Debiotech will be introducing its new insulin JewelPUMP2 for Diabetes Type 2 during the 2014 ATTD conference in Vienna, Austria. (January 29th, 2014)

Lausanne, Switzerland, January 29, 2014. The JewelPUMP2, which will be unveiled for the first time at the ATTD 2014 congress on February 5th in Vienna, is a new product dedicated to the Diabetes Type 2 market, based on Debiotech’s innovative JewelPUMP platform.

The JewelPUMP2 has been entirely re-designed to address the very specific market of Type 2 patients, requiring an extremely simple to use and very convenient and secured insulin delivery patch.

By using its JewelPUMP platform, which is already in the industrialization phase and in preparation for the CE marking, Debiotech will be able to introduce the JewelPUMP2 shortly after its JewelPUMP for Type 1 patients, while ensuring the same degree of miniaturization, safety and reliability. The JewelPUMP2 is opening entirely new possibilities for Diabetic Type 2 patients, including improved convenience of use, very easy programming with simplified basal-bolus selection and automatic Meal correction, as well as real-time remote communication and assistance to assist in proper treatment compliance.
“The development of a specific patch pump for Type 2 patients was always on our agenda,” says Frédéric Neftel, MD, President and CEO of DEBIOTECH SA. "Now that we have completed the development of our JewelPUMP platform, we are in a position to present the JewelPUMP2 that is currently well advanced in our development program to serve that huge additional part of the diabetes market that remains poorly addressed today. The JewelPUMP2 takes all the advantages of the JewelPUMP platform, while addressing very specific needs for Type 2 patients, including extreme simplification of use and convenience, as well as real-time remote communication for the necessary compliance surveillance and patient assistance. We are extremely excited about all the new features we will be able to bring to patients suffering from Type 2 diabetes, while making the treatment very discreet, more comfortable and easier as well as more efficient to use than a pen”.

"The Type 2 market represents a huge opportunity for a product like the JewelPUMP2, with a sizable portion of Type 2 patients requiring high doses of insulin that cannot be delivered with existing pumps" says Laurent-Dominique Piveteau, PhD, Chief Operating Officer at DEBIOTECH. “We believe that the JewelPUMP2, with its unique reservoir size and capabilities, very small size and extreme simplicity of use, will make a real difference in that specific market.”
“The JewelPUMP2 is not only extremely small and convenient, but also very simple to use thanks to a very novel interface addressing patient concerns using a pump and reducing overall usage complexity,” says Stephane Proennecke, PhD, JewelPUMP Project Leader at DEBIOTECH. “With this new miniaturized BGM-remote control device that fits into your pocket, we have been able to make a basal-bolus regimen extremely easy to understand and control. Just enter your meal type (breakfast, lunch or dinner) and the bolus will be automatically administered, as needed. If you want to say that it is an extra-large or particularly slim dinner, user can easily adapt the bolus as needed. If you measure your glucose level with the integrated BGM, the pump will automatically propose a bolus adapted to your needs. The remote controller will also remind you when it is time to measure your Blood Glucose level or if you have forgotten your meal bolus. You can adapt your basal mode according to your exercise or your behavior, with only few intuitive steps using easily understandable icon buttons. Even if you are not familiar with a PDA-phone, you should be able to use the JewelPUMP2. Last but not least, in the presence of others, you can entirely control your JewelPUMP2 without anyone else noticing and the two buttons on the pump will enable you to self-administer a bolus in the absence of your remote controller.”

“Despite its very small size and a weight of only 25 grams, the JewelPUMP2 comprises a large reservoir containing up to 800 U of U-100 fast acting insulin for 7 days use. The JewelPUMP2 is secured to an auto-inserted soft-cannula patch, from which it can be detached and re-attached at will, the soft-cannula patch being replaced every 3 days without having to change or refill the pump,” says Olivier Magnenat, Head of the JewelPUMP Mechanical Construction group at DEBIOTECH. “The JewelPUMP2 is also equipped with an air filter, so that the insulin filling process is simplified. With the JewelPUMP2 we have been able to address the issue of large insulin consumption, while reducing the constraints of overall size and preparation hurdles.”
"Real-time communication through the 3G telephone band is a real must in today's environment to ensure patient compliance and help prevent unexpected situations," says Cristian Arfire, MSc, Head of the Software Engineering team at DEBIOTECH. "With the JewelPUMP2 the patient, but also his authorized doctor and/or diabetes educator, can have immediate access to all relevant treatment information or warning messages received in critical conditions. This could be significantly helpful in those circumstances where treatment compliance or awareness is a concern. Because we are also mindful of the potential for malware in the medical arena, we have put a JewelCARD inside each remote controller (a dedicated smart card specific to each JewelPUMP2), so that we can ensure the most secured environment for remotely controlled medical devices. Overall, the JewelPUMP2 is certainly a jewel of technology, though inconspicuous to the patient."

