Cardior Pharmaceuticals´ Lead Compound Demonstrates Improvement of Heart Function in Chronic Heart Failure Model

- *Safety and efficacy of CDR132L established in an* in vivo *model of chronic post-MI heart failure*
- *Study by international research team published in* European Heart Journal
- *Broad treatment potential for chronic heart failure*

Hanover, Germany, October 22, 2020 - Cardior Pharmaceuticals GmbH, a clinical-stage biotech company, focused on the development of noncoding RNA (ncRNA) therapeutics for patients with cardiovascular diseases, today announced a publication in the *European Heart Journal* (doi:10.1093/eurheartj/ehaa791) demonstrating that repeated treatment with its lead compound CDR132L is safe, improves cardiac function and reduces both ventricular as well as left atrial volumes in chronic heart failure. The results were obtained in a clinically relevant, post-myocardial infarction large animal model. The research was conducted by an international team of scientists from Austria, Germany, and Hungary.

CDR132L is a synthetic, lead-optimized antisense oligonucleotide inhibiting the microRNA 132 (miR132), a non-coding microRNA that regulates cardiac hypertrophy and autophagy in cardiomyocytes by targeting well-defined pathways. miR132 expression is increased in various pathological cardiac conditions in animals and humans and is both necessary and sufficient to drive the pathological growth of cardiomyocytes. It therefore is regarded as a regulatory master switch that controls cardiac function. Already, Cardior has shown in various *in vivo* models that inhibition of miR132 is effective in reversing severe heart failure.

The results demonstrate that repeated dosing of CDR132L is safe and adequate to provide clinically relevant exposure and therapeutic efficacy by improving both systolic and diastolic cardiac function in this model. CDR132L treatment was started one month after myocardial infarction and the compound was administered as a monthly intravenous injection either five or three times. Cardiac function was assessed in a serial fashion and at the 6 months post-MI endpoint using various clinically relevant methods, among others, cardiac magnetic resonance imaging (cMRI), intracardiac hemodynamic measurements as well as various additional biochemical and histological methods at tissue level.

No drug-related adverse events or changes in haematology or laboratory chemistry were observed in the chronic setting, further supporting the previously demonstrated favorable safety profile of the drug.

Therefore, based on the available evidence, a CDR132L treatment regime with monthly injections justifies the clinical development in various chronic heart failure settings. The simultaneous improvement of both systolic and diastolic cardiac functions suggests a broad applicability of the compound in chronic heart failure patients in general.

“This study adds to our growing body of evidence that our lead compound CDR132L is, above all, a safe, efficacious, and novel causal treatment for heart failure, a condition that currently can only be treated symptomatically,” said Dr. Thomas Thum, Professor at Hannover Medical School, CSO of Cardior and corresponding author of the study. “Already, we demonstrated a favorable non-clinical safety profile in a large GLP safety toxicology program in two species, which was a prerequisite for our completed Phase Ib clinical trial in patients with stable chronic heart failure.”

“It’s a big step forward to see that CDR132L not only halts and reverses heart failure in this important animal model, but is also safe when administered repeatedly,” said Claudia Ulbrich, CEO of Cardior. "This not only underlines the potential of our approach for treating a broad range of chronic heart failure indications, but also provides hope for many other conditions where a causal treatment is still missing. It’s good news for the entire RNA-based medicine sector.”

She added that Cardior is expecting results from its Phase Ib clinical study shortly.

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About Cardior
Cardior Pharmaceuticals is a privately held German biopharmaceutical company pioneering the development of curative and preventive heart failure therapeutics based on non-coding RNA (ncRNA). Cardior’s therapeutic approach is using distinctive ncRNA signatures driving the molecular reprogramming that causes maladaptive remodeling and heart failure. Drug candidates developed by Cardior represent first-in-class ncRNA therapeutics and diagnostics for patients with myocardial infarction and heart failure. Founded in 2016 based on the work of cardiologist Prof. Dr. Dr. Thomas Thum of Hannover Medical School, the Company has raised EUR 15 Mio. from international investors LSP Life Sciences Partners, BioMedPartners, Boehringer Ingelheim Venture Fund (BIVF), Bristol-Myers Squibb (BMS) and High-Tech Gründerfonds (HTGF).

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