

**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): January 10, 2022

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 January 10, 2022, Scholar Rock Holding Corporation (the “Company”) issued a press release announcing a corporate update and highlighting priorities for 2022. A copy of the press release is being furnished as Exhibit 99.1 to this report on Form 8-K.

On January 4, 2022, the Company announced that management will present at the 40th Annual J.P. Morgan Healthcare Conference on Tuesday, January 11, 2022 at 7:30 a.m. EST. A copy of the presentation slide deck that will be presented is being furnished as Exhibit 99.2 to this report on Form 8-K. A live webcast of the presentation may be accessed by visiting the Investors & Media section of the Scholar Rock website at <http://investors.scholarrock.com>.

The information in this report furnished pursuant to Item 7.01 and Exhibits 99.1 and 99.2 shall not be deemed “filed” for the purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), or otherwise subject to the liabilities of that section. It may only be incorporated by reference in another filing under the Exchange Act or the Securities Act of 1933, as amended, if such subsequent filing specifically references the information furnished pursuant to Item 7.01 and Exhibits 99.1 and 99.2 of this report.

Item 8.01. Other Events.

On December 19, 2018, Gilead Sciences, Inc. (“Gilead”) and Scholar Rock, Inc. (“Scholar Rock”) entered into a three-year collaboration to discover and develop therapeutics that target TGFβ-driven signaling, a central regulator of fibrosis (the “Collaboration Agreement”). On January 6, 2022, Scholar Rock entered into a letter agreement with Gilead which (i) confirmed that the collaboration period under the Collaboration Agreement had expired as of December 19, 2021, and (ii) the parties agreed the option exercise period for all programs under the Collaboration Agreement had been terminated as of date of the letter agreement.

The foregoing description of the letter agreement does not purport to be complete and is qualified in its entirety by reference to the letter agreement, which we intend to file as an exhibit to our Form 10-Q for the quarter ending March 31, 2022.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits

Exhibit No.	Description
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<u>99.1</u>	<u>Press Release issued by the Company on January 10, 2022, furnished hereto.</u>
<u>99.2</u>	<u>Presentation slide deck, furnished hereto.</u>

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: January 10, 2022

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

Scholar Rock Provides Corporate Update and Highlights Priorities for 2022

- *Initiated Phase 3 SAPPHIRE Clinical Trial Evaluating Apatemab in Non-Ambulatory Patients with Type 2 and Type 3 Spinal Muscular Atrophy (SMA)*
- *Advanced DRAGON Phase 1 Study into Part B to Evaluate Potential for SRK-181 to Overcome Checkpoint Inhibitor Resistance in Cancer Patients*
- *Concluded Partnership with Gilead and Regained Rights to Advanced Preclinical Assets with Multiple Distinct Pharmacological Profiles*
- *Ended 2021 with Approximately \$253 Million in Cash, Cash Equivalents, and Marketable Securities*

CAMBRIDGE, Mass.--(BUSINESS WIRE)--January 10, 2022--Scholar Rock (NASDAQ: SRRK), a clinical-stage biopharmaceutical company focused on the treatment of serious diseases in which protein growth factors play a fundamental role, today provided recent corporate updates and highlighted upcoming priorities for its pipeline programs in 2022.

“2021 was another transformative year for Scholar Rock, with positive data from both of our clinical programs, including from the TOPAZ Phase 2 trial for apitemab, which is being developed for the improvement of motor function in patients with SMA; and Part A of the DRAGON Phase 1 proof-of-concept trial for SRK-181, being developed to overcome resistance to check point inhibitor therapy in cancer patients,” said Nagesh Mahanthappa, Ph.D., Interim CEO of Scholar Rock. “In 2022, we are thrilled to be advancing a pivotal Phase 3 trial of apitemab and advancing our SRK-181 program to test our hypothesis that this highly selective and potent molecule can overcome resistance to checkpoint inhibitors thereby increasing the number of patients who may benefit from cancer immunotherapy. In addition, the preclinical pipeline has received a major boost as we have regained rights to assets discovered and developed during our research partnership with Gilead that have novel pharmacological profiles relevant to TGFβ-mediated diseases.”

2022 Priorities:

Apatemab is a selective inhibitor of myostatin activation being developed as the potential first muscle-directed therapy for the treatment of spinal muscular atrophy (SMA).

- **Robust Enrollment of the Phase 3 SAPPHIRE Trial Evaluating Apatemab in Patients with Non-Ambulatory Type 2 and 3 Patients.** Scholar Rock has initiated the SAPPHIRE study. The study design plans for approximately 156 patients aged 2-12 years old with non-ambulatory Type 2/3 SMA to be enrolled in the main efficacy population. Patients will be randomized 1:1:1 to receive for 12 months either apitemab 10 mg/kg, apitemab 20 mg/kg, or placebo by intravenous (IV) infusion every 4 weeks added on top of background SMN treatment.
-

- **Progress TOPAZ Long-Term Extension to Two Year Readout.** As of January 6, 55 of 57 patients remain in the long-term extension trial of apitegromab in Type 2 and 3 SMA.
- **Advance Development Activities to Include Patients with Type 1 and Ambulatory SMA.**

SRK-181 is a potent and highly selective inhibitor of latent TGF β 1 activation being developed with the aim of overcoming primary resistance to and increasing the number of patients who may benefit from checkpoint inhibitor therapy.

- **Advance Progress in Part B of DRAGON Phase 1 Proof-of-Concept Trial.** Based on the safety and pharmacokinetic data from Part A of the DRAGON Phase 1 trial, Scholar Rock has initiated the Part B dose expansion portion of the trial, which is evaluating SRK-181 dosed 1500 mg every three weeks (Q3W) in patients receiving an approved anti-PD-(L)1 therapy dosed Q3W and 1000 mg every two weeks (Q2W) in patients receiving an approved anti-PD-(L)1 therapy dosed Q2W. Part B will enroll and dose patients in multiple proof of concept cohorts conducted in parallel, including:
 - Urothelial carcinoma (UC),
 - Cutaneous melanoma (MEL),
 - Non-small cell lung cancer (NSCLC),
 - Clear cell renal cell carcinoma (ccRCC),
 - Other solid tumors.

Each cohort is expected to enroll up to 40 patients with various locally advanced or metastatic solid tumors who have demonstrated primary resistance to anti-PD-(L)1 therapy. Early efficacy and safety data are anticipated in 2022.

Advancing assets gained from the Gilead collaboration. In December 2018, Gilead Sciences and Scholar Rock entered into a three-year collaboration to discover and develop therapeutics that target TGF β -driven signaling, a central regulator of fibrosis. Under the collaboration, Gilead had exclusive options to license worldwide rights to antibodies from certain TGF β programs being developed by Scholar Rock. Scholar Rock received \$80.0 million in proceeds upon signing the agreement and an additional \$25.0 million preclinical milestone was achieved in December 2019 for the successful demonstration of efficacy in preclinical in vivo proof-of-concept studies. As of December 19, 2021 the collaboration period has concluded and on January 6, 2022, Gilead agreed that its option exercise period for all programs has been terminated.

- Scholar Rock regains rights to a suite of antibodies with novel pharmacological profiles that were discovered over the course of the collaboration.
-

- Of particular note, Scholar Rock has discovered antibodies that selectively inhibit the activation of latent TGFβ1 in the context of fibrotic extracellular matrix and that avoid perturbing TGFβ1 presented by cells of immune system. Such antibodies demonstrated significant antifibrotic activity in a variety of preclinical rodent models and safety at all doses tested in a non-GLP mouse safety study that we intend to publish in 2022.

“The novel anti-fibrotic antibodies discovered during this collaboration demonstrate the unique capabilities of the discovery platform we have built at Scholar Rock,” said Gregory Carven, CSO of Scholar Rock. “We are excited to continue the advancement of these assets as a part of the company’s growing preclinical pipeline.”

“We made great progress across our portfolio in 2021 and we’re carrying that momentum into 2022,” said Ted Myles, CFO and Head of Business Operations of Scholar Rock. “We recently strengthened our balance sheet through the use of our ATM and taking the \$25 million second tranche of our debt facility with Silicon Valley Bank and Oxford Finance so that we have greater flexibility to continue to advance our clinical and pre-clinical programs. We have high conviction in our platform based on the exciting clinical data to date and we believe this puts us in a unique position as we advance our programs to serve patients’ needs.”

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, the Company 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. For more information, please visit www.ScholarRock.com or follow Scholar Rock on Twitter (@ScholarRock) and LinkedIn (<https://www.linkedin.com/company/scholar-rock/>).

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

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, Scholar Rock's expectations regarding its growth, strategy, progress and timing of its clinical trials for apitegromab, SRK-181, 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 its product candidates and proprietary platform. The use of words such as "may," "might," "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, that preclinical and clinical data, including the results from the Phase 2 trial of apitegromab, or Part A of the DRAGON clinical trial for SRK-181, are not predictive of, may be, inconsistent with, or more favorable than, data generated from future clinical trials of the same product candidate, including, without limitation, the Phase 3 trial of apitegromab in SMA or the Phase 1 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 Scholar Rock's nonclinical and preclinical studies and clinical trials, information provided or decisions made by regulatory authorities, competition from third parties that are developing products for similar uses, Scholar Rock's ability to obtain, maintain and protect its intellectual property, Scholar Rock's dependence on third parties for development and 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 to support its business activities and establish and maintain strategic business alliances and new business initiatives, and the impacts of public health pandemics such as COVID-19 on business operations and expectations, 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 September 30, 2021, 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.

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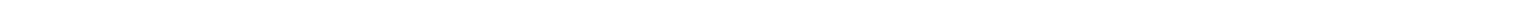
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Deep Insights Advancing Impactful Medicines

40th Annual J.P. Morgan
Healthcare Conference

January 10-13, 2022



Disclaimers

Various statements in this presentation concerning the future expectations, plans and prospects of Scholar Rock, Inc. ("Scholar Rock"), including without limitation, Scholar Rock's expectations regarding its strategy, its product candidate selection and development timing, including timing for the initiation of and reporting results from its clinical trials for apitegromab, SRK-181, and other product candidates and indication selection and development timing, its cash runway, 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 its product candidates and proprietary platform. The use of words such as "may," "might," "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 for the purposes of the safe harbor provisions under 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 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, that 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, or more favorable than, data generated from future clinical trials of the same product candidate, including the Phase 3 trial of apitegromab in SMA and Part B of the Phase 1 trial of SRK-181, respectively, 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 nonclinical and preclinical studies and clinical trials, information provided or decisions made by regulatory authorities, competition from third parties that are developing products for similar uses, Scholar Rock's 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 parties for development and 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 to support its business activities and establish and maintain strategic business alliances and new business initiatives, and the impacts of public health pandemics such as COVID-19 on business operations and expectations, 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 September 30, 2021, 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.

