2Q20 Financial Results and Business Progress

August 7, 2020

ScholarRock™

Disclaimers

Various statements in this presentation concerning Scholar Rock's future expectations, plans and prospects, 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 its product candidates, its disease indication selection and timing for such selection, the ability of SRK-015 to affect the treatment of patients suffering from Spinal Muscular Atrophy (SMA) either as a monotherapy or in conjunction with the current standard of care, and the ability of SRK-181 to affect the treatment of cancer patients in a manner consistent with preclinical data constitute forward-looking statements for the purposes of the safe harbor provisions under The Private Securities Litigation Reform Act of 1995. The use of words such as "may," "might," "will," "should," "expect," "plan," "anticipate," "believe," "estimate," "target," "project," "intend," "future," "potential," or "continue," and other similar expressions are intended to identify such forward-looking statements. Actual results may differ materially from those indicated by these forward-looking statements as a result of various important factors, including, without limitation, Scholar Rock's ability to provide the financial support and resources necessary to identify and develop multiple product candidates on the expected timeline, competition from others developing products for similar uses, the preliminary nature of interim clinical data, 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 to supply any clinical trials, and 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 as well as those risks more fully discussed in the section entitled "Risk Factors" in the Quarterly Report on Form 10-Q for the quarter ended June 30, 2020, which is on file with the Securities and Exchange Commission, 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. Scholar Rock explicitly disclaims any obligation to update any forward-looking statements unless required by law.

ScholarRock™

Newest Members of Highly Experienced Leadership Team

TONY KINGSLEY, MBA
President & CEO

Strategic, operational, and commercial leader

- Joined Scholar Rock's Board of Directors in May 2020
- President & CEO of Taris Bio
- President & COO of The Medicines Company
- EVP at Biogen, led global commercial operations

TED MYLES, MBA
CFO & Head of Business Operations

Financial and operational executive

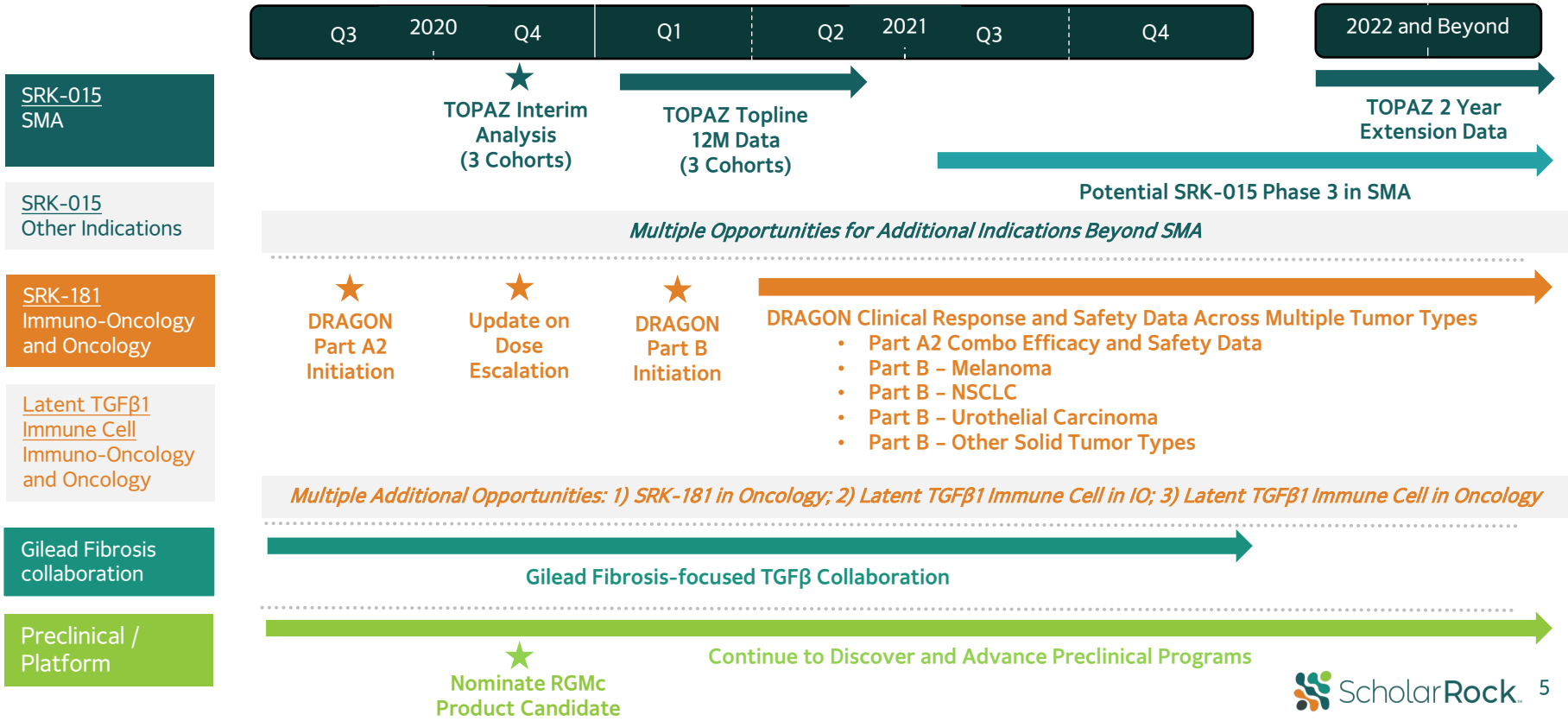
- Served on Scholar Rock's Board of Directors for nearly 2 years
- CFO & COO of AMAG Pharmaceuticals, Inc.
- CFO & COO of Ocata Therapeutics
- CFO & Vice President of Operations at PrimeraDx, Inc.