"We were able to incorporate a vibrator alarm inside the patch-pump, to keep alarms extremely discreet, only to be noticed by the patient himself," says Séverin Leven, PhD, Head of the JewelPUMP Electronic team at DEBIOTECH SA. "We have also been able to make the electronic control module a re-usable part to be attached to the single-use pump-reservoir module. This makes the system more environmentally friendly and helps reduce overall cost. The communication between the JewelPUMP2 and the remote controller is using the new Bluetooth low energy standard and, thanks to its MEMS pump-chip, the JewelPUMP2 can operate for 7 days on a single green battery (mercury and lithium free). We have even incorporated a temperature sensor to inform the patient in case insulin over-exposer to heat."
Last but not least, we have added a sensor to automatically detect any disconnection of the JewelPUMP2 from the cannula patch, allowing automatic suspend of insulin delivery until it is reattached. In short, we have tried to implement everything possible to increase safety and ease-of-use to be part of the JewelPUMP2 experience.

Based on an ultra-miniaturized and highly precise MEMS pump chip technology, developed and manufactured in partnership with ST Microelectronics, the JewelPUMP is addressing still unmet needs, both in the Type 1 and Type 2 diabetes markets.

"We wanted the JewelPUMP2 to be the easiest, but also the safest insulin pump," says Eric Chappel, PhD, MEMS Project Leader at DEBIOTECH. "The use of a MEMS pump-chip enables to deliver every single 0.02 Units of insulin within 5% accuracy and this independently of external conditions. This represents instantaneous and basal deliveries that are far more constant than any existing system today. In addition, we have incorporated a functional sensor inside the MEMS pump-chip, which provides a signal that is analyzed by the electronics of the JewelPUMP2 and helps detect and discriminate any possible failure almost instantaneously. As an example, the JewelPUMP2 is able to detect an occlusion on the cannula during a basal rate of 0.5U/h within a few minutes, where other pumps would need several hours. The same sensor, which is also used to test every single JewelPUMP2 during production, ensures the delivery to the patient of a fully functional and accurate JewelPUMP2 disposable module, something which has never been possible at this level on disposable medical pumps."
"All this has been made possible thanks to the intensive collaboration between Debiotech and ST Microelectronics" adds Gian-Luca Lettieri, PhD, MEMS Production Leader at DEBIOTECH. “By combining our design with ST’s extensive manufacturing experience, we are able to offer a high performance and affordable commercial product”.

“The JewelPUMP2 has been tested in every of the worst conditions to ensure that it fulfills all of the safety and performance requirements,” says Christophe Conan, PhD, Head of the Testing team. “We are proud to say that the outcome of those tests have exceeded our expectations, thanks to the precision of the MEMS pump technology and the built-in sensor that provides extremely useful real time information. In addition, the comparison with existing insulin pumps on the market has shown that the JewelPUMP2 could bring real significant advantages to safety and accuracy for the patient.”

"The JewelPUMP has been successfully used on 35 diabetic patients, as part of a multi-center study in combination with a continuous glucose monitor, for the development of new algorithms for a closed-loop system", says Ary Saaman, Director of Regulatory Affairs at DEBIOTECH. "The purpose is for us to prepare the future and be able to incorporate such newly developed very precise algorithms into a later generation of the JewelPUMP to move diabetes therapy into the closed-loop control era. Knowing how much time will be needed before such a system can be approved for use, it is our responsibility to work on it already from today."
We know how many expectations the JewelPUMP has created. Unfortunately Debiotech cannot give any precise date regarding its market launch at this stage, but is actively engaged in order to submit files to the regulatory agencies, in Europe as well as in the US. Be assured that DEBIOTECH is highly committed to making the JewelPUMP available to all diabetic patients worldwide, with the continuous support of numerous patients, nurses and diabetologists.

More information is available at:

www.jewelpump.com

JewelPUMP2™ is currently under final stage development. It is not yet CE Marked and has not yet been submitted for 510k clearance.

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