

Worldwide License and Collaboration Agreement with Roche for camonsertib (RP-3500)

Virtual Investor Update
June 1, 2022



Today's agenda

Brief introduction

Lloyd M. Segal – President & CEO, Repare Therapeutics

Transaction overview & financial terms

Kim Seth – EVP & Head of Business and Corporate Development

Steve Forte – EVP & CFO

Strategic perspective

Lloyd M. Segal – President & CEO, Repare Therapeutics

Q&A

Repare participants on today's call



Lloyd M. Segal
President & CEO



Kim Seth, PhD
EVP & Head of Business
and Corporate Development



Steve Forte
Chief Financial Officer

Disclaimer

Statements contained in this presentation regarding matters that are not historical facts are “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995, as amended and securities law in Canada. Words such as “anticipates,” “believes,” “expects,” “intends,” “plans,” “potential,” “projects,” “would” and “future” or similar expressions are intended to identify forward-looking statements. Each of these forward-looking statements involves substantial risks and uncertainties that could cause actual results to differ significantly from those expressed or implied by such forward-looking statements. Forward-looking statements contained in this presentation include, but are not limited to, statements regarding the initiation, timing, progress and results of our current and future preclinical studies and clinical trials, including specifically our clinical trials of RP-3500 and RP-6306; the expected timing of program updates and data disclosures; the timing of filing INDs and other regulatory documents, including the initiation of IND-enabling studies for our Polθ inhibitor program; the timing and likelihood of seeking regulatory approval for our product candidates; the competitive landscape for our product candidates; our ability to identify and develop additional product candidates using our SNIPRx platform; and our estimates regarding expenses, future revenue, capital requirements, cash runway and needs for additional financing.

These forward-looking statements reflect our current beliefs and expectations. Many factors may cause differences between current expectations and actual results, including the duration and impact of the ongoing COVID-19 pandemic and the evolving situation regarding the Omicron variant of COVID-19 on our business and market volatility, unexpected safety or efficacy data observed during preclinical or clinical studies, clinical site activation rates or clinical trial enrollment rates that

are lower than expected, changes in expected or existing competition, changes in the regulatory environment, and unexpected litigation or other disputes. These and other risks are described more fully in our filings with the Securities and Exchange Commission (“SEC”) and the Québec Autorité des Marchés Financiers (“AMF”), including the “Risk Factors” section of our Annual Report on Form 10-K filed with the SEC and the AMF on March 1, 2022, and other documents we subsequently filed with or furnished to the SEC and the AMF, and its other documents subsequently filed with or furnished to the SEC and AMF, including the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2022 filed with the SEC on May 5, 2022. All forward-looking statements contained in this presentation speak only as of the date on which they were made. Except as required by law, we assume no obligation to update any forward-looking statements contained herein to reflect any change in expectations, even as new information becomes available.

This presentation also contains 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 makes any representation as to the accuracy or completeness of such data or undertakes any obligation to update such data after the date of this presentation. In addition, projections, assumptions and estimates of our future performance and the future performance of the markets in which we operate are necessarily subject to a high degree of uncertainty and risk.

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An overview of Camonsertib

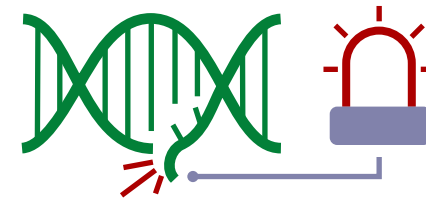


Camonsertib is an oral ATR inhibitor to treat cancers with DNA Damage Response (“DDR”) defects and high replication stress.

Developed entirely in-house at Repare.



Repare initiated the first in-human trial for camonsertib in July 2020.



ATR is a critical DDR protein with a central role in regulation of replication stress.

AACR
American Association
for Cancer Research*

AACR-NCI-EORTC:
molecular targets
and cancer therapeutics

**Clinical validation
of ATR/ATM SL
relationship demonstrated
at ASCO 2019 and further
validated by Repare
at AACR-NCI-EORTC
in October 2021
and at AACR in April 2022.**

Camonsertib: Potential best-in-class ATR inhibitor

Ph1/2 monotherapy trial demonstrated proof of concept in ovarian cancer

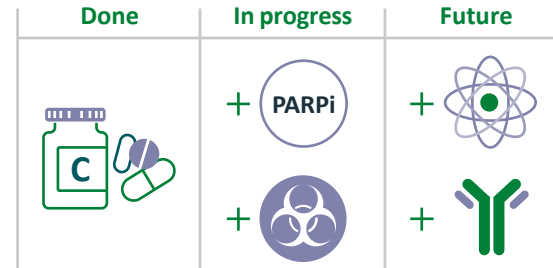
25% overall response (5/20*)

35_W median PFS

75% CBR

90% (18/20) of patients had prior PARPi

85% (17/20) of patients were platinum refractory/resistant*



Compelling rationale for ATRi combination therapy with PARPi, radiotherapy and PD-1/L1.