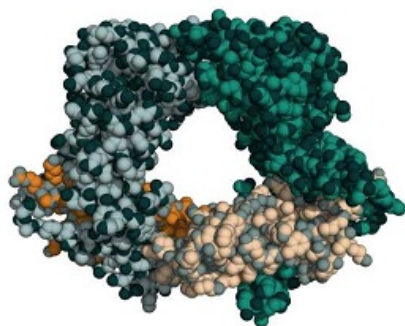
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Bringing a Revolutionary Approach to Highly Sought-After Growth Factors Implicated in Devastating Diseases

Scholar Rock's Target

Growth Factor Precursor (Latent Form)



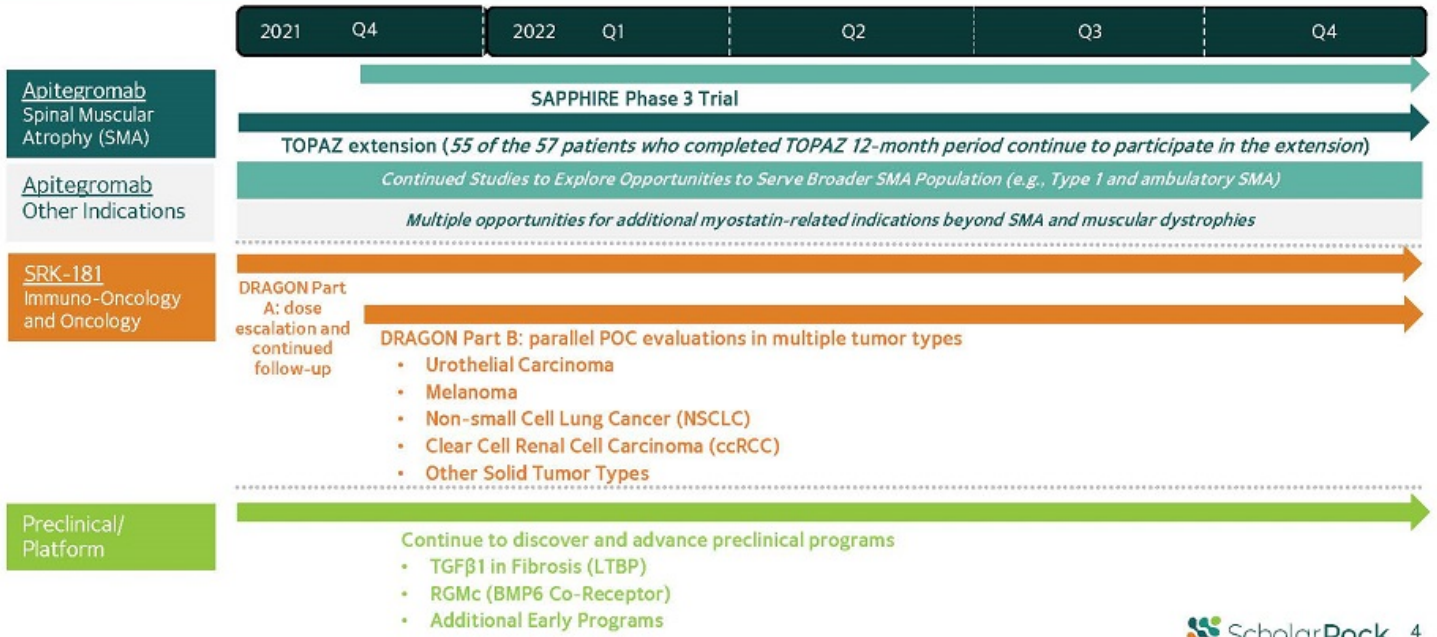
Scholar Rock's R&D Platform

Transform Medical Practice

- Pursue important targets with well-validated biology but are difficult to drug
- Apply revolutionary approach to tough targets
 - Leverage deep insights into structure and function
 - Engineer antibodies to deliver differentiated therapeutic profiles (i.e. exquisite selectivity)

TOPAZ demonstrated the therapeutic potential of inhibiting the latent forms of growth factors

Portfolio Spanning All Stages of Discovery and Development





Apitegromab Positioned to be Next Potential Transformative Therapy for Patients with SMA



Potential to Pioneer a New Treatment Era: Opportunity for Muscle-Directed Therapy to Complement SMN Upregulators



Phase 3 Trial Design	<ul style="list-style-type: none"> • Non-ambulatory Type 2/3 • 2-12 years of age • Primary endpoint: Mean change from baseline in HFMSE at 15 months 	<ul style="list-style-type: none"> • Non-ambulatory Type 2/3 • 2-25 years of age • Primary endpoint: Mean change from baseline in MFM-32 at 12 months 	<ul style="list-style-type: none"> • Infantile-onset Type 1 • <6 months of age • Primary endpoints: Ability to sit independently and event-free survival
Indication	<ul style="list-style-type: none"> • Type 1, 2, and 3 SMA in pediatric and adult patients 	<ul style="list-style-type: none"> • Type 1, 2, 3 SMA in patients 2 months of age and older 	<ul style="list-style-type: none"> • SMA in patients less than 2 years of age
Market Penetration	<ul style="list-style-type: none"> • >11,000* patients treated WW • \$2+ billion in revenues (LTM) 	<ul style="list-style-type: none"> • ~4,000** patients treated WW • ~CHF243 million in revenues (1H21) 	<ul style="list-style-type: none"> • ~1,200*** patients treated WW • ~\$1.2 billion in revenues (LTM)

Patients continue to experience major functional impairments despite utilization of SMN upregulators

*As of Biogen 2Q21 financial update on 7/22/21; includes patients treated worldwide in post-marketing setting, expanded access program, and clinical trials.

**As of Roche 1H21 financial update on 7/22/21; includes patients treated worldwide between clinical trials, commercial, and compassionate use program.

***As of Novartis 2Q21 financial update on 7/21/21; commercially, via managed access programs and in clinical trials

HFMSE = Hammersmith Functional Motor Scale Expanded; MFM-32 = Motor Function Measure – 32 items

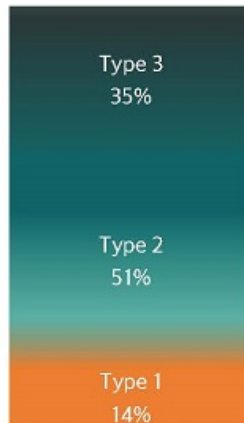
Spinal Muscular Atrophy Overview

Global disease with 30,000-35,000 affected in U.S. and Europe alone

- Significant, progressive motor function impairment; many lose ambulation

- Severe, progressive disabilities and unable to walk independently

- Infantile onset; unable to sit up independently



TOPAZ* 12-month results showed transformative potential in non-ambulatory Type 2 and 3 patients

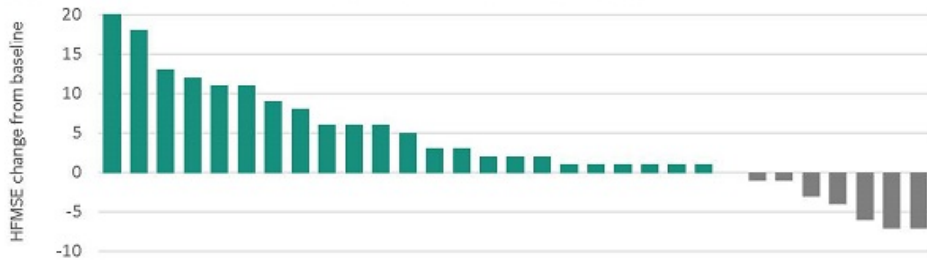
Represents ~2/3 of overall patient population

Motor neuron impairment and loss due to SMN genetic deficiency, leading to muscle atrophy and weakness

*TOPAZ Phase 2 trial evaluated patients with Type 2 and 3 SMA (did not include Type 1)
Lally et al, Orphanet Journal of Rare Diseases, 2017

TOPAZ Top-Line Data Showed Apitegromab's Transformative Potential in Patients with Type 2/3 SMA

- ✓ Majority of non-ambulatory patients* experienced HFMSE increases from apitegromab as add-on during chronic maintenance phase of SMN therapy



- ✓ Apitegromab led to HFMSE improvements in both non-ambulatory cohorts (including patients started on nusinersen at age ≥ 5)

At 12 months	Mean HFMSE increase	≥ 1 -point increase	≥ 3 -point increase
Initiated background nusinersen age < 5 **	+7.1 points	88% (7/8) of patients	63% (5/8) of patients
Initiated background nusinersen age ≥ 5	+0.6 points	64% (9/14) of patients	29% (4/14) of patients

* Pooled cohorts of non-ambulatory patients treated with apitegromab 20 mg/kg and 2 mg/kg

** Non-ambulatory patients who initiated background nusinersen at a young age of < 5 years and treated with apitegromab 20 mg/kg dose

SAPPHIRE Phase 3 Design Optimized by Insights from TOPAZ



TOPAZ Learnings

Largest HFMSE gains observed in the non-ambulatory Type 2/3 SMA cohorts

Exploratory age 2-12 analysis in non-ambulatory Type 2/3 showed transformative potential

HFMSE gains evident by 12 months of treatment

Dose response seen (greater effect observed with 20 mg/kg over 2 mg/kg)



SAPPHIRE Design Elements



- Study population: Non-ambulatory Type 2/3 SMA
- Primary efficacy endpoint: HFMSE

- Age 2-12 will be main efficacy population

- 12 month treatment duration

- 20 mg/kg apitegromab dose
- To explore potential that dose between 2 and 20 mg/kg may be comparable to 20 mg/kg, will also evaluate 10 mg/kg arm