Proprietary platform has produced multiple programs with significant therapeutic potential

Two most advanced programs, SRK-015 and SRK-181, are advancing quickly and address markets that are well developed and growing

Multiple programs and multiple anticipated milestones offer near- and long-term value inflection points and strategic optionality

Differentiated Pipeline with a Series of Anticipated Milestones



Review of Clinical Programs: SRK-015 and SRK-181

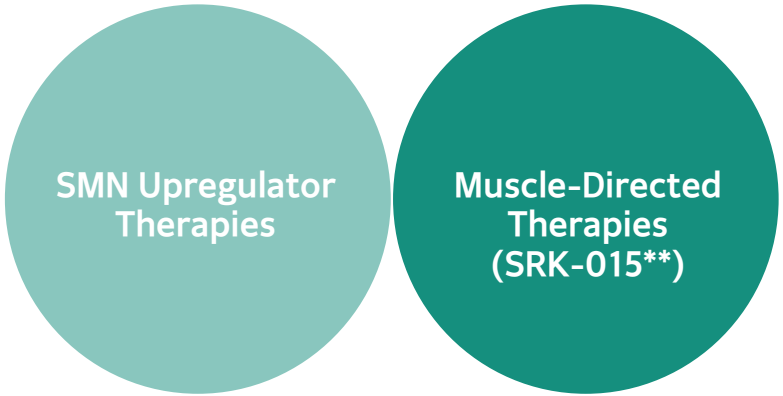
Yung Chyung, MD

Chief Medical Officer

SMA Treatment Landscape: The Shifting Focus to Muscle-Directed Therapies

Muscle-directed therapies needed to complement disease-stabilizing benefits of SMN upregulators*

Overall prevalence of patients with SMA 30,000-35,000 in U.S. and Europe

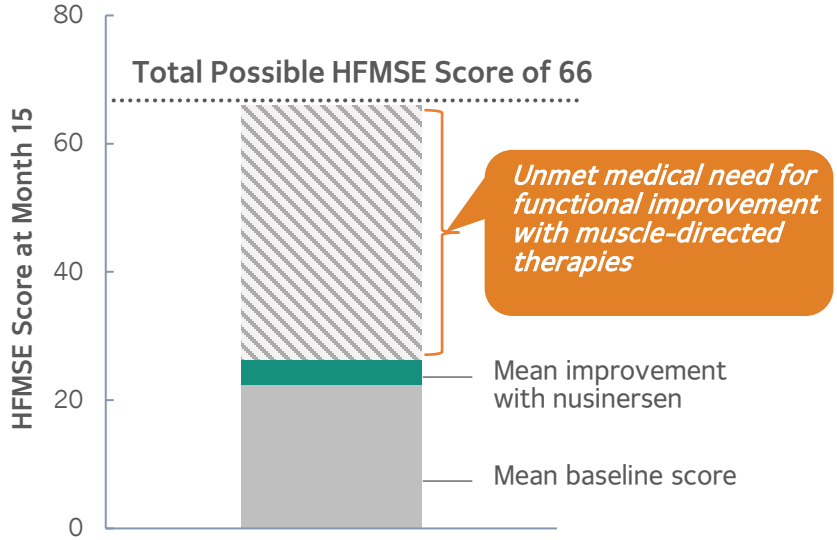


Address SMN deficiency to prevent further motor neuron deterioration

Act directly on muscle with aim to improve motor function

Muscle function in SMA (human)

Hammersmith Functional Motor Scale Expanded (HFMSE)

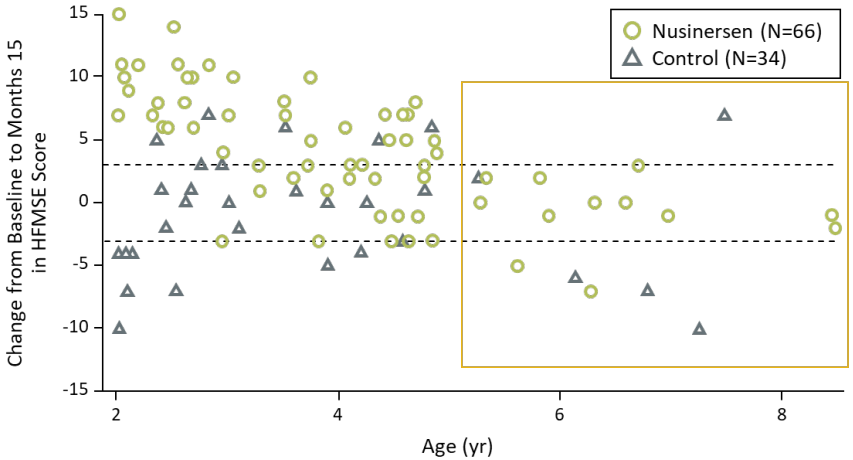


†*Mean improvement in HFMSE score experienced by patients with later-onset SMA in the Phase 3 CHERISH clinical trial of nusinersen*

SMN = survival motor neuron.
**Also referred to as SMN correctors.*
*** SRK-015 is an investigational therapy under development.*
†*Source:* Mercuri E, et.al. Nusinersen versus sham control in later-onset spinal muscular atrophy. *N Engl J Med.* 2018;378:625-635.

