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News Release

Sheba and Lonza to Collaborate on Cocoon[™] Platform Bringing Automated Cell-Therapy Manufacturing to the Clinic

- Collaboration to assess automated CAR-T cell therapy manufacturing at the point-of-care
- Transfer of established open, manual process to closed, custom-built cassette
- · Developing technologies to facilitate patient access to immunotherapies

Ramat Gan (IL) and Basel (CH), 18 March 2019 – Sheba Medical Center at Tel Hashomer, the largest hospital in Israel and the Middle East region, and Swiss-based CDMO Lonza announced a collaboration to develop point-of-care cell-therapy manufacturing using the state-of-the-art CocoonTM manufacturing platform. The partnership will enable Sheba to vastly streamline its in-house cell manufacturing process and produce genetically engineered human CAR-T cells for applications in treating critically ill oncology patients.

This collaborative agreement brings together a leading academic clinical center and an established development and manufacturing partner with the goal of delivering potentially curative therapies to a greater number of patients with advanced hematological malignancies. Sheba Medical Center has a proven track record of treating oncology patients using novel immunotherapy treatments such as CAR-T; and Lonza will leverage its expertise in autologous cell-therapy process development to transfer Sheba's current open, manual protocols into Lonza's closed, automated CocoonTM platform.

"With the collaborative potential of this venture, we look forward to jointly leading the next personalized cell-therapy revolution. Lonza's CocoonTM platform provides us the ability to manufacture cell therapies faster and closer to the point-of-care and in a scalable manner at lower cost so that we can treat more oncology patients who turn to us as a last resort," said Professor Dror Harats, MD, Deputy Director for Research and Development and Director for Clinical Trials at Sheba Medical Center.

Eytan Abraham, Head of Personalized Medicine, Lonza Pharma Biotech & Nutrition added, "This collaboration with Sheba Medical Center, a proven leader in point-of-care manufacturing and treatment of patients with novel immunotherapies, is a key part of the development program for the Cocoon™ platform. We aim to confirm the benefits of using our closed, automated GMP-in-a-box concept to more efficiently manufacture personalized cell therapies right where the patients are, enabling treatment of a larger patient population."

High-resolution images for editorial use are available. Please contact: media@lonza.com.

About the Cocoon[™] Technology

The Cocoon™ system is a patient-scale closed, automated cell therapy manufacturing system. Designed with customizable, disposable cassettes to accommodate a wide range of autologous cell therapy processes, the Cocoon™ system incorporates the majority of unit operations needed for scalable end-to-end cell therapy manufacturing for uses in immunotherapy (i.e. CAR-T) and regenerative medicine (i.e. MSCs).

By automating autologous cell therapy manufacturing in a closed automated system, the $\mathsf{Cocoon^{TM}}$ platform enables superior process control leading to fewer deviations along with increased cell quality and yield.

The Cocoon[™] device is currently in Beta-testing with a selection of cell and gene therapy customers.

About Lonza

Lonza is an integrated solutions provider that creates value along the Healthcare Continuum®. Through our Pharma Biotech & Nutrition segment and our Specialty Ingredients segment businesses, we harness science and technology to serve markets along this continuum. We focus on creating a healthy environment, promoting a healthier lifestyle and preventing illness through consumers' preventive healthcare, as well as improving patient healthcare by supporting our customers to deliver innovative medicines that help treat or even cure severe diseases.



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Patients and consumers benefit from our ability to transfer our pharma know-how to the healthcare, hygiene and fast-moving consumer goods environment and to the preservation and protection of the world where we live.

Founded in 1897 in the Swiss Alps, Lonza today is a well-respected global company with more than 100 sites and offices and approximately 15,500 full-time employees worldwide at the end of 2018. The company generated sales of CHF 5.5 billion in 2018 with a CORE EBITDA of CHF 1.5 billion. Further information can be found at www.lonza.com.

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Additional Information and Disclaimer

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