Abstract

The Single-Port Insulin Infusion for Improved Diabetes Management (SPIDIMAN) consortium aims to improve the self-monitor of patients with insulin-dependent diabetes. The consortium is focused on developing a coating technology to apply a glucose-sensitive fluorescent dye onto a standard insulin catheter and incorporate this integrated glucose sensor into a single-port artificial pancreas system. The new device is expected to be particularly suitable for patients in childhood and adolescence, who will form a special focus group of the project.

Mission

The SPIDIMAN consortium is a European effort to advance optical continuous glucose monitoring technology (smart tattoos) with improved sensor accuracy, faster response times, wider dynamic range, and higher signal stability, which will advance diabetes management by reducing hypo- and hyperglycemic episodes. Within SPIDIMAN, research-intensive European SMEs will develop an innovative artificial pancreas approach and perform clinical validation in a European network of
specialized diabetes centers.

The new device will integrate advanced glucose measurement and accurate insulin delivery in an artificial pancreas (AP) approach to improve diabetes management in adults and children suffering from insulin-dependent diabetes. To improve on continuous glucose monitoring, research at four European SMEs will develop a standard insulin catheter coated with a glucose-sensitive fluorescent dye to function as a new single-port AP. The coated insulin catheter is inserted into the subcutaneous tissue and will simultaneously be used for both glucose concentration measurement and insulin delivery in an integrated therapeutic device that has great potential to improve diabetes management in adults and children. The performance and applicability of this innovative device will be tested in preclinical and clinical trials in a European network of specialized diabetes centers to improve glycemic management of type 1 and type 2 diabetes patients as soon as possible.

To provide benefits to diabetes patients through improved management of glucose levels and a reduced frequency of out-of-target glycemic values, SPIDIMAN will meet the following objectives:

**Financing**

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Homepage [http://www.spidiman.eu/](http://www.spidiman.eu/)

**Points of Contact**

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