Later-Onset SMA: High Unmet Need for Muscle-Directed Therapy to Complement SMN Upregulator Therapy

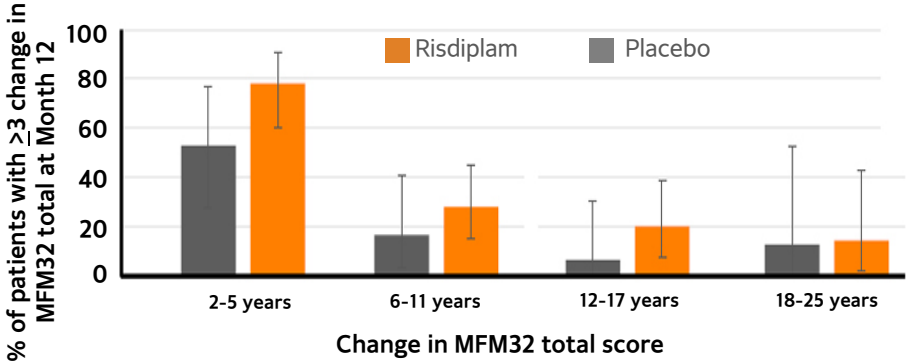
Nusinersen CHERISH Trial in Later-Onset SMA†



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

- Primary benefit of nusinersen - stabilization of motor function
- Attainment of ≥3-point increase - rare (<15% of patients) even with nusinersen treatment

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

Progress on Path Towards Investigating SRK-015's Therapeutic Potential in SMA

Strong translational rationale for investigating myostatin blockade in SMA	✓
Therapeutic effects in SMA preclinical mouse model	✓
Phase 1 trial in adult healthy volunteers demonstrated: • Initial safety • PK profile supporting every 4-week dosing regimen • PD data confirming robust target engagement	✓
Phase 2 TOPAZ trial showed: • Preliminary PD analysis demonstrates target engagement in patients with SMA	✓
Phase 2 TOPAZ interim analysis to evaluate efficacy and safety in SMA	*Results anticipated 4Q20*

Sources: Poster presentations at various scientific congresses: Cure SMA Annual Conference (June 2020), MDA Clinical and Scientific Conference (March 2020), World Muscle Society Congress (October 2019). https://scholarrock.com/platform/publications/.

TOPAZ SRK-015 Phase 2 Trial Design

Interim Efficacy and Safety Results Expected 4Q20; Top-line 12-Month Data 1H21

	Cohort 1	Cohort 2	Cohort 3
Design	• N= 23*; ages 5-21 • Open-label, single-arm • 20 mg/kg SRK-015 IV Q4W • 12-month treatment period	• N= 15; ages 5-21 • Open-label, single-arm • 20 mg/kg SRK-015 IV Q4W • 12-month treatment period	• N= 20; ages ≥2 • Double-blind, randomized (1:1) to 2 mg/kg or 20 mg/kg SRK-015 IV Q4W • 12-month treatment period
Patients	• Ambulatory Type 3 SMA • Receiving treatment with approved SMN upregulator or as monotherapy	• Type 2 or non-ambulatory Type 3 SMA • Receiving treatment with approved SMN upregulator	• Type 2 SMA • Initiated treatment with approved SMN upregulator before age 5
Primary Objectives	• Safety • Mean change from baseline in RHS	• Safety • Mean change from baseline in HFMSE	• Safety • Mean change from baseline in HFMSE

We believe SRK-015 has the potential to be backbone therapy to all SMN upregulators

HFMSE=Hammersmith Functional Motor Scale Expanded; RHS=Revised Hammersmith Scale.
**Baseline demographics presented as part of AAN virtual platform (May 2020).* https://scholarrock.com/platform/publications/.

Each Cohort Represents Important POC Opportunity With Significant Potential

	Efficacy – Therapeutic Goals			Safety Goals	Efficacy signal enables investigation of SRK-015's broader potential
Cohort 1	**RHS:** Absolute increase in mean change from baseline	**RHS:** Substantial % of patients attain ≥3-point increase	**Additional outcomes:** timed motor tests	No significant safety signals	• Broader age range • Any SMN upregulator • Monotherapy in some settings • Additional neuromuscular indications
Cohort 2	**HFMSE:** Absolute increase in mean change from baseline	**HFMSE:** Substantial % of patients attain ≥3-point increase	**Additional outcomes**: RULM, WHO motor developmental milestones	No significant safety signals	• Broader age range • Any SMN upregulator • Additional neuromuscular indications
Cohort 3	**HFMSE:** Substantial improvement in mean change from baseline	Explore potential differentiation (e.g. timing to onset of therapeutic effect) between high dose and low dose arms	**Additional outcomes:** RULM, WHO motor developmental milestones	No significant safety signals	• Any SMN upregulator • Additional early intervention settings (Type 1 and pre-symptomatic) • Additional neuromuscular indications