SAPPHIRE Phase 3 Design Optimized by Insights from TOPAZ



TOPAZ Learnings

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SAPPHIRE Design Elements



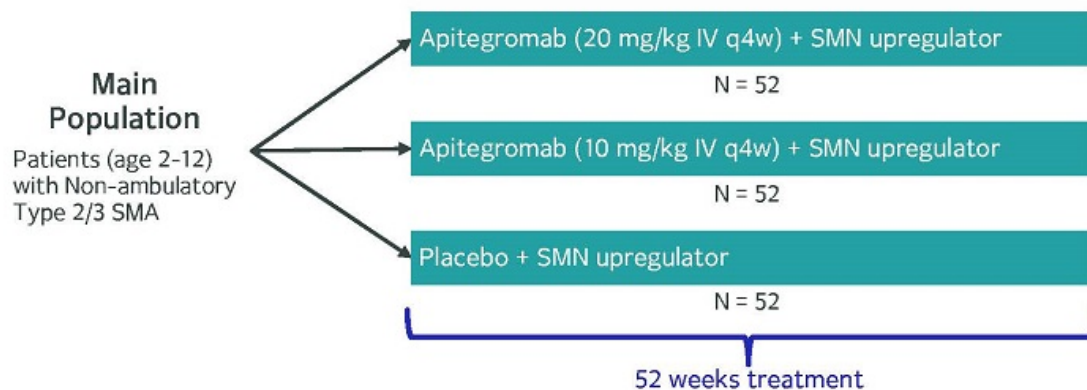
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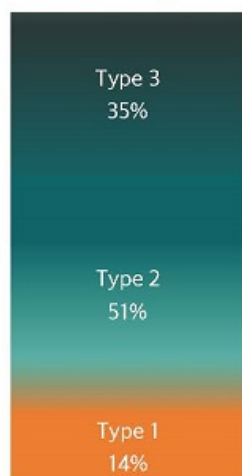
SAPPHIRE (Phase 3) Trial Overview



- Randomized, double-blind, placebo-controlled, parallel arm design
- Add-on to background SMN therapy (enrolling patients on nusinersen as well as patients on risdiplam)
- Primary efficacy endpoint: mean HFMSE change from baseline at 12 months
- Study start-up activities commenced

Additional Therapeutic Opportunities May Be Pursued With Separate Development Strategies

Global disease with 30,000-35,000 affected in U.S. and Europe alone



A Apitegromab in non-ambulatory Type 2 and 3 SMA with background SMN upregulators

- Represents 2/3 of overall patients
- Patients already treated with or eligible for SMN upregulator therapy
- Improvements in motor function on top of SMN upregulators observed in TOPAZ

B Type 1 SMA, including those treated with gene therapy

- Highest incidence population and growing prevalence due to SMN upregulator treatment
- TOPAZ showed benefits of early treatment suggesting potential in Type 1 patients

C

- Ambulatory patients
- Smaller population but high unmet need as benefits of SMN regulators not well-established
 - TOPAZ suggests potential clinical benefit in a subset of patients



**SRK-181: Potential
Transformative Backbone
for a New Era of
Cancer Immunotherapy**

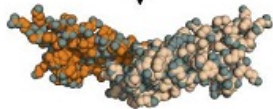


DRAGON



SRK-181: Unique TGF β 1-Selective Approach to Overcoming Checkpoint Inhibitor Resistance

Scholar Rock's Target SRK-181: Latent TGF β 1 Inhibitor



Traditional target:
"Mature" growth factor

- ✓ **Inhibits TGF β 1 pathway** - implicated in CPI resistance
- ✓ **Highly selective targeting** - avoids inhibiting latent TGF β 2 and TGF β 3 isoforms
- ✓ **Aimed at increasing therapeutic window** - potentially avoids toxicities associated with non-selective TGF β inhibition
- ✓ **Therapeutic flexibility** - pair with any CPI and optimize dosing of each component of combination therapy

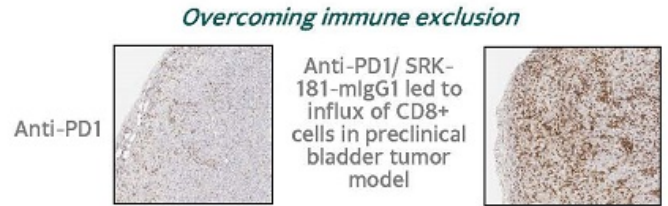
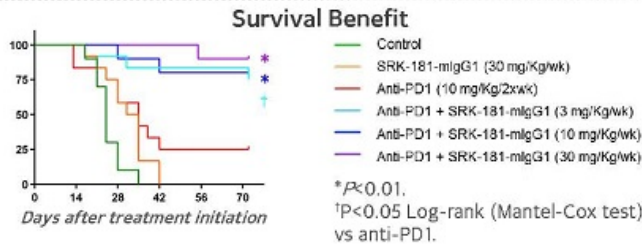
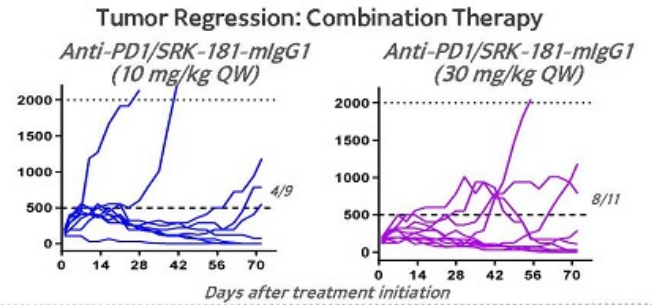
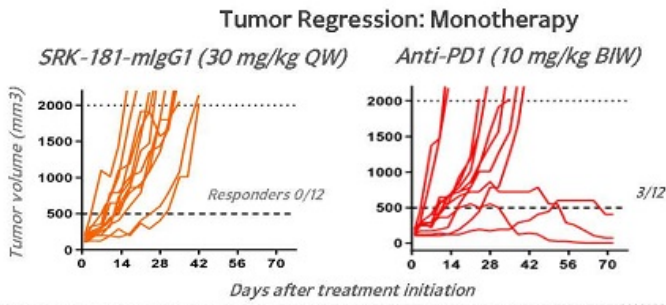
SRK-181 Therapeutic Hypothesis: Potential Advantages of Latent TGFβ1 Inhibitor

	SRK-181*	Bifunctional TGFβ/CPI	ALK5 Inhibitor	Nonselective TGFβ antibody
Selectivity for TGFβ1: potential for wider therapeutic window and improved safety	✓	X	X	X
Ability to combine with any anti-PD-(L)1	✓	X	✓	✓
Ability to optimize dosing of each component of combination therapy	✓	X	✓	✓
Activity spatially distinct from anti-PD-(L)1 in tissue	✓	X	✓	✓

SRK-181 is an investigational product candidate currently being evaluated in DRAGON phase 1 clinical trial. The efficacy and safety of SRK-181 have not been established.

TGFβ1 Blockade with SRK-181-mIgG1 Rendered Preclinical Tumor Models Susceptible to Anti-PD1 Therapy

Melanoma (Cloudman S91) model: Combination treatment led to tumor regression and survival benefit



Preclinical data published in *Science Translational Medicine*. Martin CJ, et al. *Sci Transl Med*. 2020 Mar 25;12(536):eaay8456. <https://scholarrock.com/platform/publications>.

TGFβ1 Isoform Specificity of SRK-181 Improved Preclinical Toxicity Profile

Microscopic observations in heart	Control Vehicle iv, qwk x 4	LY2109761 300 mg/kg po, qd x 8	PanTGFβAb 30 mg/kg iv, 1 dose	SRK-181			LEGEND
				10 mg/kg iv, qwk x 4	30 mg/kg iv, qwk x 4	100 mg/kg iv, qwk x 4	
Valvulopathy							□ Unremarkable
Atrium—Mixed cell infiltrate							■ Minimal
Myocardium—Degeneration/necrosis							■ Slight
Myocardium—Hemorrhage							■ Moderate
Myocardium—Mixed cell infiltrate, base							
Coronary artery—Necrosis with inflammation							
Cardiomyocyte—Necrosis/inflammatory cell infiltrate							

Repeat dose pilot toxicology study in adult female Sprague Dawley rats:

- Cardiac findings were exhibited in animals dosed with a pan-TGFβ antibody or LY2109761 (inhibitor of ALK5, common TGFβ receptor kinase) as expected based on published data¹
- No cardiotoxicities (valvulopathy) were noted with SRK-181
 - NOAEL for SRK-181 was the highest dose evaluated of 100 mg/kg QW

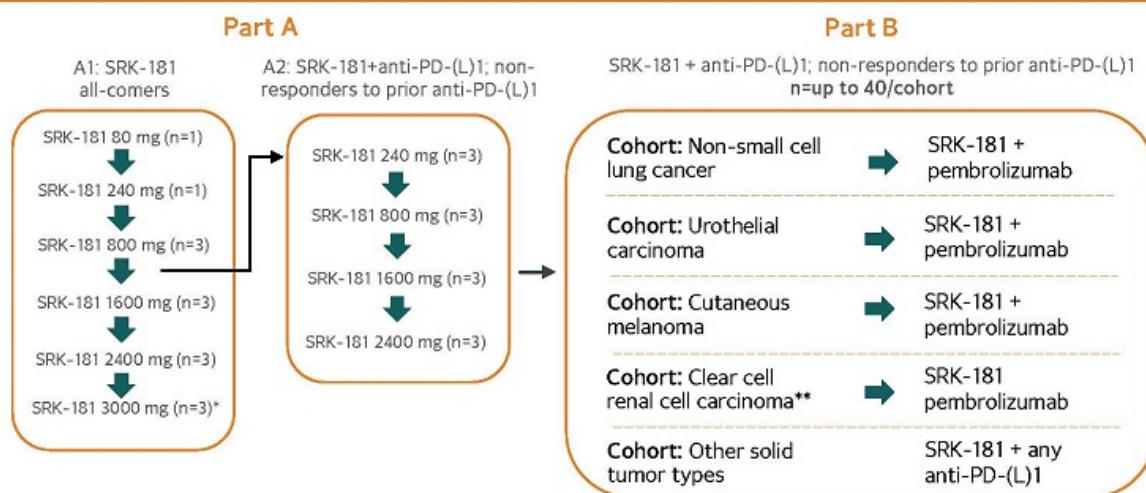
4-week GLP toxicology studies:

- Rats: NOAEL for SRK-181 was up to highest evaluated dose of 200 mg/kg QW
- Non-human primates: NOAEL for SRK-181 was up to highest evaluated dose of 300 mg/kg QW

Selectivity of SRK-181 offers potential to overcome toxicity and dose-limiting challenges of non-selective TGFβ pathway approaches

Preclinical data published in *Science Translational Medicine*. Martin CJ, et al. *Sci Transl Med* 2020 Mar 25;12(536): eaay8456.
¹Source: Anderton MJ, et al. Induction of heart valve lesions by small-molecule ALK5 inhibitors. *Toxicol Pathol*. 2011;39: 916-924.;
 and Stauber AJ, et al. Nonclinical safety evaluation of a transforming growth factor β Receptor 1 kinase inhibitor in Fischer 344 rats and beagle dogs. *J Clin Pract*. 2014; 4:3.

