



## **1. Company Overview**

Solianis Holding AG is a Swiss stock company (Aktiengesellschaft) established under the laws of Switzerland in March 2005. The Company's principal operating subsidiary, Solianis Monitoring AG, was incorporated as a Swiss stock company in May 2005 and is located at Leutschenbachstrasse 46, 8050 Zurich.

Solianis Holding AG was established as a medical devices company developing a non-invasive Continuous Glucose Monitor (CGM) for self-monitoring patients with diabetes, within the broader range of physiological monitoring. Solianis' technology, based on Impedance Spectroscopy (IS), was originally developed by the Swiss based company Pendragon Medical Ltd. from 2000 to 2004. Pendragon demonstrated the effectiveness of the technology in measuring changes in glucose under controlled conditions but failed to address measurement deviations caused by additional factors. Pendragon Medical decided to liquidate its operation in February 2005. Upon the liquidation, Solianis acquired the entire intellectual property from Pendragon Medical including the patent portfolio and all rights to the technology.

Solianis has developed a R&D roadmap that defines a pathway to significant improvements on the hardware and software to increase its non-invasive CGM device's applicability and reliability. In order to address the impact of additional, perturbing effects, a multi-sensor platform has been designed around the IS-based concept, including optical sensor technology to improve the reliability of the output. Based on the current roadmap, the company expects to launch its product in Europe in early 2010.

## **2. Large Market with an Unmet Need in Diabetes Management**

The World Health Organisation and the International Diabetes Federation have estimated the global diabetic population to reach a staggering figure of 350 million by 2030. The American Diabetes Association has shown that the direct and indirect costs of diabetes on the US healthcare system totalled \$132 billion in 2002, of which \$91.8 billion was contributed by the direct medical expenses. The magnitude of this disease is driving advancements in monitoring tools such as glucose monitors and the vast majority of revenue is generated from diabetic self-testers.

Today, the established method to monitor the blood glucose levels is to draw a small amount of blood from the fingertips and determine the glucose level via a portable instrument. This is typically done 2 to 5 times a day, in some cases even more than 10 times; a process that is painful and impacts regular monitoring. Furthermore, traditional finger-stick devices only provide single-point-in-time measurements and miss potentially critical hypo- and hyperglycaemic events leading to severe complications. Less than 10% of the patients with diabetes are known to frequently monitor their blood glucose levels due to inconvenience and pain associated with the existing measurement methods

This has led to the development of CGM which allows facilitating frequent testing and enables the patients with diabetes to achieve tight glycemic control thereby improving the quality of life. Minimally-invasive CGM devices are already on the market, but the drawbacks of these devices include the irritation of skin and/or tissue by the sampling method as well as the limited time of use (typically 5 days lifetime per sensor). Several companies are therefore working to develop a truly non-invasive CGM device.

# solianis

## **3. Innovative, Proprietary Technology**

Various non-invasive devices under development have shown promising results in measuring glucose levels under controlled conditions in the lab or hospital, but failed to address the influence of a number of perturbing factors (body temperature, microcirculation, sweat, moisture and thickness of different skin layers) which prevent accurate measurement of glucose levels under changing conditions in daily life. Solianis' non-invasive continuous glucose monitor employs IS technology to track changes in the glucose levels. The IS technology uses frequencies between 100 kHz and 8 GHz to measure the effect of changing glucose levels in blood, cells and interstitial fluid and the resulting changes in the ac and dc conductivity in both hyper- and hypoglycaemic events. Solianis' proprietary, patented technology is unique in that it uses a multi-sensor concept to address the influence of the perturbing factors, thereby allows for more reliable monitoring of changes in glucose levels in daily life conditions.

## **4. Positive Clinical Trial Results**

In several trials, conducted in cooperation with the University Hospital Zurich, Solianis has shown that the multi-sensor array tracks glucose changes in patients with diabetes as well as healthy subjects. In these trials, the subjects have gone through glucose challenges under various conditions designed to test the impact of the additional effects, thus simulating real life conditions. The results of these trials with healthy subjects as well as patients with diabetes look exciting – proof of concept is reached. Solianis' Scientific Advisory Board, chaired by Prof. Lutz Heinemann, was impressed by the repeatability of the results and the stability of the signals under simulated daily life conditions. In the next clinical trial ("Outpatient study"), started in November 2007, the applicability of the platform is further demonstrated in an outpatient setting.

## **5. Strong Intellectual Property**

Solianis acquired the intellectual property from Pendragon Medical during its bankruptcy proceeding and since then has continued further development of its intellectual property. It currently has two issued patents and eight filed patent applications covering the basic technology and sensor designs. Solianis is pursuing an aggressive strategy to continuously add patent applications to protect its innovative multi-sensor platform.

## **6. Experienced Management and R&D Expertise**

Solianis has assembled an experienced management team and Board of Directors who are experts in commercializing novel medical devices and creating value for patients and shareholders. It has an R&D team of 12 engineers, physicists, algorithm experts and computer scientists as well as a high-quality Scientific Advisory Board including leading physicians and researchers from Germany, Israel, the UK and Switzerland.

## **7. Contact details**

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