SRK-181 Has Potential to Increase Response and Be Backbone Therapy to All Checkpoint Inhibitors

Roche

EMD Serono

MERCK

Current Checkpoint Inhibitor Market: $25B+*

Pfizer

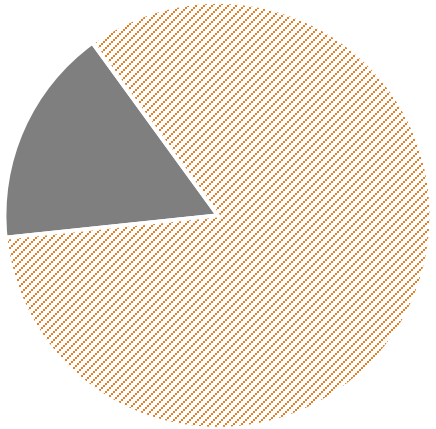
=

SANOFI REGENERON

~20% of patients respond to checkpoint inhibitors†

Bristol Myers Squibb™

AstraZeneca



- Current CPIs
- Potential with increased response rates

Significant Unmet Potential to Increase Response to Checkpoint Inhibitors (CPIs)

*Source: Company information, Wall Street research, Evaluate Pharma.
†Source: Carretero-Gonzalez A, et al. *Oncotarget*. 2018;9:8706-8715. Meta-analysis of 12 randomized trials with control arm or adequate safety profile (includes nivolumab, pembrolizumab, and atezolizumab),

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 Castiglioni[1], Kobe Yuen[1], Yulei Wang[1], Edward E. Kadel III[1], Hartmut Koeppen[1], Jillian L. Astarita[1], Rafael Cubas[1], Suchit Jhunjhunwala[1], Romain Banchereau[1], Yagai Yang[1], Yinghui Guan[1], Cecile Chalouni[1], James Ziai[1], Yasin Şenbabaoğlu[1], Stephen Santoro[1], Daniel Sheinson[1], Jeffrey Hung[1], Jennifer M. Giltnane[1], Andrew A. Pierce[1], Kathryn Mesh[1], Steve Lianoglou[1], Johannes Riegler[1], Richard A. D. Carano[1], Pontus Eriksson[2], Mattias Höglund[2], Loan Somarriba[3], Daniel L. Halligan[3], Michiel S. van der Heijden[4], Yohann Loriot[5], Jonathan E. Rosenberg[6], Lawrence Fong[7], Ira Mellman[1], Daniel S. Chen[1], Marjorie Green[1], Christina Derleth[1], Gregg D. Fine[1], Priti S. Hegde[1], Richard Bourgon[1] & Thomas Powles[8]

Article

Cell

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

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

NATURE REVIEWS | CLINICAL ONCOLOGY

TGFβ biology in cancer progression and immunotherapy

Rik Derynck[1,2,3]✉, Shannon J. Turley[4]✉ and Rosemary J. Akhurst[2,3]✉

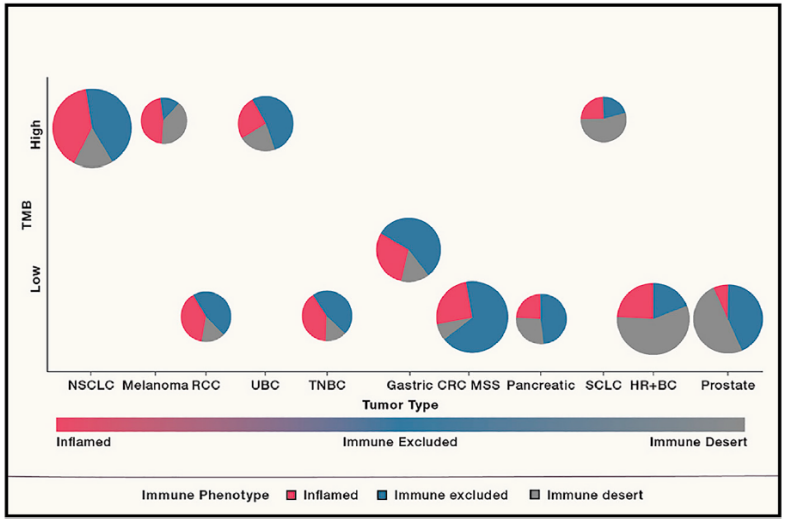
July 24, 2020: https://doi.org/10.1038/ s41571-020-0403-1

