain additional funding when needed, the impact of general economic conditions, including interest rates, on our business activities and establish and maintain strategic business alliances and new business initiatives, and the impacts of current macroeconomic and geopolitical events, including rates of inflation and rising interest rates, on business operations and expectations, as well as those risks more fully discussed in the section entitled "Risk Factors" in Scholar Rock's Annual Report on Form 10-K for the year ended December 31, 2022, and Quarterly Report on Form 10-Q for the quarter ended June 30, 2023, as well as discussions of potential risks, uncertainties, and other important factors contained in Scholar Rock's subsequent filings with the Securities and Exchange Commission. Any forward-looking statements represent Scholar Rock's views only as of today and should not be relied upon as predictions of future events. All information in this press release is as of the date of the release, and Scholar Rock undertakes no duty to update this information unless required by law.

This presentation and the accompanying oral presentation may also contain estimates and other statistical data made by independent parties and by us relating to market size and growth, and other data about our industry. This data involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. In addition, projections, analyses and other information concerning our future performance and the future performance of the markets in which we compete are necessarily subject to a high degree of uncertainty and risk.

Apitegromab, SRK-181 and SRK-439 are investigational drug candidates under evaluation. Apitegromab, SRK-181 and SRK-439 have not been approved for any use by the FDA. The safety and efficacy of apitegromab and SRK-181 have not been established.

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# Scholar Rock: Transforming Patient Lives, Addressing High Unmet Medical Need



## Revolutionary Platform

- Global leader in TGF $\beta$  superfamily targets
- Targeting the latent forms of growth
- Exquisite selectivity to deliver differentiated therapies



## Positioned for Success

- Compelling proof-of-concept TOP/ apitegromab in spinal muscular atrophy informed Phase 3 SAPPHIRE trial design
- Seasoned leadership team with track record of clinical and commercial success



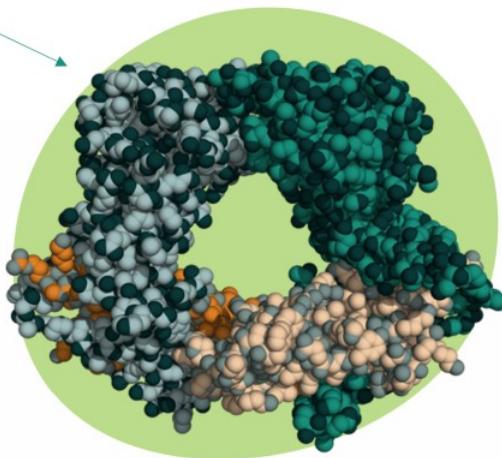
## Neuromuscular and Beyond

- Phase 3 SAPPHIRE study underway completed in Q3 2023; data readout expected in Q4 2024
- Phase 1 proof-of-concept DRAGO immuno-oncology: enrollment expected to complete in Dec 2023
- Advance Cardiometabolic Program
  - Plan to initiate proof of concept study with apitegromab in combination in 2024
  - Plan to concurrently advance investigational anti-myostatin towards IND submission in 2025

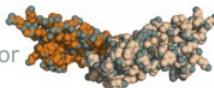


# Revolutionary Approach to Regulating TGF $\beta$ Superfamily Implicated Devastating Diseases

• Scholar Rock's Target  
Latent Growth Factor



Traditional Target  
"mature" active growth factor



## TGF $\beta$ Superfamily: Highly Sought-After Targets

Recognized by the industry as important targets given their fundamental roles in regulating a variety of biological processes

Dysregulation plays a devastating diseases 1 high unmet need, incl

- Neuromuscular disorders
- Fibrosis
- Oncology

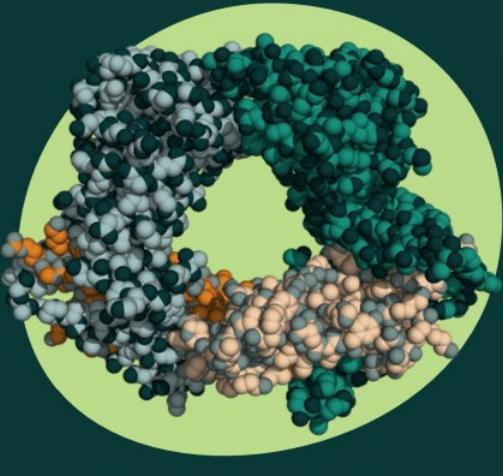
## Scholar Rock's R&D Platform Goals Aiming to Transform Medical Practice

