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Profile

Micrel Medical Devices is developing infusion pumps and telemedicine systems, with worldwide distribution. The company specializes in ambulatory and home care treatment.

Micrel's worldwide patented health technology, which enables patient monitoring whilst on the move, through mobile communications (GSM/GPRS), provides new ways of delivering drugs, monitoring both their therapeutic and side effects and therefore increasing their therapeutic index. Using this technology, the company is currently developing an innovative solution to insulin, an expert delivery/glucose monitoring system. The system also offers high versatility to Home Care Providers, in organising and supporting Health Care at Home, as well as preventing medication errors.

Micrel's infusion pumps for PCA treatment, Parenteral Nutrition and Immunoglobulin infusion at home, are reference in Europe and Asia, and are now entering the US market. The company's "therapy watch" web based service Micrelcare www.micrelcare.net, is designed to communicate with Micrel's sensors and pumps, supporting Home Care Providers and Hospitals to discharge patients and provide care at home. The company is No.1 in new installations in France, the marketing and international sales force are in Nice, and the company has a good presence in Switzerland through its distributor Onco Medical. The company's success in parenteral Nutrition in UK is a case study in the classroom and books of Stanford University - School of Business.

The company's products which are on the market can be found on the webpage www.micrelmed.com and the web server www.micrelcare.net shows Micrel's e-health service.

R&D Pipeline

Telemedicine application

Micrel is currently at clinical study phase in Dubai and France, for its telemedicine application. The application allows ambulatory patients to report on therapeutic and side effects of their therapy and also allows adjustment of therapy remotely. The company aims to CE mark the product in November 2010. Besides providing a new delivery route for new therapies, the specific technology is an innovative way to report therapeutic and side effects and organize and adjust remotely non toxic, therapeutic drug prescription. The technology adds great validity in Clinical Trials. It is a step towards Personalized Medicine.

New catheter + pump system FLU-X™

Micrel is also at clinical study phase in India for a new catheter + pump system FLU-X™, which is intended to be used for fluid exchange (infusion and evacuation of fluids and drug solutions) in patients

with septic trauma, haematoma and abscess, as well as for immediate post-operative intratumoral chemotherapy of malignant tumors, including intracranial ones. The system will be CE marked by the end of 2010. This is a new delivery route for drugs which provides unique therapeutic benefits to patients. The company will demonstrate that anti-cancer drugs have a much better therapeutic effect through this delivery route, and that leaving the drug in the body and especially intracranial for a short time and then evacuate it together with toxic parts, is a great benefit to many therapies.

Novel diabetes care system

Micrel is also developing an innovative diabetes care system, which is a disposable patch with an insulin pump and a self-calibrating CGMS. The accuracy of the enzymatic glucose sensor is very high, so that closed loop infusion will be possible in the future. The system is conceived for distribution through pharmaceutical channels, as a single use, all- in-one pre-filled system, similar to the way strip readers are sold today.

Target partners & Collaborations

The company is seeking

1. CROs that need a **novel system for clinical trials**. Micrel's remote real time system provides an immediate and validated way of getting report on therapeutic and side effects on drug trials. The system's feedback mechanism can be sensor-based (for effects measurable, like K,Na, ECG, PB, BPM etc), where also a lab-on-a-chip application is possible, depending on cost considerations. The system also includes patient feedback, based on questions for non measurable factors like nausea, headache, vomiting etc. This is combined with remote pump programming, allowing the adjustment of the drug prescription between therapeutic and toxic levels and also allowing the construction of a clinical trial database without human intervention.

2. Pharmaceutical companies that need the above new way to organize clinical trials, and develop drugs in a Personalized Medicine context. This novel system may be combined with www.biovista.com pre-clinical investigation tool.

3. Pharmaceutical companies that need a new delivery system for a patent (in the case of an expiring drug). The company's infusion-drainage loop with pressure monitoring dual pump and catheter FLU-X™ system can add therapeutic value to a drug, so that patent re-entry of the drug is done with higher user benefits.

4. Pharmaceutical companies in the diabetes healthcare market. Micrel is looking for strategic partners and distributors for its innovative CGMS –insulin pump patch, single use with no repair – service. The company plans to carry out animal tests of the prototype product early in 2011.

Company Representative

Alexandre Tsoukalis, *Managing Director and CTO*