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

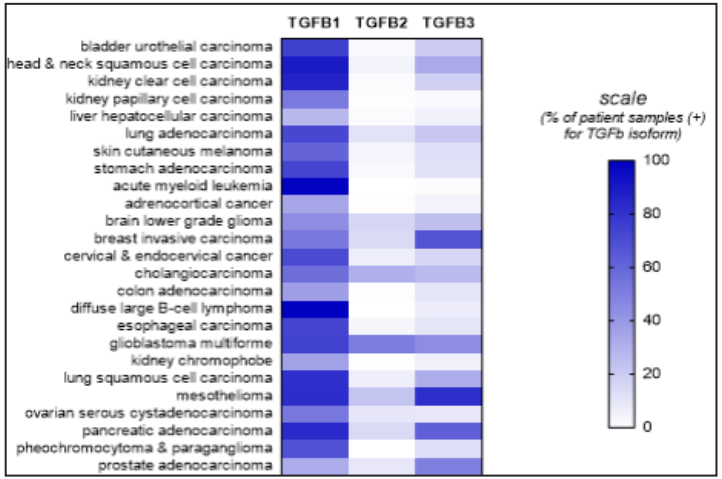
- $773 million total potential deal value

Broad Potential for TGFβ Blockade Across Many Solid Tumors

Substantial proportion of solid tumors exhibit immune exclusion†



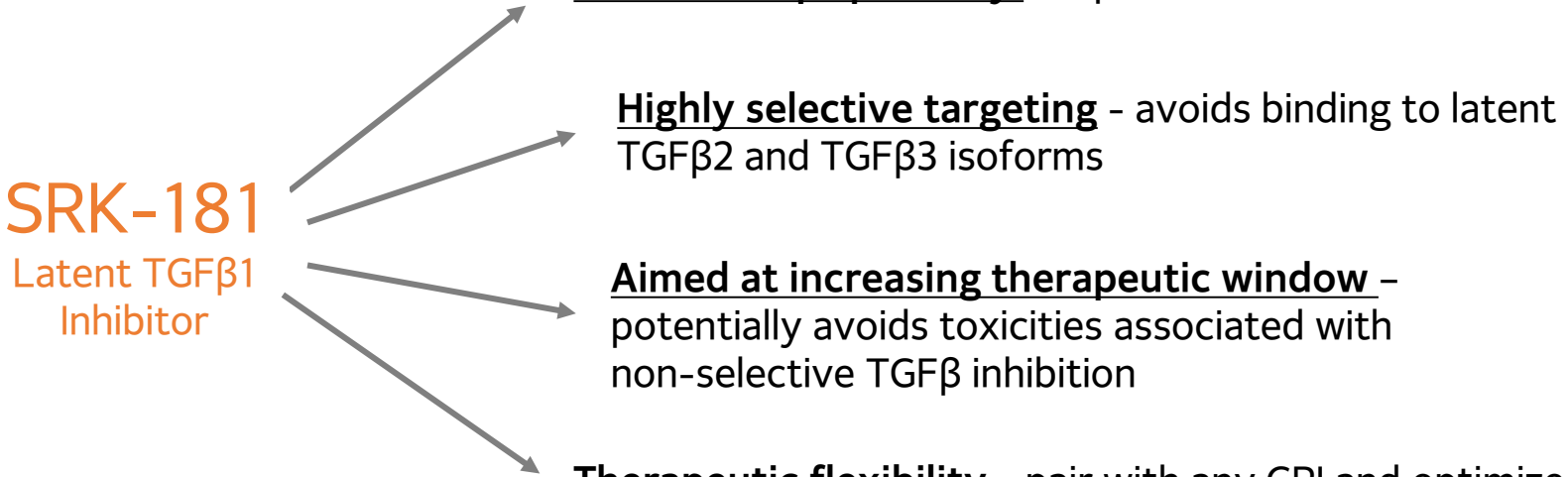
Cancer Genome Atlas RNAseq analysis of >10,000 samples spanning 33 tumor types*



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

*Source: National Cancer Institute - Cancer Genome Atlas Program.
†Priti 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.

SRK-181: Unique TGFβ1-Selective Approach to Overcoming Checkpoint Inhibitor Resistance



SRK-181: Therapeutic Rationale Continues to Strengthen

EVIDENCE TO DATE

Increasing evidence implicating TGFβ1's pivotal role in CPI resistance	✓ TGFβ1 implicated in immune excluded tumor phenotype; poor CPI responses ✓ TGFβ1 expression and immune exclusion broadly observed across solid tumors ✓ Merck KGaA/GSK's bintrasfusp alfa (M7824) showed encouraging long-term survival potential in NSCLC*
SRK-181: potential for robust blockade of TGFβ1 pathway	✓ Nonselective TGFβ inhibition associated with significant tox; constrains dosing ✓ SRK-181: highly selective inhibitor of latent TGFβ1 activation with minimal or no binding to latent TGFβ2/3 isoforms ✓ SRK-181 did not lead to cardiac or other toxicities in 4-week GLP nonclinical toxicology studies
Significant anti-tumor efficacy in preclinical tumor models	✓ SRK-181 evaluated in 3 preclinical syngeneic tumor models aimed at emulating primary resistance to CPI in humans ✓ Treatment with SRK-181 combined with CPI led to significant impact on anti-tumor responses and survival rates in preclinical models†

*Presented at ASCO 2020. Bintrasfusp alfa (M7824) is a bifunctional protein comprised of anti-PD-L1 and TGFβ trap

† 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.