DRAGON Phase 1 POC Trial to Evaluate SRK-181's Ability to Overcome Primary Resistance to Checkpoint Inhibitors

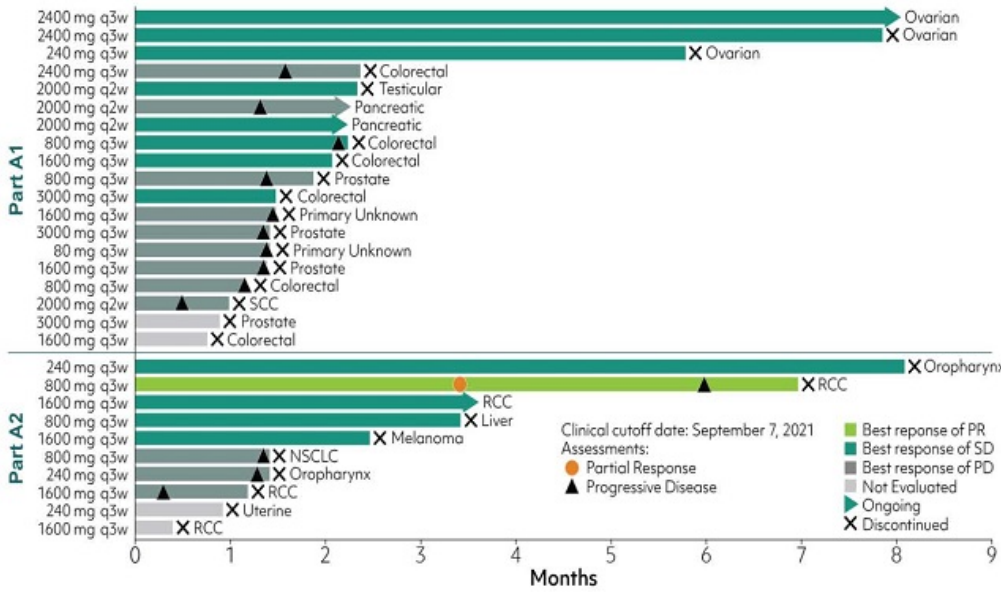


Note: In Part A, SRK-181 is administered q3w, with the exception of a 2000 mg q2w cohort in Part A1. In Part B, SRK-181 is administered at 1500 mg q3w for combination with anti-PD-(L)1 therapy dosed q3w (or at 1000 mg q2w for combination with anti-PD-(L)1 therapy dosed q2w)

* A cohort of 2000 mg Q2W (n=3) was also evaluated.

**The clear cell RCC cohort will also explore the effects of SRK-181 in patients with relapsed response after anti-PD-(L)1 treatment.

DRAGON Part A: Preliminary Anti-Tumor Effects*



Part A1 (n=19)

- 8 patients had best response of stable disease (SD)
- 3 ovarian cancer patients had best response of SD, with tumor regressions in 2 of these individuals

Part A2 (n=10)

- At 800 mg q3w, 1 partial response (PR) was observed in patient with anti-PD-1-resistant renal cell carcinoma (RCC)
- 4 patients had best response of SD including 1 oropharynx cancer patient with tumor regression

*Preliminary anti-tumor effects were assessed using RECIST1.1 and reported based upon local investigator reads

DRAGON Has Advanced to Part B to Test Proof of Concept for SRK-181 in Overcoming Anti-PD-(L)1 Resistance

- Part B dose selected based upon Part A data & PK modeling: 1500 mg q3w*
 - Estimated to offer drug exposure at levels exceeding those hypothesized as needed for anti-tumor effect based on preclinical data and PK modeling
- Part B encompasses multiple POC cohorts (enrolling up to 40 patients each)
 - Enrolling patients with primary resistance to anti-PD-(L)1 therapy
 - Enriched with solid tumor types for which it is hypothesized there may be higher potential for early efficacy signals based upon translational and preclinical insights
 - Additional Part B cohort of clear cell renal cell carcinoma (ccRCC) being added based on emerging insights, including preliminary data from Part A

*For patients receiving anti-PD-(L)1 therapy dosed at q2w frequency, SRK-181 will be dosed at 1000 mg q2w
NCT04291079 on www.clinicaltrials.gov.

Biomarker Strategies Employed in DRAGON Trial

Multiple tissue-based and circulating biomarker analyses to be evaluated in DRAGON study

Immunophenotyping Assessment of immune landscape

Examples:

- Histochemical characterization tumor immune contexture (e.g. CD8+)
 - Classification of inflamed, excluded or immune desert tumors and tumor nests
 - Ability of SRK-181 to overcome tumor immune exclusion
- Analysis of immune response markers (e.g. PD-L1)
- Changes to intra-tumoral and/or circulating immune cell contexture (MDSC)

TGF β 1 pathway evaluation Assessment of signaling pathway

- Show evidence of the SRK-181 target engagement
 - e.g. circulating TGF β 1 levels
- TGF β pathway modulation:
 - e.g. Histochemical analysis of pSMAD
 - e.g. RNA based TGF β gene signatures and pathway analyses

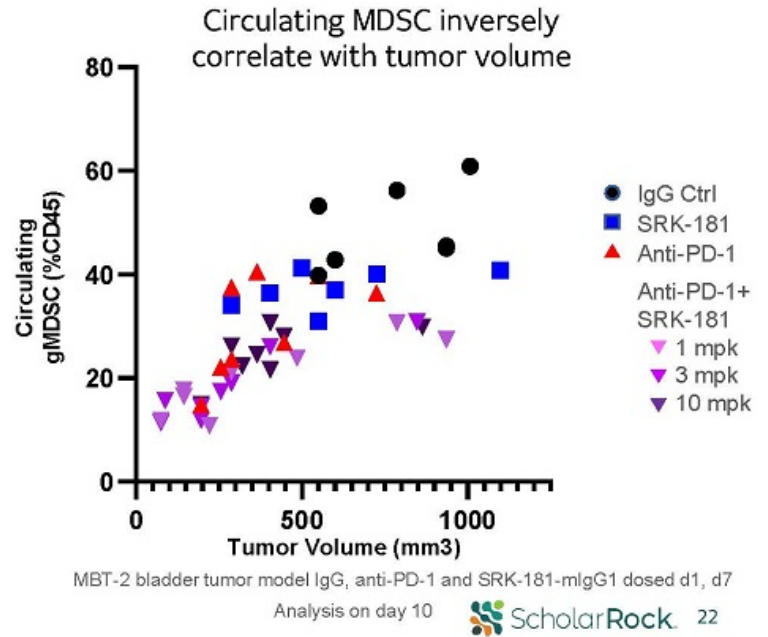
Preclinical data provide scientific rationale to evaluate peripheral samples for evidence of SRK-181 activity

Immunophenotyping Assessment of immune landscape

Measurement of MDSCs in circulation may provide indirect evidence of drug action on the tumor

- Myeloid-derived suppressor cells (MDSCs) have immune suppressive functions
- SRK-181 plus anti-PD1 combination drive MDSC levels down significantly in the tumor microenvironment
- Circulating MDSC levels inversely correlate with tumor volume following SRK-181 and anti-PD1 treatment in MBT-2 tumor model

Both tumoral and circulatory MDSC are being evaluated in the DRAGON study





New Horizons in TGF β Selectivity

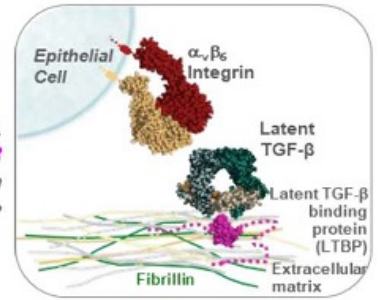


 ScholarRock.

Selectively Targeting Large Latent Complexes To Achieve Context-Dependent TGF β 1 Inhibition

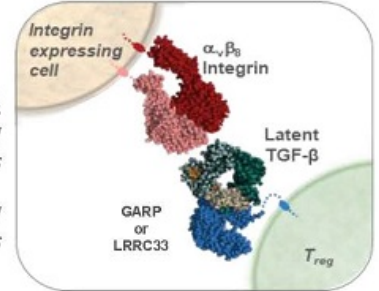
- Large latent complexes present TGF β 1 through covalent interaction with “presenting molecules” which are cell-type specific
 - LTBP1 and LTBP3 present TGF β in connective tissue
 - GARP and LRRC33 present TGF β on the cell surface of immune cells
- Antibodies that *selectively* block TGF β 1 activation in different contexts may allow fine-tuning of therapeutic index
 - LTBP-selective targeting for fibrosis
 - GARP/LLRC33-selective targeting for immunomodulation
- Scholar Rock has identified a portfolio of antibodies that selectively bind TGF β 1 in a context dependent manner