Safety

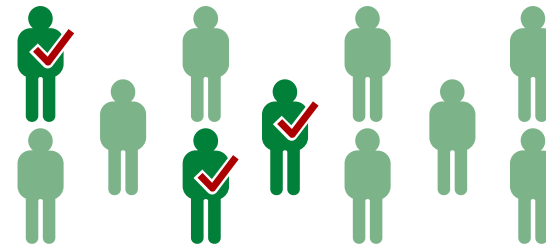


Potency



Selectivity

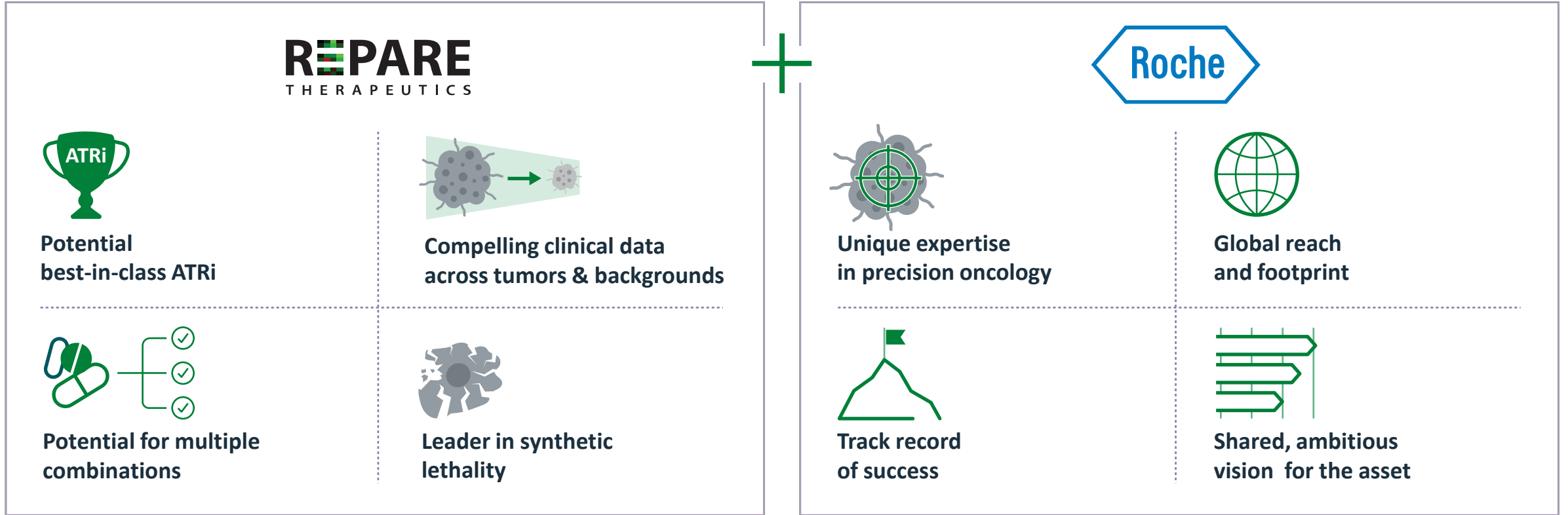
Potential for best-in-class in terms of safety, potency and selectivity.



Proprietary patient selection insights to expand addressable patient populations.

Transaction overview

Long-term, global camonsertib collaboration with U.S. co-development, profit/cost share and co-promotion option




Camonsertib

Financial terms



Upfront



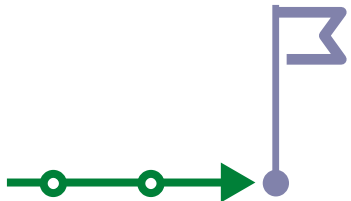
\$125M

U.S. Development, Profit/Cost & Co-promotion option



Partnership
50/50 US co-development
& profit share & U.S. Co-promotion
Milestone payments


Milestones



\$55M
near-term

\$1.2B
Total

Royalties



**High single-digit
to high-teens**

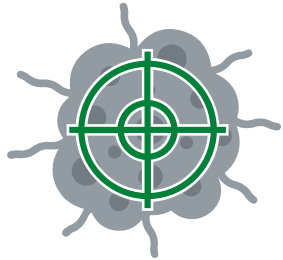
Financial implications

Transaction subject to U.S antitrust review and customary conditions. Expected to close in Q3.

Cash runway extended into 2026.

Summary

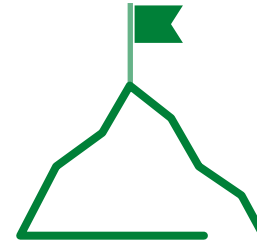
REPAIR
THERAPEUTICS



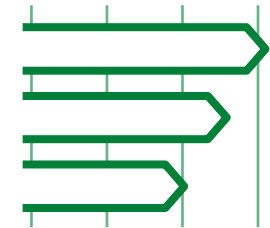
Unique expertise
in precision oncology



Global reach
and footprint











Track record
of success



Shared, ambitious
vision for the asset

Robust pipeline of SL-based precision oncology therapeutics

		SL Pair		Discovery	IND-Enabling	Phase 1/2	Registration-directed	Anticipated milestones	Rights
		Tumor lesion	Drug target						
Clinical	ATR inhibitor RP-3500	ATM + 16 STEP ² lesions	ATR	▶				PARP combo early data - H2 22	 
	PKMYT1 inhibitor RP-6306	CCNE1, FBXW7 + others	PKMYT1	▶				H2 22 early Phase 1 readout	
Preclinical	Polθ inhibitor	BRCA1/2 + others	Polθ	▶				IND-enabling studies in H1 22	 
Discovery	SNIPRx [®] platform	Multiple additional SL targets							
		Discovery and validation of new SL precision oncology targets							 

Strategic perspective on this partnership



Validates the strength of our SNIPRx and STEP² platform and approach, our discovery and early clinical development and capabilities.



Further strengthens our balance sheet and adds two additional years of runway – funding the company into 2026.



Provides a vastly expanded ability to develop and commercialize camonsertib more rapidly and on a global scale.



Allows greater focus on exciting opportunities across our pipeline with RP-6306, Polθ, a new expected IND-enabling program start in H1 2023 and a compelling pipeline of earlier stage assets.



Q&A Session