

Repare Therapeutics Provides Corporate Update and Highlights Key Milestones Anticipated in 2022

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CAMBRIDGE, Mass. & MONTREAL--(BUSINESS WIRE)--Jan. 7, 2022-- Repare Therapeutics Inc. ("Repare" or the "Company") (Nasdaq: RPTX), a leading clinical-stage precision oncology company enabled by its proprietary synthetic lethality approach to the discovery and development of novel therapeutics, today provided a corporate update and highlighted key milestones anticipated in 2022.

"2021 was a substantial year of progress for Repare. We presented encouraging initial Phase 1 RP-3500 monotherapy data from our Phase 1/2 TRESR trial and began enrollment of patients in our combination trials of RP-3500 with PARP inhibitors and with gemcitabine. We also entered the clinic with our second pipeline program, RP-6306, a first-in-class, oral PKMYT1 inhibitor both as monotherapy and in combination with gemcitabine," said Lloyd M. Segal, President and Chief Executive Officer of Repare. "Our successful follow-on public offering in November of last year secured proceeds that enable us to further advance our innovative pipeline of clinical and preclinical programs through 2023. 2022 is expected to be another exciting year for the Company as we look forward to the data from the expansion cohorts of the TRESR trial in tumors with STEP² genomic alterations alone and in various combinations. We are looking forward to the initial data from the Phase 1 RP-6306 monotherapy MYTHIC trial and data from additional studies of RP-6306 in combination with chemotherapy agents in advanced solid tumors. We are also on track to initiate IND-enabling studies for our Polθ inhibitor program that will further expand our synthetic lethality-based clinical pipeline."

Key Milestones Anticipated in 2022:

- Initiation of a monotherapy Phase 2 TRESR trial of RP-3500, a potent and selective oral small molecule inhibitor of ATR (Ataxia-Telangiectasia and Rad3-related protein kinase), for the treatment of solid tumors with specific synthetic-lethal genomic alterations including those in the ATM gene (ataxia teleangectasia mutated kinase), in tumors with ATM loss of function and in tumors with other STEP² genomic alteration is expected in the first quarter of 2022;
- Initiation of a Phase 1 pediatric module of TRESR trial of RP-3500 monotherapy in children is expected in the first quarter of 2022;
- Receipt of monotherapy Phase 1 (Module 1) clinical data from 120 patients enrolled in the Phase 1/2 TRESR (Treatment Enabled by SNIPRx) trial of RP-3500 is expected in the first half of 2022;
- Initiation of IND-enabling studies in the Company's Polθ inhibitor program expected in the first half of 2022;
- Determination of recommended Phase 2 dose of RP-3500 in combination with gemcitabine, a trial that began enrolling patients in December 2021, is expected in the second half of 2022; and
- Early clinical data readouts for PARPi combination from Phase 1/2 TRESR trial and ATTACC trial of RP-3500 in combination with, collectively, three marketed PARP inhibitors expected in the second half of 2022.

Cash Position and Financial Guidance

Repare ended the third quarter of 2021 with approximately \$268.2 million in cash and cash equivalents. In November 2021, the Company closed an upsized underwritten follow-on public offering yielding aggregate gross proceeds of approximately \$101.2 million, or net proceeds of approximately \$93.9 million, after deducting underwriting commissions and estimated offering expenses of \$1.2 million. The Company expects that its cash and cash equivalents will be sufficient to fund its planned operations through 2023.

Upcoming Presentation at 40th Annual J.P. Morgan Healthcare Conference

Repare Therapeutics will present at the 40th Annual J.P. Morgan Healthcare Conference on Wednesday, January 12, 2022 at 3:45 p.m. Eastern Time. A live webcast of the presentation can be accessed in the Investor section of the Company's website at https://ir.reparerx.com/news-and-events/events. A replay of the webcast will be archived on the Company's website for 30 days.

About Repare Therapeutics, Inc.

Repare Therapeutics is a leading clinical-stage precision oncology company enabled by its proprietary synthetic lethality approach to the discovery and development of novel therapeutics. The Company utilizes its genome-wide, CRISPR-enabled SNIPRx[®] platform to systematically discover and develop highly targeted cancer therapies focused on genomic instability, including DNA damage repair. The Company's pipeline includes its lead product candidate RP-3500, a potential leading ATR inhibitor currently in Phase 1/2 clinical development, its second clinical candidate, RP-6306, a PKMYT1 inhibitor currently in Phase 1 clinical development, a Pol® inhibitor program, as well as eight other early-stage, pre-clinical programs. For more information, please visit reparerx.com.

SNIPRx® is a registered trademark of Repare Therapeutics Inc.

Forward-Looking Statements

This press release contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. All statements in this press release other than statements of historical facts are "forward-looking statements. These statements may be identified by words such as "aims," "anticipates," "believes," "could," "estimates," "expects," "forecasts," "goal," "intends," "may," "plans," "possible," "potential," "seeks," "will" and variations of these words or similar expressions that are intended to identify forward-looking statements, although not all forward-looking statements contain these words. Forward-looking statements in this press release include, but are not limited to, statements regarding the clinical development of the Company's pipeline and its research and development programs, including the anticipated design, progress, timing, anticipated patient enrollment,

scope, data readouts, trial outcomes or associated costs of its clinical trials of RP-3500 and RP-6306; additional clinical trials based on initial data from trials which may not be may not be indicative of the final results of the clinical trials; the initiation of IND-enabling studies for the Company's Pol0 inhibitor program; the determination of recommend Phase 2 doses for its product candidates; the anticipated achievement of upcoming clinical milestones including data readouts from expansion cohorts, the initiation of a Phase 2 TRESR trial of RP-3500 in 2022, the initiation of a Phase 1 pediatric module of TRESR study trial of RP-3500 monotherapy in 2022, and the initiation of a Phase 1 clinical trial of RP-6306 in combination with FOLFIRI in 2022; and anticipated cash runway. These forward-looking statements are based on the Company's expectations and assumptions as of the date of this press release. Each of these forward-looking statements involves risks and uncertainties that could cause the Company's clinical development programs, future results or performance to differ materially from those expressed or implied by the forward-looking statements. Many factors may cause differences between current expectations and actual results, including the impacts of the COVID-19 pandemic on the Company's business, clinical trials and financial position, unexpected safety or efficacy data observed during preclinical studies or clinical trials, clinical trial site activation or enrollment rates that are lower than expected, changes in expected or existing competition, changes in the regulatory environment, the uncertainties and timing of the regulatory approval process, and unexpected litigation or other disputes. Other factors that may cause the Company's actual results to differ from those expressed or implied in the forward-looking statements in this press release are identified in the section titled "Risk Factors" in the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2021 filed with the Securities and Exchange Commission ("SEC") and the Québec Autorité des Marchés Financiers ("AMF") on November 10, 2021, and its other documents subsequently filed with or furnished to the SEC and AMF. The Company expressly disclaims any obligation to update any forward-looking statements contained herein, whether as a result of any new information, future events, changed circumstances or otherwise, except as otherwise required by law.

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