Fibrotic Tissue
LTBP1 and LTBP3 present TGF β 1 in connective tissue



Immune Cells
GARP presents TGF β 1 on Tregs

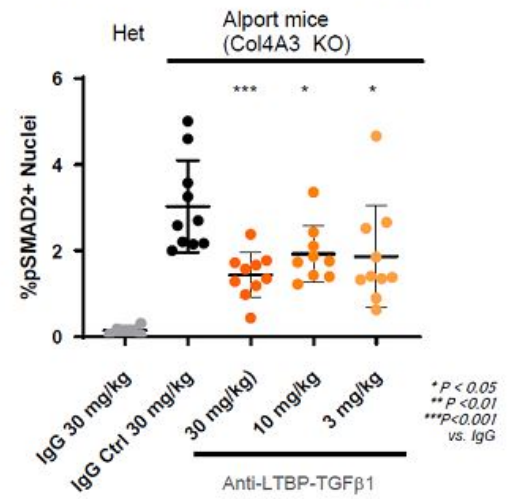
LRRC33 presents TGF β 1 on macrophages



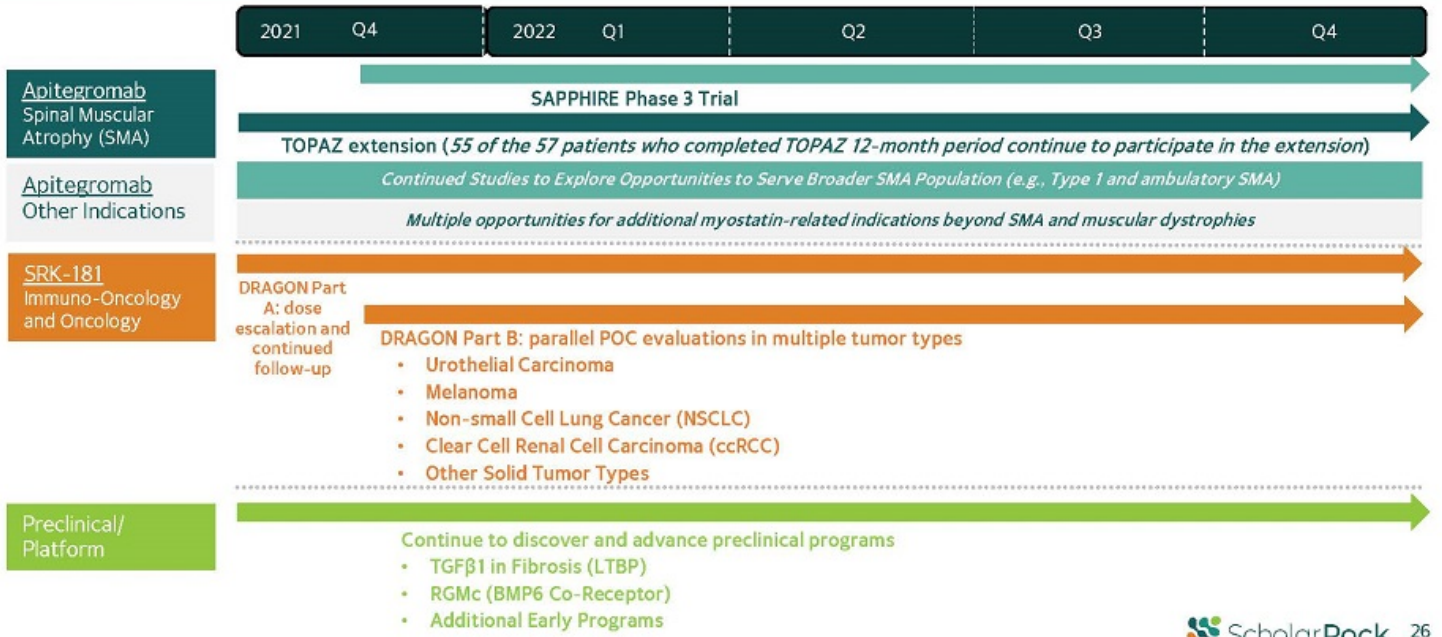
Specificity for LTBP-Selective Context Maintains Anti-Fibrotic Activity

- Antifibrotic efficacy and safety demonstrated in multiple rodent models of kidney fibrosis with context selective LTBP-TGF β 1 antibody
- LTBP-selective inhibition is as effective as context-independent inhibition suggesting that LTBP-drive TGF β 1 is driving fibrosis
- Rat adenine-deficient diet model:
 - Reduction of fibrosis observed via decrease in collagen and hydroxyproline staining
 - Improved kidney function observed via reduction of plasma BUN and creatinine
 - Significant reduction in multiple TGF β related pro-fibrotic gene expression
- Mouse model of Alport's Disease (*Col4A3*^{-/-}):
 - Suppression of SMAD2 phosphorylation; indicative of inhibition of TGF β signaling

Anti-LTBP-TGF β 1 suppresses TGF β 1 signaling in Alport mouse kidney



Portfolio Spanning All Stages of Discovery and Development



Appendix



Apitegromab: Pairing the latent form with important translational insights

Scholar Rock's Guiding Principles for Neuromuscular Indication Selection

Younger population



At least partially intact innervation and no structural muscle abnormalities



Need for increase in fast-twitch muscle fibers



Clinical trial endpoint driven by fast-twitch fiber function



Key Characteristics of Spinal Muscular Atrophy (SMA)

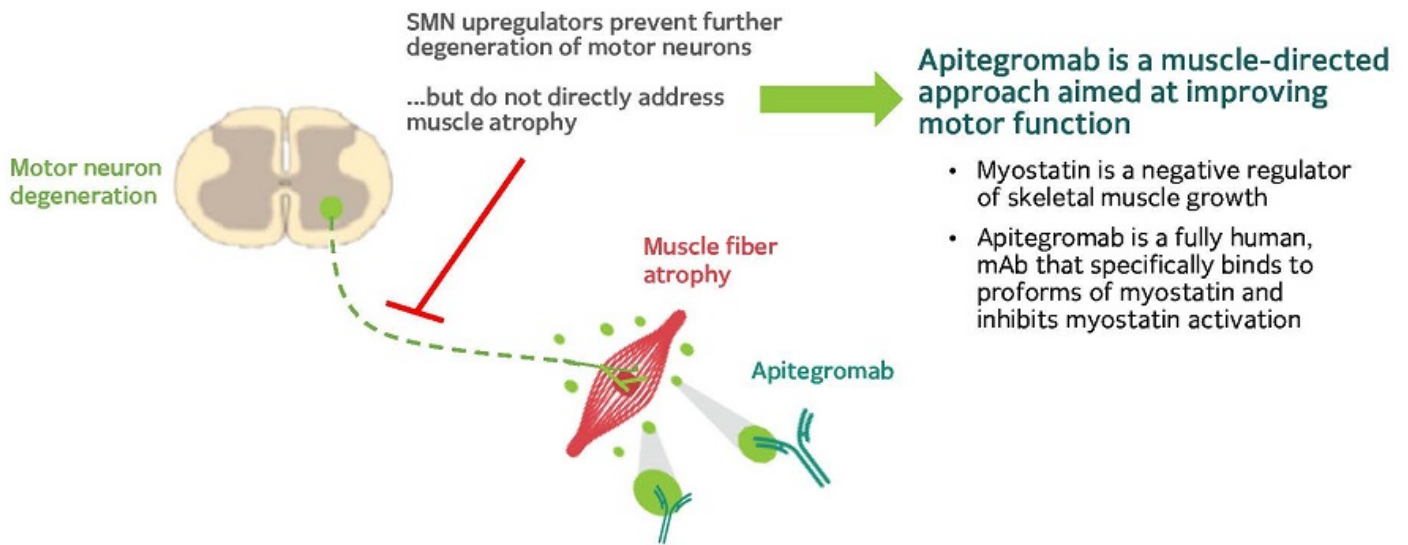
Genetic disorder with onset in childhood

Partial neural connectivity and atrophied muscles that largely retain structural integrity

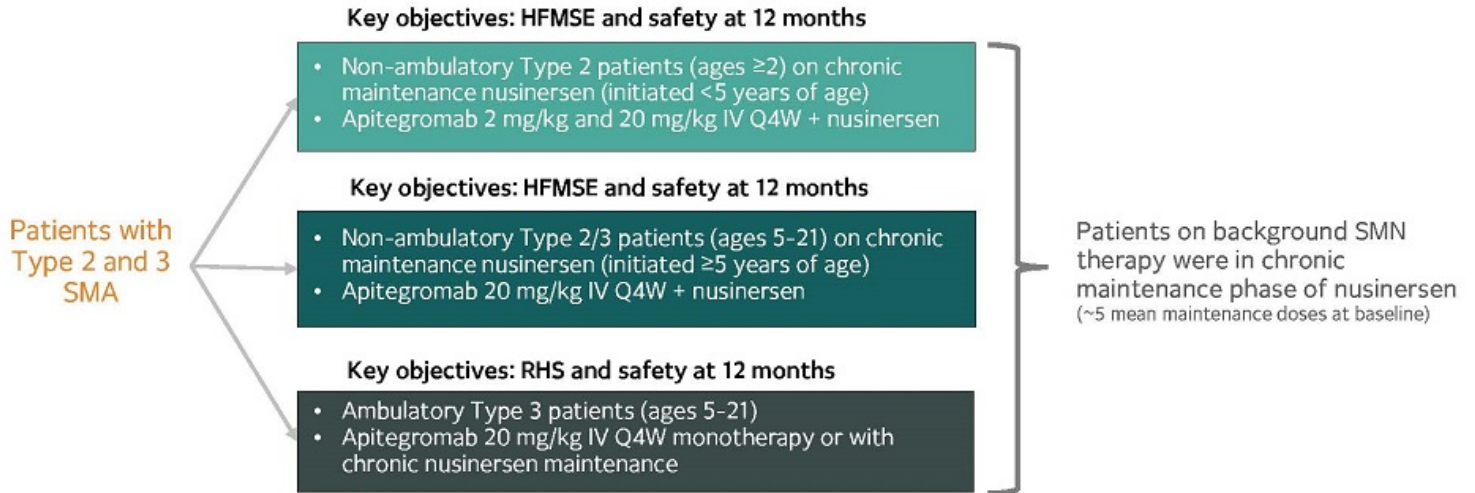
Substantial deficit in fast-twitch fibers

Fast-twitch fiber function has a prominent role in SMA outcome measures

Apitegromab: Muscle-Directed Therapy Aimed at Complementing SMN Upregulators



Adapted from images courtesy of the SMA Foundation



55 of the 57* patients who completed TOPAZ 12-month period continue to participate in the extension