- Selectively target the latent form of growth factors in the microenvironment of cells and tissues with uniquely designed molecules
- Overcome the challenges that plague traditional approaches to the "mature" active growth factor or its receptors, which are difficult to differentiate and lead to unintended negative effects



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## Differentiated Expertise Developing Muscle- Targeted Therapies



Myostatin is a member of the TGF $\beta$  superfamily known to be a negative regulator of muscle mass and promotes muscle catabolism

### Next Frontier in Antimyostatin

#### Leveraging Our R&D Platform to Expand into Cardion Disorders



- Pioneered unique approach to develop antibodies that bind and latent forms of myostatin with exquisite selectivity and activation



- Apitegromab is being developed as a highly selective inhibitor of myostatin activation, to enhance muscle growth and function in neuromuscular disorders

- To date apitegromab has been evaluated in approximately 250 patients ages 2 to 21 living with spinal muscular atrophy (SMA), showing benefit over 36 months, a well tolerated profile and low discontinuation rate



- Discovered multiple additional anti-pro/latent myostatin inhibitory antibodies including:

- SRK-439: Being developed as a novel, highly potent and selective antibody tailored for cardiometabolic disorders



# Robust Pipeline of Novel Product Candidates

TARGET		DISCOVERY/ PRECLINICAL	PHASE 1	PHASE 2	PHASE 3	ANTICI MILEST
Latent Myostatin	SPINAL MUSCULAR ATROPHY Apitegromab					SAPPI-Comm
	CARDIOMETABOLIC DISORDERS Apitegromab in Obesity**					File IND Initiate
	SRK-439 (novel antimyostatin antibody)					IND-er File IND
Latent TGFβ-1	IMMUNO-ONCOLOGY SRK-181 (selective context-independent, anti-latent TGFβ-1)					Rolling
	FIBROSIS Selective context-dependent (LTBP1 & LTBP3) anti-latent TGFβ-1					IND-er
RGMc	ANEMIA Selective anti-RGMc					IND-er

Potential to transform the lives of people living with a wide range of serious diseases, including neuromuscular disorders, cardiometabolic, oncology, and fibrosis

LTBP3=latent transforming growth factor beta binding protein 3; LTBP1=Latent Transforming Growth Factor Beta Binding Protein 1; RGM=Repulsive guidance molecule; TGFβ-1 =Transforming Growth Factor Beta-1; IND = Investigational New Drug; POC = Proof of Concept

\* Contingent upon receipt of regulatory approval; \*\* Subject to receipt of regulatory authority approval, we plan to utilize data from a previously completed Ph 1 study in healthy volunteers and initiate a Ph 2 POC trial in 2024. † Potential initiation of Ph 2 POC trial in 2024 subject to IND acceptance



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## Next Horizon: Cardiometabolic Disorders



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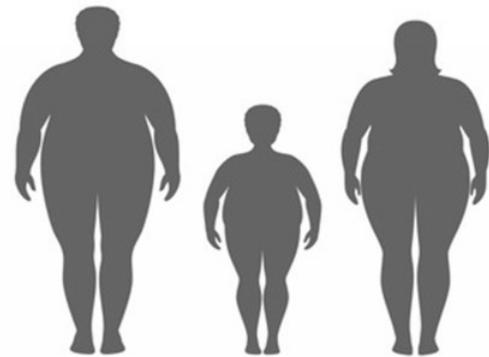
# Obesity is Recognized as a Top Global Public Health Issue

By 2030, obesity will affect **>1 billion adults and >250 million children and adolescents<sup>1</sup>**

In the US, **1 in 5 children and more than 1 in 3 adults** are obese

Obesity can increase the risk of comorbidities, such as some cancers, heart disease, and type 2 diabetes

Obesity is a common, serious, and costly disease affecting adults and children



Adult obesity associated with more than **\$147 billion in excess costs** annually in the US

