Defymed and Dr. Doug Melton's Semma Therapeutics combine efforts toward beta cell encapsulation system - December 15, 2016

Defymed announced a collaboration with Semma Therapeutics this week to combine their technologies toward a beta cell encapsulation system. Semma Therapeutics is a Cambridge-based biotech company co-founded by Harvard's Dr. Doug Melton to commercialize Dr. Melton's approach to creating large quantities of insulin-producing cells from human stem cells. Defymed boasts a preclinical MAILPAN "bioartificial pancreas" macroencapsulation system that features a semi-permeable membrane pouch containing many insulin secreting cells. Through the partnership, the two companies will join forces toward preclinical validation of the use of Semma Therapeutics' insulin-secreting cells in Defymed's MAILPAN system. No financial details related to the deal were disclosed. The technology is clearly very early stage - the announcement shares that efforts are still in the in vitro stage and have not yet reached animal models yet - but we view this collaboration as very promising nonetheless. One of the main limiting factors for many beta cell encapsulation efforts is a lack of an unlimited source of insulin-secreting cells - an issue that Dr. Melton and Semma Therapeutics purports to address though we haven't seen details yet. Dr. Melton's work has certainly garnered validation in the form of an impressive $44 million Series A financing round for Semma Therapeutics and high-profile partnerships with Novartis and AZ. Defymed is comparatively more under-the-radar - the French company was created through a consortium of partners in academia, clinical/public health research, and industry from Belgium, France, and the UK, including Oxford's Dr. Paul Johnson, and received a $500,000 grant from the JDRF to advance its preclinical studies; Dr. Melton's early work was supported by the JDRF as well. ViaCyte currently leads the beta cell encapsulation landscape with its phase 1/2 PEC-Encap, though several other candidates are in preclinical stages or entering clinical trials - see our coverage of JDRF's Bay Area Chapter Meeting for a look at the competitive landscape.

-- by Helen Gao and Kelly Close