*Excludes one patient from Cohort 1 that discontinued from the trial

Baseline Characteristics

Nusinersen-treated patients well into chronic maintenance phase



	Non-Ambulatory, Ages ≥2 and initiated nusinersen <5 years			Non-Ambulatory, Ages 5-21	Ambulatory, Ages 5-21		
	20 mg/kg +nusinersen	2 mg/kg +nusinersen	Pooled	20 mg/kg +nusinersen	20 mg/kg monotherapy	20 mg/kg +nusinersen	Pooled
N	10	10	20	15	11	12	23
Mean age at baseline (min, max)	3.8 (2, 6)	4.1 (2, 6)	4.0 (2, 6)	11.7 (8, 19)	12.1 (7, 19)	13.1 (7, 21)	12.6 (7, 21)
Mean RHS score (min, max)					47.6 (26, 63)	51.3 (43, 62)	49.6 (26, 63)
Mean HFMSE score (min, max)	23.5 (14, 42)	26.1 (12, 44)	24.8 (12, 44)	22.7 (13, 39)			
Mean # of nusinersen maintenance doses (min, max)	5.4 (3, 8)	5.5 (2, 9)	5.5 (2, 9)	5.1 (2, 9)	N/A	5.6 (2, 8)	N/A
SMN2 Gene Copy* (#, %)							
2	1 (10%)	1 (10%)	2 (10%)		1 (9%)	0 (0%)	1 (4%)
3	8 (80%)	8 (80%)	16 (80%)	11 (73%)	4 (36%)	9 (75%)	13 (57%)
4	0 (0%)	1 (10%)	1 (5%)	2 (13%)	4 (36%)	1 (8%)	5 (22%)
Discontinuation(s)	0	0	0	0	0	1**	1**

*Data not available for all patients

**Patient who discontinued study for reasons unrelated to study drug

HFMSE=Hammersmith Functional Motor Scale Expanded; RHS=Revised Hammersmith Scale

Data on file. Scholar Rock, Inc. Cambridge, MA

Non-Ambulatory Type 2 Cohort: Initiated nusinersen age <5

Apitegromab (20 mg/kg) + nusinersen	n=8
Mean change from baseline in HFMSE (95% CI)	+7.1 (1.8, 12.5)
# (%) patients achieving:	
≥1-pt increase in HFMSE	7/8 (88%)
≥3-pt increase in HFMSE	5/8 (63%)
≥5-pt increase in HFMSE	5/8 (63%)
Baseline characteristics: mean (min, max)	n=10
Age	3.8 (2, 6)
HFMSE score	23.5 (14, 42)
# of nusinersen maintenance doses	5.4 (3, 8)

Sizable increases in HFMSE observed in patients already treated with chronic maintenance nusinersen

- 88% (7/8) improved
- 63% (5/8) with ≥5-point increase
- 38% (3/8) with >10-point increase
- Continuous and durable improvements observed through 12-months of treatment

Non-Ambulatory Type 2/3 Cohort: Initiated nusinersen age ≥ 5



Apitegromab (20 mg/kg) + nusinersen	Per Protocol Population* (n=13)	Intent-to-Treat Population (n=14)
Mean change from baseline in HFMSE (95% CI)	+1.2 (-0.5, 2.9)	+0.6 (-1.4, 2.7)
# (%) patients achieving:		
≥ 1 -pt increase in HFMSE	9/13 (69%)	9/14 (64%)
≥ 3 -pt increase in HFMSE	4/13 (31%)	4/14 (29%)
≥ 5 -pt increase in HFMSE	2/13 (15%)	2/14 (14%)
Baseline characteristics: mean (min, max)	n=15	
Age	11.7 (8, 19)	
HFMSE score	22.7 (13, 39)	
# of nusinersen maintenance doses	5.1 (2, 9)	

Majority of patients improved in HFMSE (despite initiating background nusinersen age ≥ 5)

- $\sim 2/3$ with ≥ 1 -point increase
- $\sim 30\%$ with ≥ 3 -point increase
- Durability of effect observed through 12-months of treatment

*Patient had concomitant exposure to an acetylcholinesterase inhibitor, which was not permitted per the TOPAZ trial protocol
Data on file. Scholar Rock, Inc. Cambridge, MA

Majority of Ambulatory Patients Maintained or Improved in RHS Score from Baseline

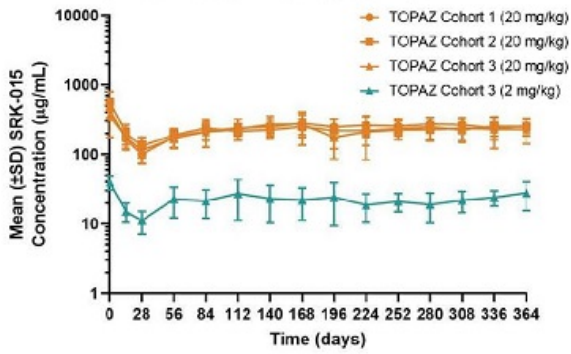
	Apitegromab 20 mg/kg monotherapy	Apitegromab 20 mg/kg + nusinersen
Mean change from baseline in RHS (95% CI)	-0.4 (-3.9, 3.1)	-0.3 (-2.0, 1.4)
# (%) patients achieving:		
≥0-pt increase in RHS	6/11 (55%)	7/12 (58%)
≥1-pt increase in RHS	4/11 (36%)	5/12 (42%)
≥3-pt increase in RHS	3/11 (27%)	2/12 (17%)
Baseline characteristics: mean (min, max)	n=11	n=12
Age	12.1 (7, 19)	13.1 (7, 21)
HFMSE score	47.6 (26, 63)	51.3 (43, 62)
# of nusinersen maintenance doses	n/a	5.6 (2, 8)

Majority maintained or improved

- 57% (13/23) with ≥0-point increase
- 39% (9/23) with ≥1-point increase
- Up to 8-point increase observed
- Results contrast with declines typically observed with natural history of ambulatory patients

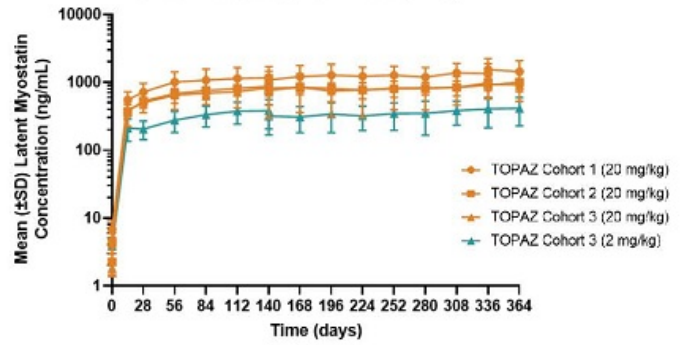
Pharmacokinetic and Pharmacodynamic Data are Supportive of Clinically Observed Effects

Pharmacokinetics* (PK)



- Dose-proportional and sustained drug exposure following chronic administration of apitegromab

Pharmacodynamics (PD)



- Both 2 mg/kg and 20 mg/kg doses yielded high levels of target engagement (>100-fold increase from baseline)
- 20 mg/kg dose offers relatively higher magnitude of target engagement than 2 mg/kg dose

High levels of target engagement achieved by both doses, with relatively higher absolute levels with high dose

*Starting at day 28, measures are pre-dose trough levels
Data on file. Scholar Rock, Inc. Cambridge, MA



Analysis overview*:

- Pooled patients (n =16) of age 2-12 years from the intent-to-treat population of the two non-ambulatory cohorts
 - 1) Nusinersen initiated at age < 5 years: n = 8
 - 2) Nusinersen initiated at age \geq 5 years: n = 8
- 12 months of apitegromab 20 mg/kg as add-on to background nusinersen
- Patients were all in chronic maintenance phase of nusinersen
- HFMSE change from baseline

*Exploratory, post hoc analysis

TOPAZ Age 2-12 Analysis* in Pooled Non-Ambulatory Cohorts

Transformative Potential as Add-on for Apitegromab



Non-Ambulatory Type 2/3 SMA (Apitegromab 20 mg/kg; Intent-to-Treat Population)	Age 2-12 years (n=16)
Mean HFMSE change from baseline (95% CI)	+4.4 (1.3, 7.4)
# (%) patients with ≥ 1 -pt increase in HFMSE	13/16 (81%)
# (%) patients with ≥ 3 -pt increase in HFMSE	9/16 (56%)

- Mean HFMSE increase of 4.4 points, with majority experiencing ≥ 3 -point increases on top of background SMN therapy
- HFMSE gains also notable in subset of individuals in this analysis who had started background nusinersen at age ≥ 5 : 75% (6/8) with ≥ 1 -point increase and 50% (4/8) with ≥ 3 -point increase

* Exploratory, post hoc analysis

Main population

- Age 2-12, non-ambulatory Type 2 and Type 3 SMA
- Chronic maintenance phase of SMN Rx (minimum prior duration of treatment before screening of 10 mo's for nusinersen or 6 mo's for risdiplam)
- Stratified randomization to ensure balanced allocation: 1) age at SMN Rx initiation (age < 5 vs age \geq 5) 2) background SMN Rx (nusinersen vs. risdiplam)

Endpoints

- Primary efficacy: HFMSE
- Add'l efficacy measures: RULM, WHO, other outcome measures
- Safety, PK/PD, ADA

Analysis

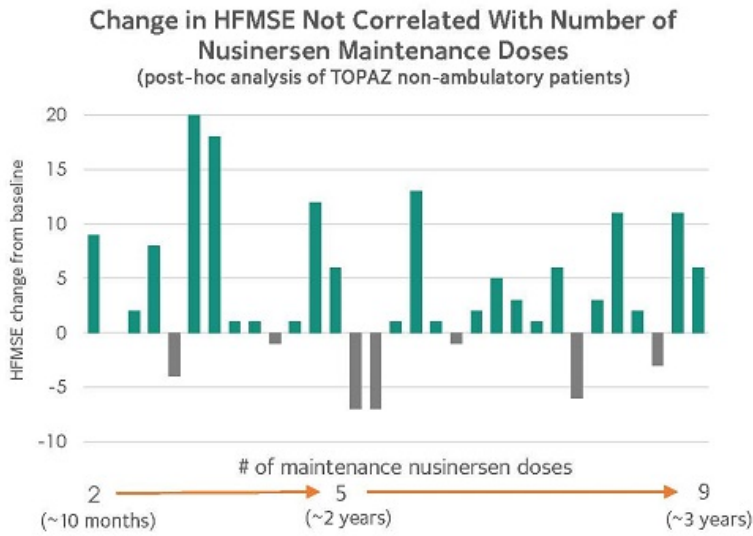
- Topline readout based upon main efficacy population (age 2-12) and focused upon apitegromab 20 mg/kg* vs. placebo
- Interim analysis opportunity when \geq 50% of patients in main efficacy population have completed 12 months

Additional Data Opportunities

- Open-label extension (after patients complete 12-month period); focused upon safety & exploratory longer-term efficacy
- Exploratory population (age 13-21): n=48 (2:1 randomization between apitegromab 20 mg/kg vs placebo, as add-on to background SMN Rx); focused upon safety & exploratory efficacy

*To control type I error caused by multiple comparisons, the efficacy analysis will first compare the apitegromab 20 mg/kg arm against placebo before any testing of apitegromab 10 mg/kg against placebo

Increases in HFMSE Not Correlated with Duration of Prior Nusinersen Treatment



Further data suggesting increases in HFMSE may be attributable to apitegromab

- No correlation between duration of prior nusinersen treatment and change in HFMSE
- Patients in TOPAZ were already in chronic maintenance phase of nusinersen (mean of ~2 years at enrollment)

Data on file. Scholar Rock, Inc. Cambridge, MA


WHO Motor Development Milestone Achievements Further Support Apitegromab's Potential to Improve Motor Function

Non-ambulatory Type 2/3 Patients	Pooled	Initiated nusinersen age <5	Initiated nusinersen age ≥5
# of patients gaining ≥1 WHO motor milestone(s)	7/35	4/20	3/15

Following 12 months of apitegromab treatment...