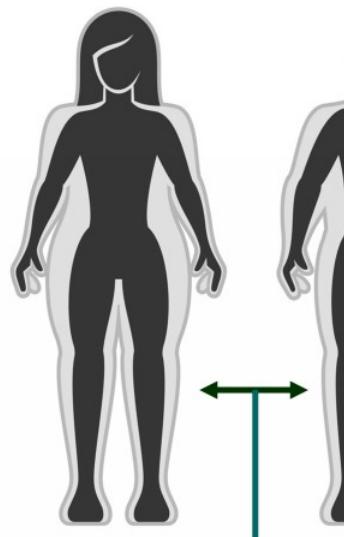
<sup>1</sup>The World Obesity Foundation, World Obesity Atlas 2022; <sup>2</sup>Centers for Disease Control and Prevention (CDC) Obesity Facts, [www.cdc.gov/obesity/about-obesity](http://www.cdc.gov/obesity/about-obesity), accessed 2023; <sup>3</sup>Ward ZJ, Bleich SN, Long MW, Gortmaker SL (2021) Association of body mass index with health care expenditures in the United States by age and sex. PLoS ONE 16(8): e0247307

# Loss of Lean Muscle Is Significant with GLP-1 RA Therapies

## Lean muscle is essential to healthy metabolic function & body compo

### Situation

- **Significant challenges with current weight loss strategies** (dietary/behavioral, pharmacological, surgical), including tolerability, lack of durability and significant muscle loss<sup>1,2,3</sup>
- Recently approved **GLP-1 receptor agonists** (GLP-1 RAs) are highly effective in weight loss & experiencing rapid uptake
- However, **25%-40% of total body weight loss mediated by GLP-1 RA therapy may be attributed to loss of lean muscle mass**<sup>2,3</sup>
- **Preserving lean muscle mass** is important to promote long-term metabolic benefits, sustainable weight management and health outcomes<sup>4,5,6,7</sup>



1 Muller TD, et al Anti-obesity drug discovery: advances and challenges. Nature Reviews Drug Discovery 2022; 21, 201–223 ; 2 Wilding JPH, Batterham RL, Calanna S, et al. Once-Weekly Semaglutide in Adults with Overweight or Obesity. N Engl J Med. 2021;384(11):989-1002. 3 Jastreboff AM, et al Tirzepatide Once Weekly for the Treatment of Obesity. NEJM 2022; 387 (3): 205-216. 4 Cava et al. Preserving healthy muscle during weight loss. Adv Nutr 2017;8:511-19. 5 Lundgren JR et al. Healthy Weight Loss Maintenance with Exercise, Liraglutide or Both Combined. NEJM 2021;384:1719-30. 6 Beal JW et al. Dietary weight loss-induced improvements in metabolic function are enhanced by exercise in people with obesity and prediabetes. Nat Metab. 2022;5(7):1221-1235. 7 Dulloo AG, et al How dieting makes some fatter: from a perspective of human body composition autoregulation. Proc Nutr Soc. 2012 Aug;71(3):379-89

**Significant proportion of weight loss due to loss of lean muscle mass**

# Obesity Landscape is Evolving & Growing: Estimated \$70-\$80B Annual Revenues by 2035<sup>1</sup>



TODAY

Watch out, Ozempic? Another diabetes drug is 'superior' for weight loss in studies

A. Pawlowski

Mon, September 25, 2023 at 6:46 PM EDT · 7 min read

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BUSINESS INSIDER

Insurers and drug-industry middlemen are cashing in on the weight-loss drug frenzy

Weight-loss drugs like Ozempic and Wegovy may be risky for older people because they melt away important muscles, experts say

BY MADISON MULLER AND BLOOMBERG

September 27, 2023 at 4:37 PM EDT

[Facebook](#) [Twitter](#) [LinkedIn](#) [Email](#)

The Washington Post

Democracy Dies in Darkness

Prescriptions for Ozempic and similar drugs have skyrocketed, data shows

1. Seigerman, ED, et al. "Obesity Exceptionalism: It's different this time." BMO Capital Markets: September 2023

# Recent KOL Interviews: Select Physicians See Value and Benefit in Muscle Maintenance During Weight Loss

## Key Opportunities

- **Some key opinion leaders (KOLs) see a lack of standard of care (SOC) in obesity** which leads to significant unmet need in large patient population
- **KOLs see the potential for additional benefit to patients** as sustained results stem from exercise, proper diet and treatment
- **Combination therapy with other weight loss drugs** (GLP-1 RA) may have a synergistic effect on weight loss and benefit overall patient health
- **Patients may experience prolonged weight-loss** and sustained results through the addition of muscle-targeted therapy

"There isn't a set SOC right now for obesity and there could be something out there that is standard and addresses the needs of the disease. If a company could address both weight loss and muscle maintenance, I think this could improve SOC significantly."