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

Update on dose escalation expected in 4Q20; clinical response and safety data expected in 2021

SRK-181:
selective inhibitor of TGFβ1 activation

→

Part A

Part A1:
- SRK-181 as a single agent
- Modified 3+3 dose escalation
- Assess SRK-181 dose range of 80-2400 mg (avg weight 80kg)

Part A2:
- SRK-181 with approved anti-PD-(L)1
- 3+3 dose escalation
- Treat with same anti-PD-(L)1 as previously given with no response

→

Part B

- SRK-181 in combo with approved anti-PD-(L)1 therapy
- 4 parallel cohorts – each will enroll up to 40 patients
- Target indications expected to include NSCLC, urothelial carcinoma, melanoma, amongst other solid tumor types
- Treat with same anti-PD-(L)1 as previously given with no response

- Open-label, dose escalation, and dose expansion clinical trial
- Evaluate the efficacy, safety/tolerability, and PK/PD of SRK-181 in combination with approved anti-PD-(L)1 therapy
- Patients with locally advanced or metastatic solid tumors that exhibit primary resistance to anti-PD(L)1 therapy
- Lack of response characterized as stable or progressive disease following ≥3 cycles of anti-PD-(L)1 therapy either alone or in combination with chemotherapy

NCT04291079 on www.clinicaltrials.gov.

DRAGON Part A: Progressing Quickly to Evaluation of SRK-181 with Anti-PD-(L)1 Therapy

DRAGON Part A1

- SRK-181 as a single agent
- Modified 3+3 dose escalation
- Assess SRK-181 dose range of 80-2400 mg (avg weight 80kg)

Safety and PK Data as Single-Agent

- Enables progression to evaluation of combination treatment

DRAGON Part A2

- SRK-181 with approved anti-PD-(L)1
- 3+3 dose escalation
- Focus on patients with primary resistance to single-agent anti-PD-1 or anti-PD-L1
- Treat with same anti-PD-(L)1 as previously given with no response

Potential for Early Efficacy Signals

- Anti-tumor response from combination treatment in individual patients would be unexpected given prior resistance to anti-PD-(L)1 therapy

Expect to advance to Part A2 in 3Q20; update on dose escalation expected in 4Q20

NCT04291079 on www.clinicaltrials.gov.

DRAGON Part B: Multiple Opportunities for Efficacy Signals

DRAGON Part B

- Study population focused on patients already shown to have primary resistance to single-agent CPI
- 4 parallel cohorts; each to enroll up to 40 patients
  - **NSCLC:** SRK-181 + pembrolizumab
  - **Urothelial carcinoma**: SRK-181 + pembrolizumab
  - **Melanoma**: SRK-181 + pembrolizumab*
  - **Additional tumor types**: SRK-181 + anti-PD-(L)1 therapy for which patient experienced primary resistance

Potential for Rapid Path to Proof-of-Concept

- Anti-tumor response and safety with combination treatment
  - Response in individual patients would be unexpected given prior resistance to anti-PD-(L)1 therapy
  - Evaluation of patients with stable or progressive disease
- Ability to evaluate response across multiple tumor types
- Patient population with high unmet medical need
  - Strong proof-of-concept signal could support efficient registrational path

DRAGON Part B initiation planned 1Q21; anti-tumor and safety data expected starting in 2021

* Planning to open eligibility to patients with history of primary resistance to either pembrolizumab or nivolumab
NCT04291079 on www.clinicaltrials.gov.

2Q20 Financial Results

Ted Myles
CFO & Head of Business Operations

2Q20 Financial Update (GAAP)

Revenues

- Revenues of $3.9 million
- Related to the Gilead fibrosis-focused collaboration

