



Repare Therapeutics to Present Initial Data from Phase 1 LIONS Clinical Trial at 37th AACR-NCI-EORTC International Conference on Molecular Targets and Cancer Therapeutics

October 13, 2025

CAMBRIDGE, Mass. & MONTREAL--(BUSINESS WIRE)--Oct. 13, 2025-- Repare Therapeutics Inc. ("Repare" or the "Company") (Nasdaq: RPTX), a clinical-stage precision oncology company, today announced it will share initial topline safety, tolerability and early efficacy data from the Phase 1 LIONS trial in a poster presentation at the 37th AACR-NCI-EORTC International Conference on Molecular Targets and Cancer Therapeutics, being held October 22-26, 2025 in Boston, MA.

The LIONS clinical trial ([NCT06232408](#)) is a first-in-human, multicenter, open-label Phase 1 study to investigate safety, pharmacokinetics, pharmacodynamics and the preliminary efficacy of RP-1664, a potential first-in-class, highly selective, oral PLK4 inhibitor, for the monotherapy treatment of adult and adolescent patients with TRIM37-high solid tumors.

Poster Presentation Details:

Title: Preliminary safety and antitumor activity of RP-1664, a first-in-class PLK4 inhibitor, as monotherapy in advanced solid tumors with and without TRIM37 amplification

Presenter: Benjamin Herzberg, MD, Columbia University

Abstract Number: LB-C002

Session: Poster Session C

Session Date and Time: Saturday, October 25 | 12:30 p.m. – 4:00 p.m. ET

Session Location: Level 2, Exhibit Hall D

A copy of the poster presentation will be available on the [Scientific Resources](#) page of the Repare Therapeutics website at the start of the poster presentation session.

About RP-1664

RP-1664 is a potential first-in-class, highly selective, oral PLK4 inhibitor designed to harness the synthetic lethal relationship with TRIM37 amplification or overexpression in solid tumors. Tumors rely on PLK4 for centriole biogenesis in S-phase of the cell cycle when TRIM37, an E3 ligase that reduces pericentriolar material, is high. Preclinical studies demonstrate that RP-1664 selectively inhibits PLK4 and drives potent synthetic lethality in TRIM37-high tumor models, both in vitro and in vivo. Elevated TRIM37 is a feature found across a range of solid tumors and in approximately 80% of all high-grade neuroblastomas. RP-1664 is the only selective PLK4 inhibitor known to be in the clinic.

About Repare Therapeutics Inc.

Repare Therapeutics is a clinical-stage precision oncology company enabled by its proprietary synthetic lethality approach to the discovery and development of novel therapeutics. Repare Therapeutics has developed highly targeted cancer therapies focused on genomic instability, including DNA damage repair. The Company's clinical-stage pipeline includes RP-3467, a Phase 1 Polθ ATPase inhibitor; and RP-1664, a Phase 1 PLK4 inhibitor. For more information, please visit www.reparerx.com and follow @Reparerx on X (formerly Twitter) and LinkedIn

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