"I do see the importance of muscle mass, and this is something that could add to my patient's program, I would in a heart beat think it would make an impact. I have a lot of patients that benefit from something like this."

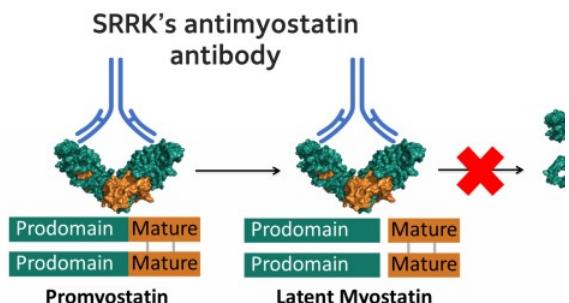
- KOL

Source: Clarion 2022 Analysis, Clarion KOL interviews

# We believe Therapeutic Strategy for Safe, Durable Weight Gain Could Include a Highly Selective Antimyostatin to Retain Lean Muscle

## Opportunity

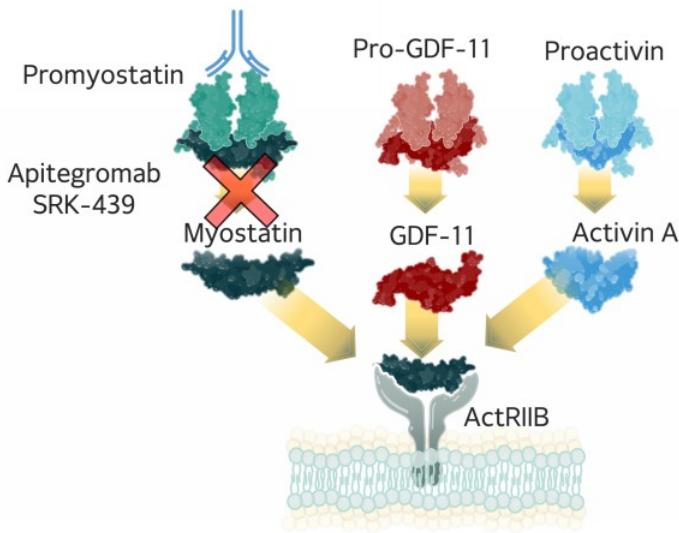
- Inhibition of myostatin has demonstrated important physical (increased muscle mass) and beneficial metabolic effects (insulin sensitivity, basal metabolic rate, reduction in fat mass) in preclinical models<sup>1</sup>
- Strong evidence has indicated upstream targeting of structurally differentiated pro- and latent myostatin leads to exquisite selectivity and avoids undesirable off-target effects<sup>2-4</sup>
- Inhibition of myostatin in combination with GLP-1 RA-driven weight loss may lead to retention of lean muscle mass and combat the counter-regulatory metabolic effects of weight loss



<sup>1</sup>Yang M et al. Myostatin: A potential therapeutic target for metabolic syndrome. *Frontiers in Endocrinology* 2023;14:1181913. <sup>2</sup>Pirruccello-Straub M et al. Blocking extracellular activation of myostatin as a strategy for treating muscle wasting. *Sci Reports* 2017;8:2922. <sup>3</sup>Welsh BT et al. Preclinical safety assessment and toxicokinetics of apitegromab antibody targeting proforms of myostatin for the treatment of muscle-atrophying disease. *Int J Tox* 2021;40(4):322-336. <sup>4</sup>Barrett D et al. A randomized phase 1 safety, pharmacokinetic and pharmacodynamic study of a novel myostatin inhibitor apitegromab (SRK-015): A potential treatment for spinal muscular atrophy. *Adv Ther* 2021;38:3222.