Operating Expenses

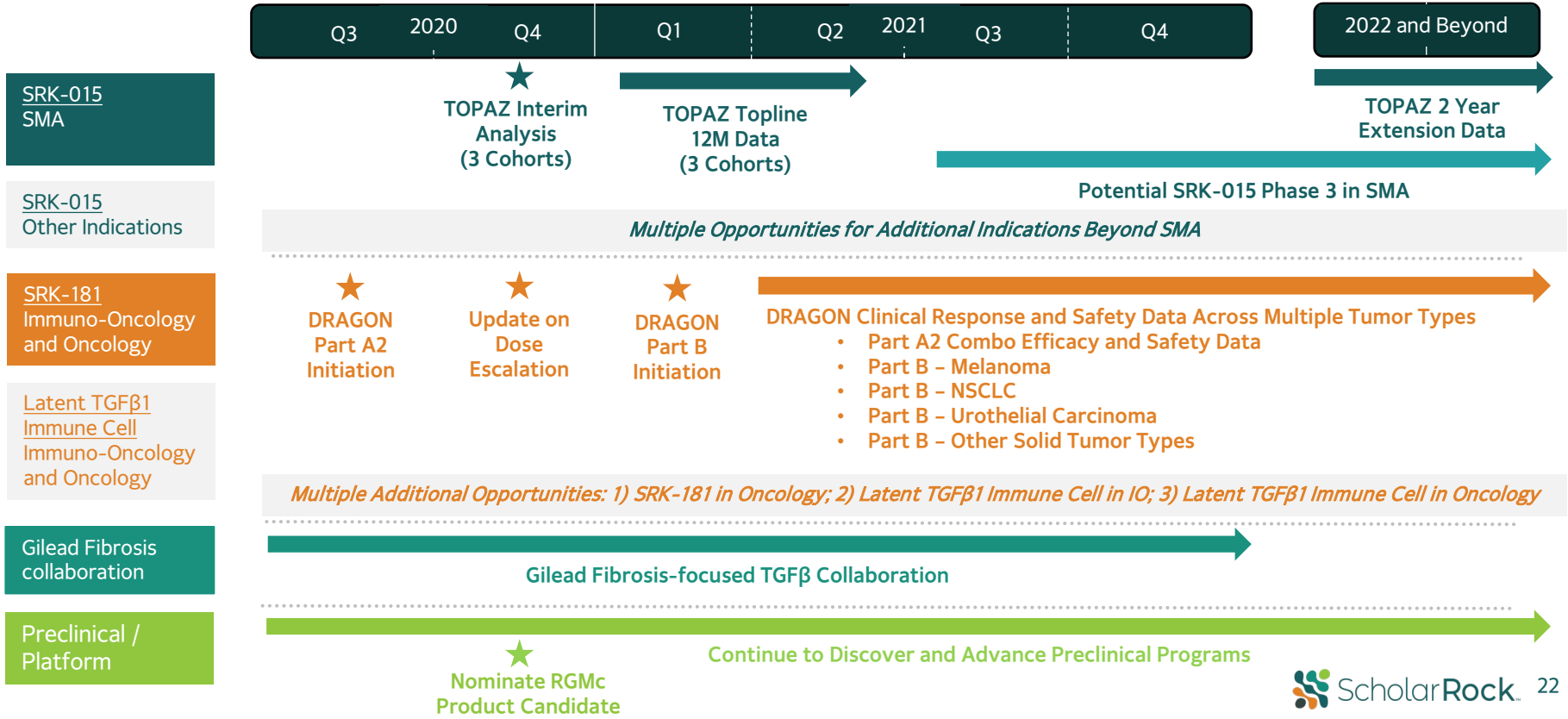
- R&D expense of $17.0 million
  - Y/Y increase due to acceptance of Specifica, Inc. antibody display library, SRK-015 TOPAZ Phase 2 trial, personnel-related costs
- G&A expense of $6.4 million
  - Y/Y increase due to personnel-related costs and professional services

Net Loss

- $19.3 million or $0.65 per share

Ended June 30, 2020 with $141M in cash, cash equivalents, and marketable securities

Differentiated Pipeline with a Series of Anticipated Milestones

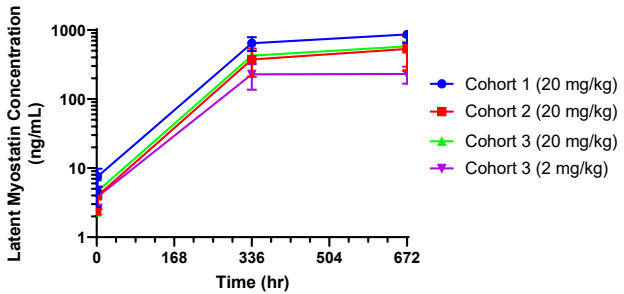


Appendix

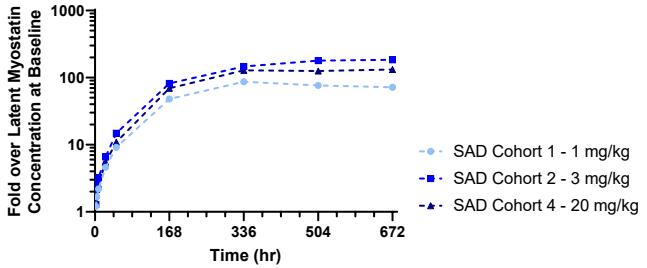
ScholarRock™

Preliminary TOPAZ Biomarker Data Provide First Demonstration of Target Engagement in Patients with SMA

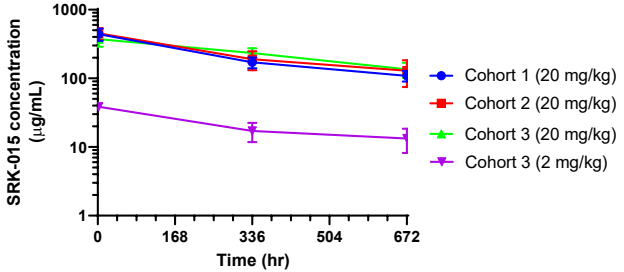
Latent Myostatin Change Over Baseline in SRK-015 TOPAZ Trial



Latent Myostatin Change Over Baseline in Phase 1 HV Trial



Preliminary TOPAZ Phase 2 Pharmacokinetic (PK) Data



Robust Target Engagement Observed

- ~100-fold increases in serum latent myostatin levels following single 20 mg/kg dose in all cohorts of TOPAZ
- Confirms presence of latent myostatin in patients with SMA

Well-Behaved, Linear PK Profile

- Minimal variability across TOPAZ cohorts
- Dose proportional increase in serum drug exposure between low (2 mg/kg) and high (20 mg/kg) doses