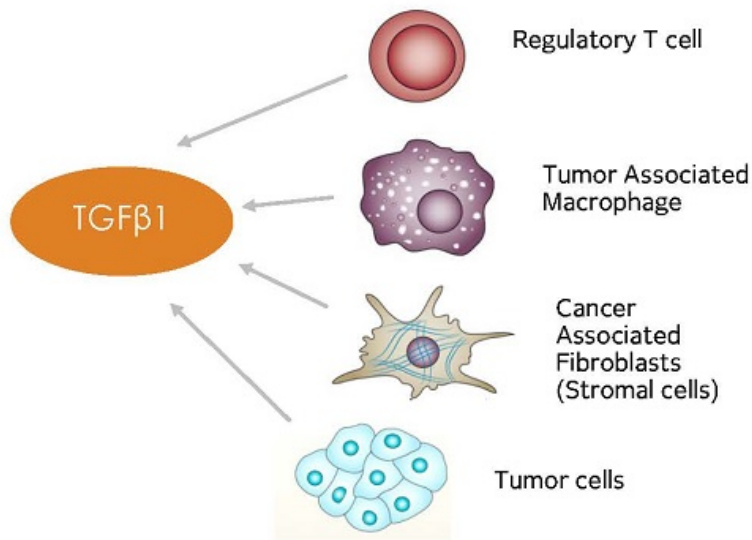
WHO motor milestone analysis included all patients who completed the 12-month treatment period, including 4 patients who missed 3 doses of apitegromab due to COVID-19-related site access restrictions. Median baseline score for both non-ambulatory cohorts was 1.0.

1 patient (initiated nusinersen age ≥5) gained 2 new motor milestones and 1 patient (initiated nusinersen age <5, 20 mg/kg) gained 3 new motor milestones.  41

Pictures are not of patients with SMA and are not meant to be representative of patients with SMA. Data on file. Scholar Rock, Inc. Cambridge, MA.

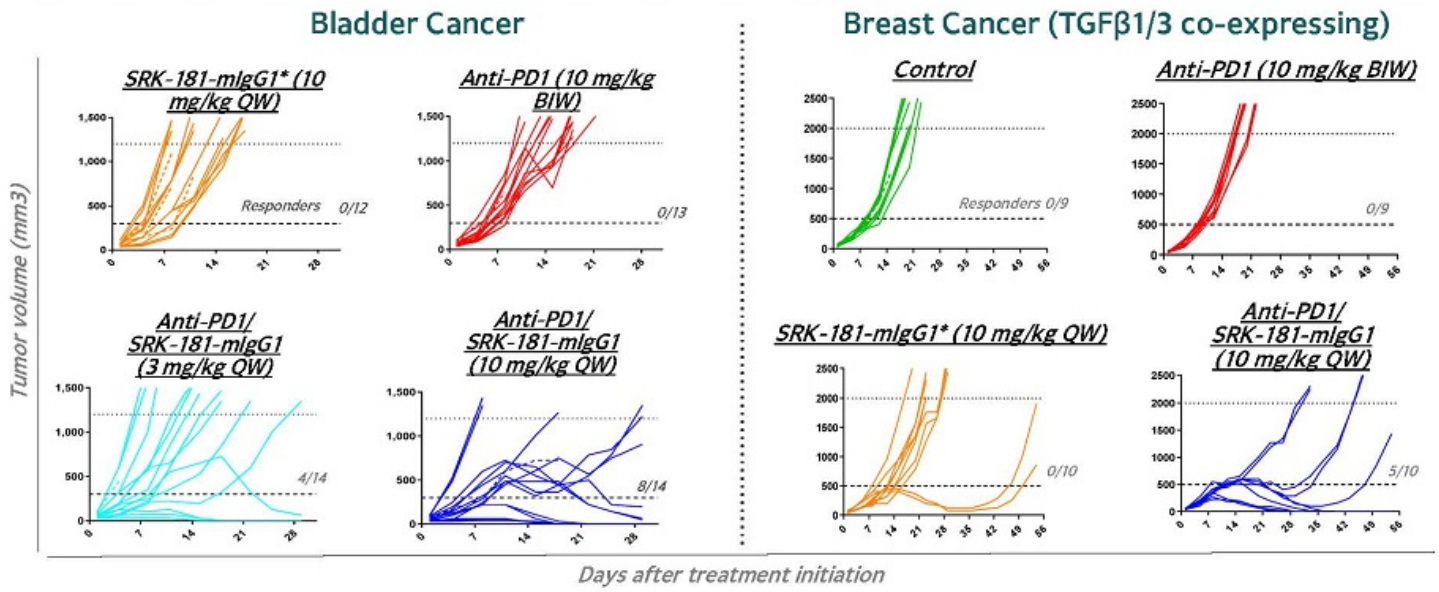
Inhibition of TGFβ1: Multipronged Approach for Immuno-Oncology

TGFβ1 is a key driver of immune system evasion by cancer cells



- Pathway analysis in patient tumors points to TGFβ1 as major determinant of primary resistance to anti-PD-(L)1 therapy
- TGFβ1 creates 'immune excluded' tumor microenvironment

TGFβ1 Blockade with SRK-181-mIgG1 Rendered Preclinical Tumor Models Susceptible to Anti-PD1 Therapy

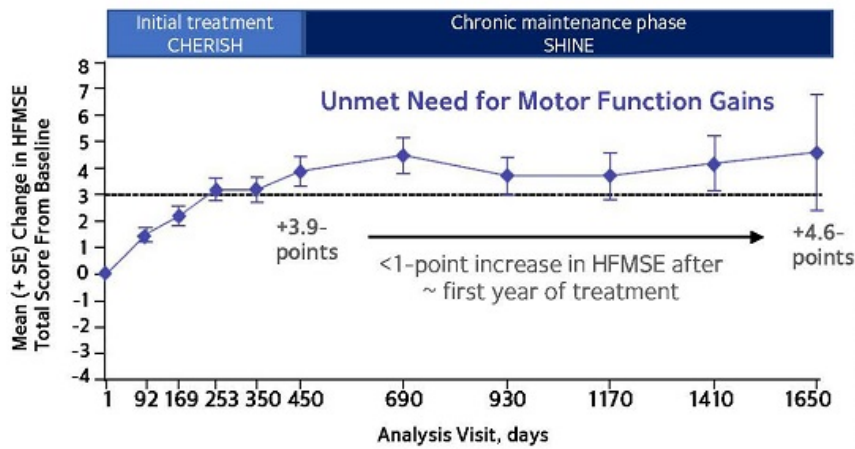


Preclinical data published in *Science Translational Medicine*. Martin CJ, et al. *Sci Transl Med*. 2020 Mar 25;12(536):eaay8456. <https://scholarrock.com/platform/publications/>.

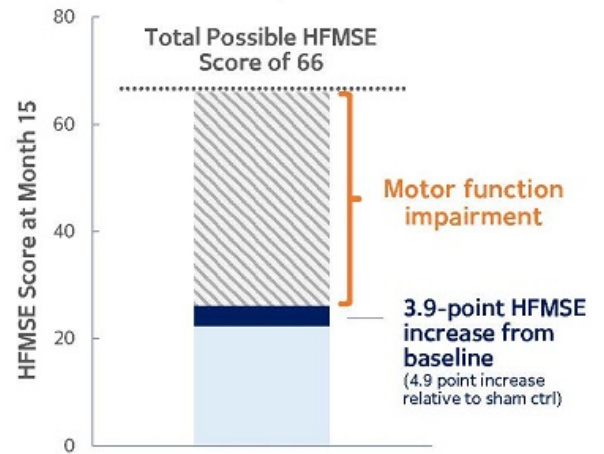
*SRK-181-mIgG1 is the murine version of SRK-181; responder defined as tumor size <25% endpoint volume at study end.

Patients with Type 2 and 3 SMA Continue to Experience Major Functional Deficits Despite Improvement from SMN Therapy*

Plateauing of HFMSE gains apparent following initial treatment effects for nusinersen...



Significant motor function deficits still present...



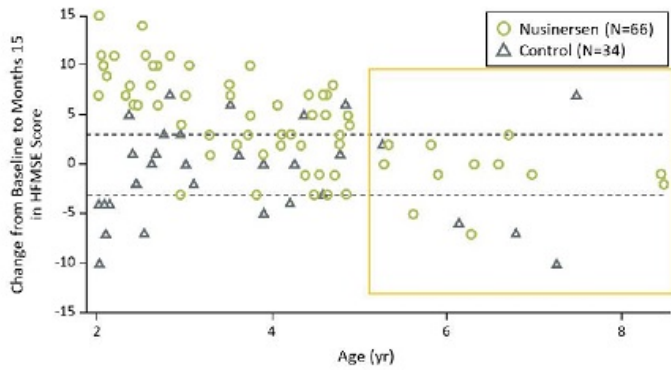
Mean improvement in HFMSE experienced in nusinersen Phase 3 CHERISH trial

Longer-term treatment with nusinersen: results in later-onset spinal muscular atrophy from the SHINE study P.257, World Muscle Society Congress 2020
This third-party information is provided for background only and is not intended to convey or imply a comparison to the TOPAZ clinical trial results.