# Scholar Rock Antibodies Selectively Inhibit Activation of Myostatin

## Selective Targeting of Proforms of Myostatin



**SRRK antibodies do not bind to mature myostatin or any form of GDF11, Activin A, or other TGF- $\beta$  family members**

### Selectivity is critical to avoid safety concerns

- Mature myostatin and mature GDF11 have 90% conservation
- Most prior myostatin approaches bind/inhibit both GDF11 and Myostatin
- GDF11 loss leads to embryonic lethality, skeletal formation defects<sup>1</sup>
- GDF11 signaling inhibition may have negative effects on bone<sup>2</sup>

### Broad inhibition of ActRIIB signaling may be problematic

- ActRIIB knockout animals die shortly after birth due to developmental defects in respiratory and cardiac function<sup>3</sup>
- Activins are critical in reproductive biology and GDF11 has been shown to reduce FSH levels in women<sup>4</sup>

1. McPherron AC et al. Nat Genet 1999; 22(3):260-264.; 2. Joonho Suha et al. 2020 Mar 3;117(9):4910-4920; 3. Oh SP & Li E. Genes Dev. 1997 Jul 15;11(14):2031-2042. Clin Endocrinol (Oxf). 2018 Jun;188(6):908-919  
GDF11: Growth and Differentiation factor 11; ActRIIB: Activin Receptor IIB

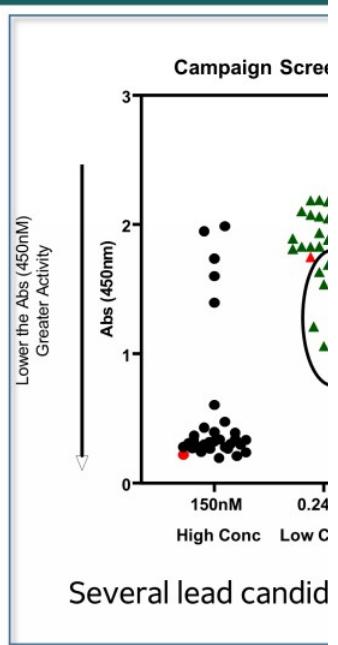
# SRK-439 Preclinical Data



# SRK-439: New Preclinical Myostatin Inhibitor Candidate Reaches Clinical Development: Opportunity to Address Cardiometabolic Patient Population

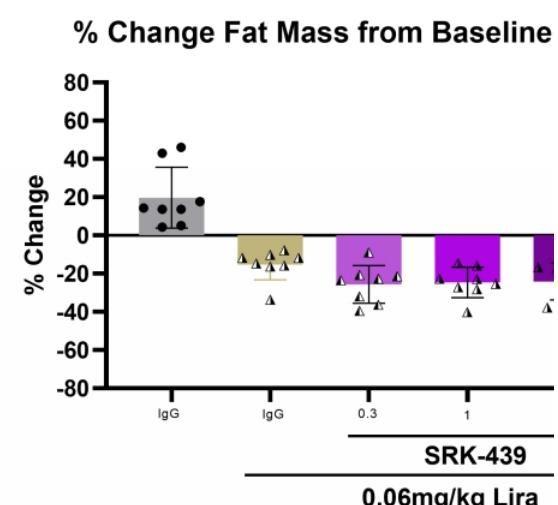
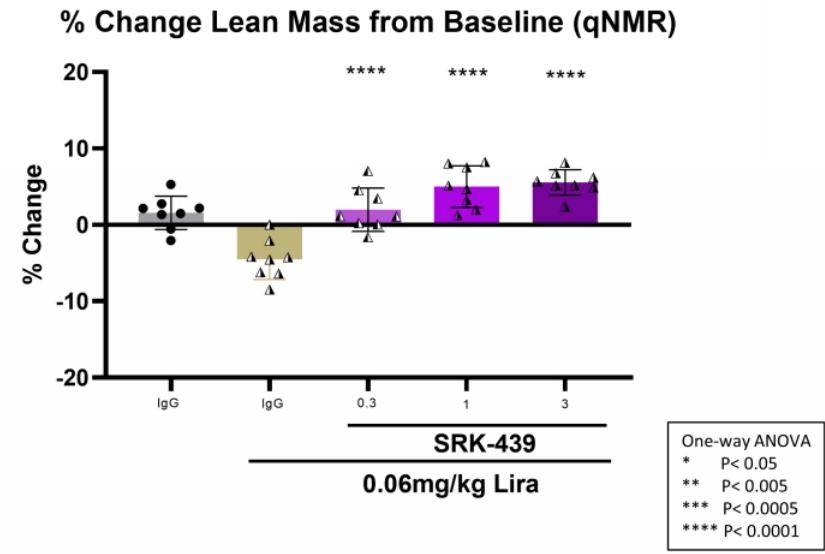
Antibody/ Variant	mTLL2 IC <sub>50</sub> (nM)	mAb K <sub>D</sub> (nM)
SRK-439	0.145	0.579