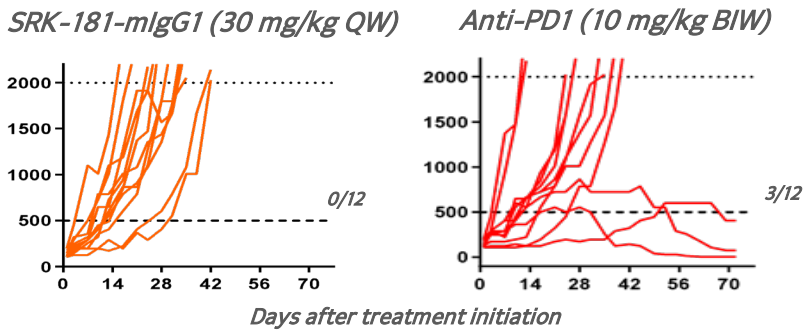
Preliminary PK/PD results include data from 29 patients (12 in Cohort 1, 8 in Cohort 2, and 9 in Cohort 3).
Source: Poster presentation at the MDA Clinical and Scientific Conference (March 2020). https://scholarrock.com/platform/publications/.

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

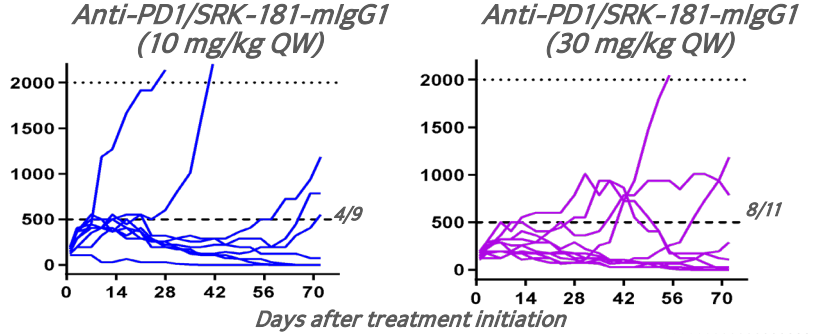
Melanoma (Cloudman S91) model: Combination treatment led to tumor regression and survival benefit

Similar results in bladder (MBT2) and breast (EMT6) preclinical tumor models

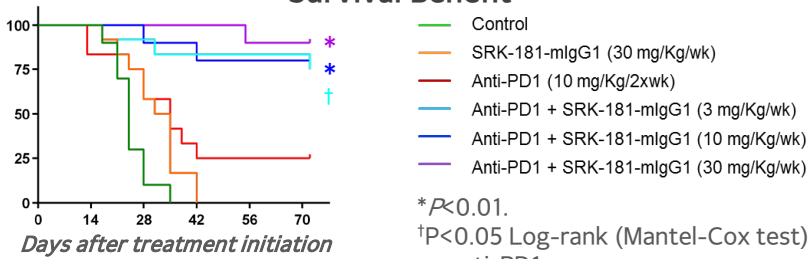
Tumor Regression: Monotherapy



Tumor Regression: Combination Therapy



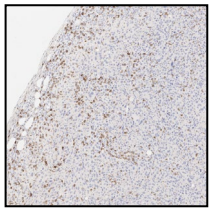
Survival Benefit



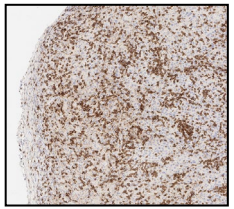
*$P<0.01$.
†P<0.05 Log-rank (Mantel-Cox test) vs anti-PD1.

Overcoming immune exclusion

Anti-PD1



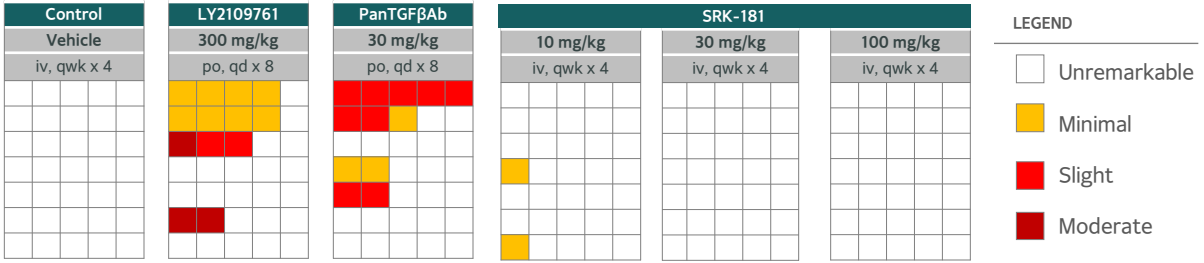
Anti-PD1/ SRK-181-mIgG1 led to influx of CD8+ cells in preclinical bladder tumor model



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
Valvulopathy
Atrium—Mixed cell infiltrate
Myocardium—Degeneration/necrosis
Myocardium—Hemorrhage
Myocardium—Miced 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 data†
- 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.
*Source: 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 I kinase inhibitor in Fischer 344 rats and beagle dogs. *J Clin Pract*. 2014: 4:3.