Non-Ambulatory Type 2/3 SMA:

Majority of Patients Started on SMN Rx After Age 5 Do Not Experience Motor Function Increases*

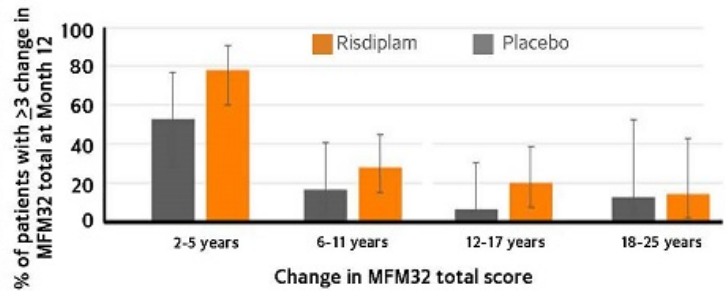
Nusinersen CHERISH Trial in Later-Onset SMA[†]



In patients with later-onset SMA who were age ≥ 5 at screening...

- Primary benefit of nusinersen - stabilization of motor function
- Majority of patients do not experience HFMSE increases

Risdiplam SUNFISH Trial in Later-Onset SMA^{††}



- Low percentage of patients over the age of 5 achieved ≥ 3 -point increase on MFM32 scale, even with risdiplam treatment
- HFMSE secondary endpoint showed a mean 0.58-point improvement over placebo (not statistically significant)

[†]Source: Mercuri E, et.al. Nusinersen versus sham control in later-onset spinal muscular atrophy. *N Engl J Med*. 2018;378:625-635.

^{††}Efficacy and safety of risdiplam (RG7916) in patients with Type 2 or non-ambulant Type 3 spinal muscular atrophy (SMA) Roche/PTC Therapeutics

*This third-party information is provided for background only and is not intended to convey or imply a comparison to the TOPAZ clinical trial results

Safety Results from TOPAZ 12-Month Top-Line Analysis Support Evaluation of Apitegromab in Phase 3 Trial

Treatment-emergent adverse events (TEAEs)	Apitegromab 2 mg/kg (n=10)	Apitegromab 20 mg/kg (n=48)	Total (n=58)
Any TEAE	9 (90.0%)	44 (91.7%)	53 (91.4%)
Any Serious TEAE	1 (10.0%)	4 (8.3%)	5 (8.6%)
Any TEAE leading to study drug discontinuation	0 (0.0%)	1 (2.1%)	1 (1.7%)
Any Grade 3 (severe) or higher TEAE	0 (0.0%)	3 (6.2%)	3 (5.2%)

- **Five most frequently reported TEAEs***: Headache (24%), pyrexia (22%), upper respiratory tract infection (22%), cough (22%), and nasopharyngitis (21%).
- SAEs, Grade 3 AEs and AE leading to early study discontinuation were all assessed by investigators as unrelated to study drug
- **Anti-drug antibodies (ADA)** were present at low titers following apitegromab treatment in 3 out of 58 enrolled patients. No apparent impact on drug exposure was observed and was not associated with any hypersensitivity reactions.

Incidence and severity of AEs were consistent with the underlying patient population and background therapy

*Treatment-emergent adverse events (TEAEs) are defined as AEs that start after the first dose of study drug or start prior to the administration of study drug and worsen in severity/grade or relationship to investigational medication after the administration of study drug.
*TEAE rates are across all patients in TOPAZ trial
Data on file. Scholar Rock, Inc. Cambridge, MA*

Significant Interest in Potential Role of TGFβ Inhibition in Immuno-Oncology

Nature (online), Feb. 14, 2018.

TGFβ attenuates tumour response to PD-L1 blockade by contributing to exclusion of T cells

Sanjeev Mariathasan^{1*}, Shannon J. Turley^{1*}, Dorothee Nickles^{1*}, Alessandra Castiglioni¹, Kobe Yuen¹, Yulei Wang¹, Edward E. Kadel III¹, Hartmut Koeppe¹, Jillian L. Astarita¹, Rafael Cubas¹, Suchit Jhunjhunwala¹, Romain Blanchereau¹, Yagai Yang¹, Yinghui Guan¹, Cecile Chakouni¹, James Zia¹, Yasin Şenbabaoglu¹, Stephen Santoro¹, Daniel Sheinson¹, Jeffrey Hung¹, Jennifer M. Giltrane¹, Andrew A. Pierce¹, Kathryn Mesh¹, Steve Lianogou¹, Johannes Riegler¹, Richard A. D. Carano¹, Pontus Eriksson², Mattias Höglund², Loan Somarriba³, Daniel L. Halligan³, Michiel S. van der Heijden⁴, Yohann Loriot⁵, Jonathan E. Rosenberg⁶, Lawrence Fong⁷, Ira Mellman¹, Daniel S. Chen¹, Marjorie Green¹, Christina Derlet¹, Gregg D. Fine¹, Priti S. Hegde¹, Richard Bourgon¹ & Thomas Powles⁸

February 2019: "GSK and Merck KGaA, Darmstadt, Germany announce global alliance to jointly develop and commercialise M7824, a novel immunotherapy with potential in multiple difficult-to-treat cancers"

- €300 million upfront and up to €3.7 billion total

June 2019: "Merck to Acquire Tilos Therapeutics: Merck Gains Portfolio of Investigational Antibodies Modulating TGFβ"

- \$773 million total potential deal value

Cell

Article

Genomic and Transcriptomic Features of Response to Anti-PD-1 Therapy in Metastatic Melanoma

Authors

Willy Hugo, Jesse M. Zaretsky, Lu Sun, Douglas B. Johnson, Antoni Ribas, Roger S. Lo

Volume 165, Issue 1, 24 March 2016, Pages 35-44

NATURE REVIEWS | CLINICAL ONCOLOGY

TGFβ biology in cancer progression and immunotherapy

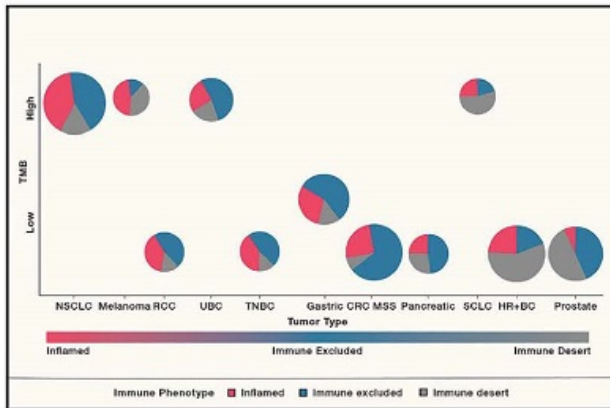
Rik Derynck^{1,2,5}, Shannon J. Turley⁶ and Rosemary J. Akhurst^{2,5}

July 24, 2020: <https://doi.org/10.1038/s41571-020-0403-1>

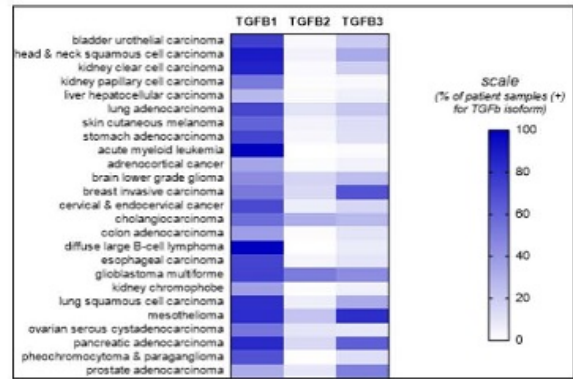
August 2020: "Bristol Myers Squibb Enters Agreement to Acquire Forbuis TGF-beta Program"

Emerging Evidence Implicates TGFβ1 as Driving Primary Resistance to Checkpoint Inhibitors

Substantial % of solid tumors exhibit immune exclusion



Cancer Genome Atlas RNAseq analysis of >10,000 samples spanning 33 tumor types*



Human Tumor Analyses Reveal TGFβ1 as Most Likely Driver of TGFβ Signaling Pathway in Cancers

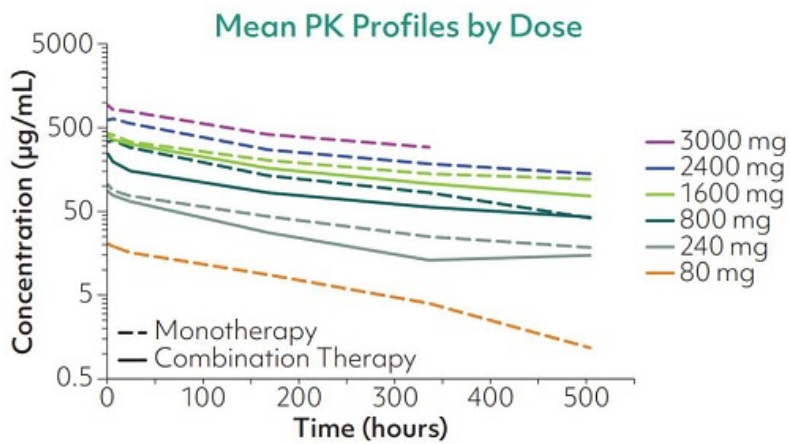
¹Priti H, et al. Top 10 challenges in cancer immunotherapy. *Immunity*. 2020 Jan 14;52(1):17-35. <https://doi.org/10.1016/j.immuni.2019.12.011>.
^{*}Source: National Cancer Institute - Cancer Genome Atlas Program.

DRAGON Part A: Dose Escalation Update and Safety Data

- Median number of prior lines of therapy was 4 (range 1, 9) for Part A1 and 4 (range 2, 6) for Part A2
- No dose-limiting toxicities have been observed with SRK-181 in Part A (as of Oct. 12, 2021), evaluating doses as high as the following thus far:
 - Part A1 : doses up to 3000 mg Q3W and 2000 mg Q2W as a monotherapy
 - Part A2: 1600 mg Q3W in combination with anti-PD-(L)1 therapy
- Most common (>10%) treatment-related TEAEs* of any grade were fatigue, decreased appetite, and nausea (Part A1) and rash maculo-papular (Part A2)

*TEAE = treatment-emergent adverse event

DRAGON Part A: Preliminary Pharmacokinetics (PK) Summary of SRK-181



- SRK-181 displayed typical monoclonal antibody PK characteristics
- Based on a power model, dose-proportional PK was observed for SRK-181
- The $T_{1/2}$ of SRK-181 was 5.4 to 10.7 days