- SRK-439, a novel antimyostatin antibody being developed by SRRK, has **attractive properties** and **potential to address muscle loss associated with weight loss**
  - High *in vitro* affinity for pro- and latent myostatin
  - Maintained myostatin specificity (No GDF11 or Activin-A binding)
  - Maintained good developability profile
- Amenable to **subcutaneous formulation** and **dosing**
  - High concentrations achieved with unoptimized standard buffer



mTLL2 IC<sub>50</sub>: Inhibitory concentration at 50% as measure of *in vitro* potency of the antibody in its ability to inhibit the activation of latent myostatin by its activating enzyme mammalian tolloid like protease 2 | K<sub>D</sub>: Equilibrium dissociation constant as a measure of binding affinity of the antibody to latent myostatin.

# SRK-439 Maintained Lean Mass in Mouse Diet Induced Obese Model When Combined with GLP-1 RA Therapy



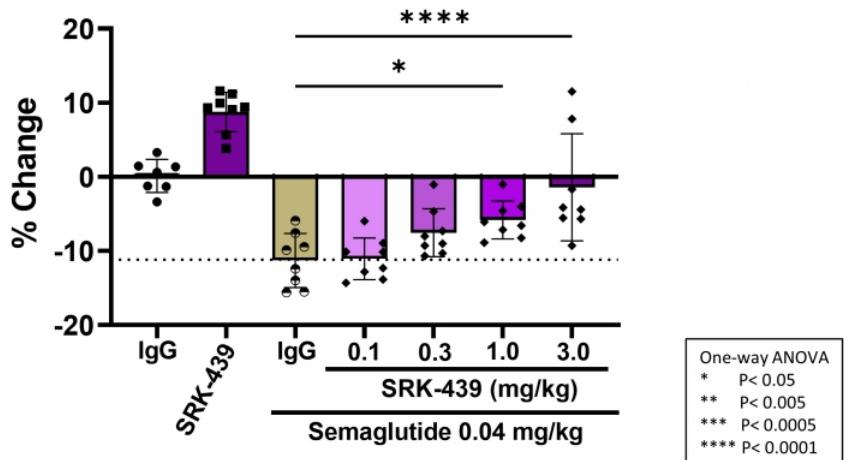
- Increased lean mass gain vs GLP-1 RA alone

- Improved fat mass loss vs GLP-1 RA

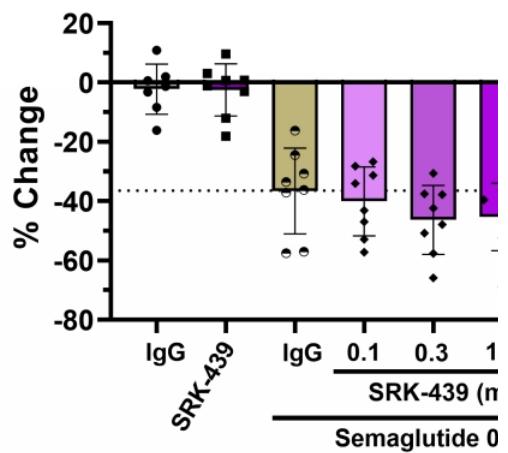
Figure shows the effects of increasing doses of SRK-439 in combination with liraglutide on lean mass (left panel) and fat mass (right panel) in a 28-day DIO mouse model as measured by qNMR; statistical analysis was done using one-way ANOVA (Dunnett's multiple comparison test).

# SRK-439 Dose-Dependently Reversed Lean Mass Loss in Mice and Enhanced Fat Mass Loss Induced by Semaglutide Treatment

% Change - Lean Mass (qNMR)



% Change - Fat Mass (%)



