

Breakthrough as enzymes convert plastic waste into new bottles

- *Enzymatic recycling technology - a breakthrough towards a circular economy - reported in peer-reviewed scientific journal Nature*
- *Technology will support UK brands Ribena and Lucozade in reaching 100% sustainable plastic bottle ambition*

London, UK, April 8th, 2020, (5pm) Ribena, Lucozade Energy and Lucozade Sport are on track to be the first UK brands to use 100% sustainable plastic after a major breakthrough in enzymatic recycling developed by French company Carbios is reported in a peer-reviewed paper published in a scientific journal.

CARBIOS, a company pioneering new bio-industrial solutions to reinvent the lifecycle of plastic and textile polymers, announces the publication of an article in the prestigious scientific journal Nature, entitled “*An engineered PET-depolymerase to break down and recycle plastic bottles*”. The article is co-authored by scientists at Carbios and at the Company’s renowned academic partner, the Toulouse Biotechnology Institute (TBI)¹.

The technology has the backing of a consortium of industry heavyweights, including Lucozade Ribena Suntory parent company Suntory Beverage and Food Europe and vastly improves the recycling of PET plastic waste.

The article describes the development of a novel enzyme, which can biologically depolymerize all polyethylene terephthalate (PET) plastic waste, followed by an extremely efficient recycling into new bottles. PET is the most common thermoplastic polymer and is used to manufacture bottles, polyester clothing fibres, food containers, and various thermoformed packaging and components. Carbios’ recycling process, the first of its kind, initiates a real transition to a circular economy and can better prevent plastic pollution from harming our oceans and planet. This innovative technology also paves the way for recycling PET fibres, another major challenge in guaranteeing a clean and protected environment for future generations.

Prof. Alain Marty, Carbios’ Chief Scientific Officer and co-author of the Nature article says: “*I am very proud that Nature, one of the most highly respected scientific journals in the world, has validated the quality of the research led by Carbios and TBI laboratory scientists in developing a PET recycling enzyme and a revolutionary process. The results obtained confirm the industrial and commercial potential of the Company’s proprietary process, which will be tested in 2021 in our demonstration plant in the heart of the French Chemical Valley, near Lyon.*”

Dr. Saleh Jabarin, Distinguished Professor at The University of Toledo, Ohio and a member of Carbios’ Scientific Committee: “*It’s a real breakthrough in the recycling and manufacturing of PET. Thanks to the innovative technology developed by Carbios, the PET industry will become truly circular, which is the goal for all players in this industry, especially brand-owners, PET producers and our civilisation as a whole.*”

Roberto Vanin, Chief R&D Officer at Suntory Beverage and Food Europe, says: “*Hitting our goal of 100 per cent sustainable plastic bottles within a decade requires us to think differently, which is why we’ve invested in the Carbios consortium. Innovative ideas such as enzymatic recycling can help reinvent the lifecycle of plastic waste, turning post-consumer plastic waste back into a resource.*”

¹ A mixed research unit INSA Toulouse, INRA, CNRS.

“In 2007, Ribena became the first soft-drinks brand to use 100% recycled plastic. Sadly much waste plastic today still goes unsorted and ends up in landfill; this exciting technology offers a way of avoiding mixed, coloured or food-waste contaminated plastic being lost. We're excited to be at the forefront of worldwide efforts to enhance the recyclability of PET and bring a fully circular economy for plastic closer to reality.”

Nature, the highest *Impact Factor* scientific journal, recognises the ground-breaking quality of the enzymatic engineering research being done by Carbios and TBI, that is paving the way to virtuous management of plastic waste. *“Carbios is the first company to successfully combine the two scientific worlds of enzymology and plastics”*, as **Dr. Philippe Pouletty, CEO of Truffle Capital and Co-founder of Carbios**, comments.

By leveraging many years of experience with a world-renowned team, Carbios and TBI are proud to have been able to increase the degradation yield of PET waste to 90% in 10 hours, a significant upswing from the initial degradation yield of 1% after several weeks. This paradigm shift in how effectively PET can be recycled, is leading toward a future circular economy technology applicable to all PET waste, which Carbios is proud to be spearheading.

To read the article in Nature, please find the link here: <https://www.nature.com/articles/s41586-020-2149-4>

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Notes to editor

Consortium member and partner quotes

Sophie Duquesne, INRA Researcher: *“For any researcher, seeing its work recognized by the prestigious journal Nature is a true achievement. I am very proud of the work accomplished by the researchers at TBI and Carbios, whose collaborative efforts have led to the development of a sustainable solution to the end of life of plastics.”*

Bertrand Piccard, Founder and President of the Solar Impulse Foundation: *“I am very pleased that the scientific community recognizes one of the solutions labelled by the Solar Impulse Foundation as a financially profitable solution to protect the environment. The use of such technology is as logical as it is ecological!”*

About Carbios

Carbios is a green chemistry company whose innovations help address the environmental and sustainable development challenges facing manufacturers. Since its creation in 2011 by Truffle Capital, the Company has developed, through biotechnology, two industrial processes that revolutionize the biodegradation and recycling of polymers. These innovations, a world first, optimize the performance and lifecycle of plastics and textiles by exploiting the properties of highly specific enzymes.

Carbios' economic development model is based on the industrialization and commercialization of its products and/or enzymes, technologies and bioprocesses through license concessions directly or through joint ventures to major industrial players or sectors concerned by the Company's innovations. As such, Carbios created the joint venture Carbiolice in September 2016, in partnership with Limagrain Ingredients and the SPI fund operated by Bpifrance. This company, of which Carbios has majority control, will exploit the first technology licensed by Carbios by producing enzymatic granules for the production of biodegradable and biobased plastics.

Carbios benefits from the qualification "Innovative Company" of Bpifrance allowing the eligibility of the Company's securities for the investment of Mutual Funds Placement in Innovation (FCPI). For more information, please visit: www.carbios.fr

Carbios is eligible for the PEA-PME, a government program allowing French residents investing in SMEs to benefit from income tax rebates.

About Lucozade Ribena Suntory

Lucozade Ribena Suntory (LRS) is one of the leading soft drinks businesses in the UK and Ireland. LRS was formed in 2014, and is part of Suntory Beverage & Food Europe. Our much-loved soft drinks brands include Lucozade Energy, Lucozade Sport, Fitwater, Ribena, Orangina and True Nopal Cactus Fruit Water. Our business is driven by our "Yatte Minahare" spirit and our role is to have a positive impact on the lives of our consumers by providing them with a responsible choice of great-tasting drinks and enabling them to lead active lifestyles.

For further information, please visit: www.lrsuntory.com

About Suntory Beverage & Food Europe

Suntory Beverage & Food Europe (SBFE) is one of five regional divisions of the Japan-based Suntory Group, the world's third largest drinks company. We're proud to be part of a family-owned business with its inspiring 120-year heritage and we are guided by Shinjiro Torii's founding spirit.

SBFE is made up of 3,800 passionate people working in business units throughout Europe on hugely iconic brands including Schweppes, Orangina, Lucozade, Ribena, La Casera, Oasis, Pulco, MayTea, TriNa and Sunny D with a commitment to producing great-tasting, healthier drinks.

Everything we do flows from our **Mizu To Ikiru** promise. We believe in balance. Nature is at the heart of our business, and we're working every day to ensure that future generations inherit and enjoy a healthy planet.

For more information, please visit <https://www.suntorybeverageandfood-europe.com>

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