- Dose-dependent preservation of lean mass with effects seen as low as 0.3mg/kg

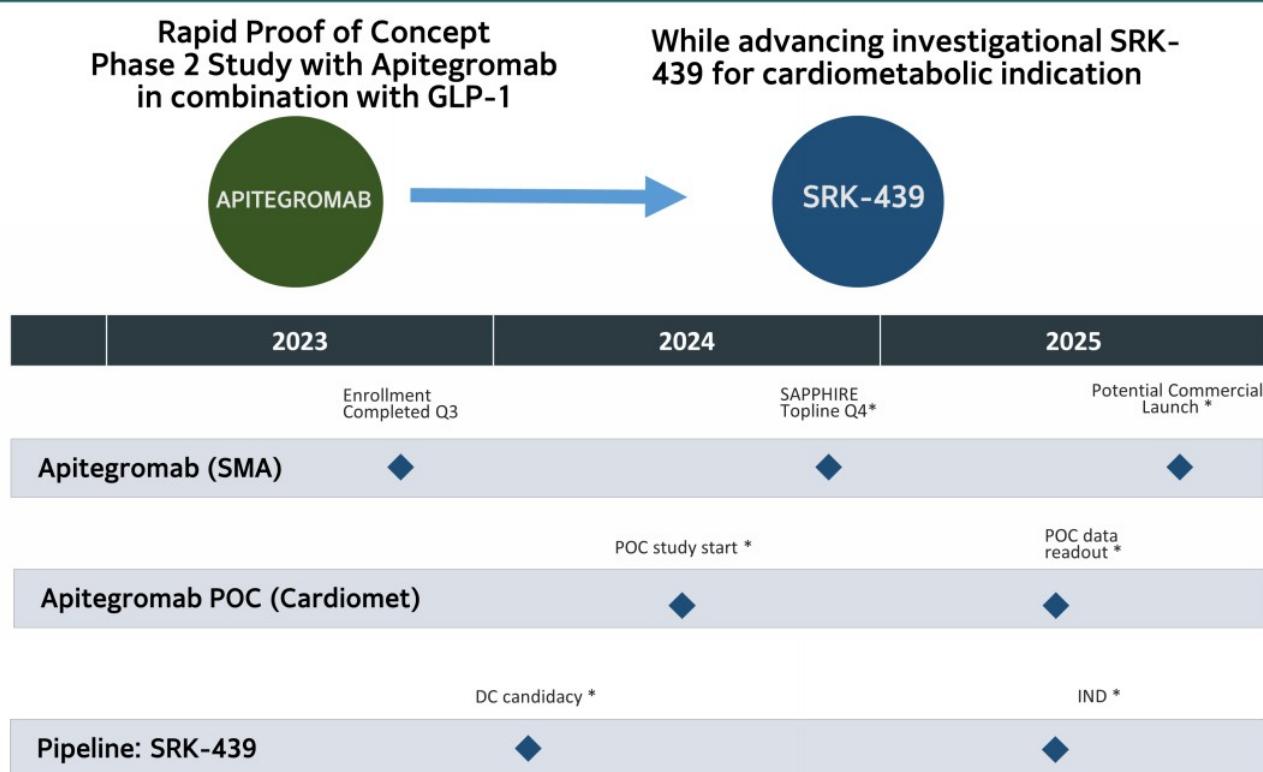
- Additional fat mass loss vs semaglutide alone

Figure showed the effects of increasing doses of SRK-439 in combination with semaglutide on lean mass (left panel) and fat mass (right panel) in DIO mouse model as measured by qNMR; statistical analysis was done using one-way ANOVA (Dunnett's multiple comparison test)

## SRRK Selective Myostatin Inhibitors Represent an Opportunity to Address Unmet Need in Cardiometabolic Disorders

- Preclinical data suggests mechanism of action that could safely reduce body fat while maintaining muscle, thereby enhancing metabolic health
- Studies in DIO mice on the effects of GLP-1 receptor agonist (GLP-1 RA) in combination with myostatin-selective inhibitor showed:
  - Dose-dependent reversal of lean mass loss mediated by GLP-1 RA treatment
  - Enhancement of fat mass loss mediated by GLP-1 RA treatment
- Initial preclinical data for **SRK-439**, a novel myostatin selective inhibitor, supports an ideal profile for a **differentiated molecule designed to address cardiometabolic patient needs**
  - Potentially suitable for subcutaneous administration
- Filed composition of matter patent for SRK-439 with projected expiry of 2043

# Plan to Expedite Cardiometabolic Program with Phase 2 Proof of Concept Study of Apitegromab in Obesity



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# Cardiometabolic Program Summary

## Differentiation

- Preclinical data suggests selective mechanism of action that can maintain muscle mass while enhancing fat mass loss, thereby improving metabolic function
- SRK-439: Preclinical data supports the overall target candidate profile to address the cardiometabolic patient population
- Represents a potential new class of treatment



## Strong Scientific Rationale



## High Unmet Medical Need & Significant Commercial Opportunity



## Opportunity

- Strong pre-clinical evidence indicates increase in lean muscle mass & fat loss when a myostatin selective combined with GLP-1 receptor agonist
- Scholar Rock has the potential to lead frontier in anti-myostatin therapies, pioneered unique approach and differentiated expertise

- Obesity is a growing global epidemic with chronic health problems and 4.7M deaths annually<sup>1</sup>
- Clinical and commercial landscape amid high unmet need
- Muscle-targeted approach represents potential class of treatments

<sup>1</sup>[www.who.int/news-room/fact-sheets/detail/obesity-and-overweight](http://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight)

# THANK YOU



# APPENDIX

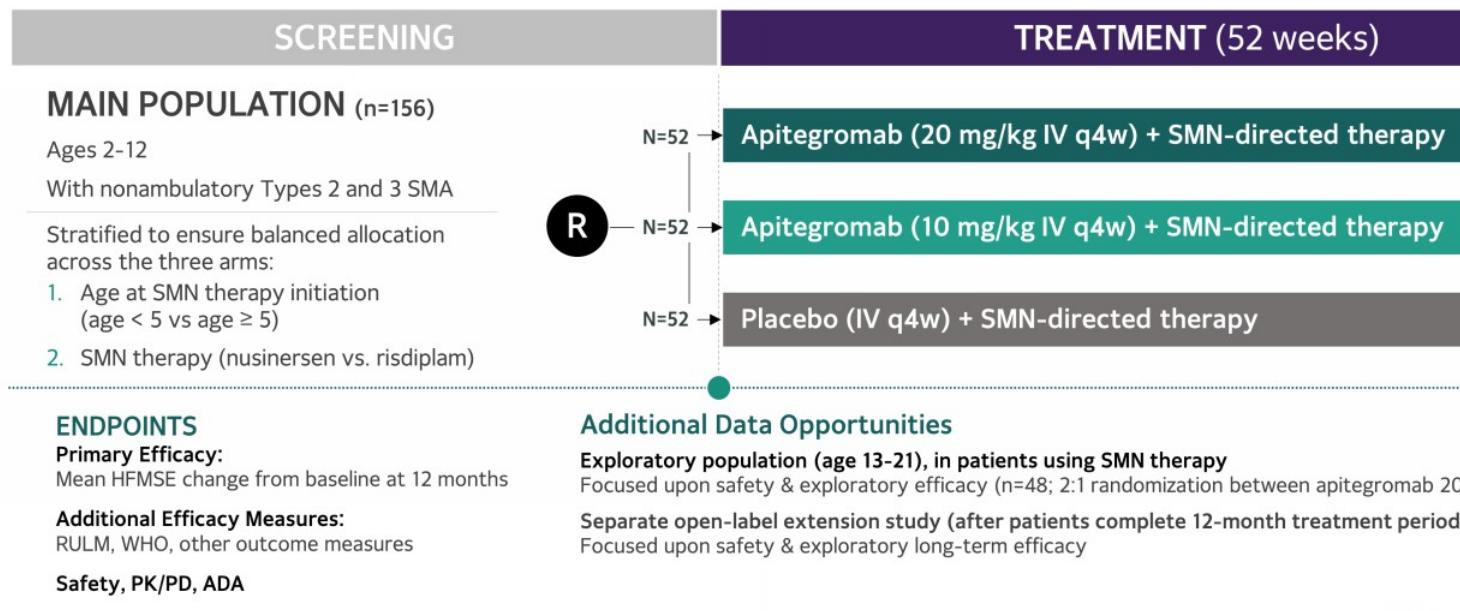
# Ongoing SAPPHIRE Phase 3 Trial Overview



Randomized, double-blind, placebo-controlled, parallel arm design (n=204)

Enrolling patients who are on SMN-directed therapy (nusinersen or risdiplam)

Anticipate completing enrollment in 3Q 2023



ClinicalTrials.gov Identifier: NCT05156320  
HFMSE=Hammersmith Functional Motor Scale Expanded; RULM=Revised Upper Limb Module; R=randomization; SMA=spinal muscular atrophy; SMN=survival motor neuron.



# Executing on the Promise: Apitegromab SMA Trials

