



Dieter Egli

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Dieter Egli grew up in Switzerland, and received his education at the University of Zurich, where he received his Ph.D. in molecular biology in 2003 under the supervision of Prof. Walter Schaffner. He was fortunate to be mentored and taught by pioneers in molecular and developmental biology, including Prof. Ernst Hafen, Prof. Konrad Basler, and Prof. Charles Weissmann. During his PhD, his primary interest was in double strand break induced homologous recombination in the fruit fly. He then joined the laboratory of Prof. Kevin Eggan at Harvard University as a postdoctoral fellow where he studied somatic cell reprogramming using mouse oocytes and fertilized eggs. He became an independent group leader at the New York Stem Cell Foundation Research Institute, and is now the Maimonides Assistant Professor of Developmental Cell Biology.

The interest of the Egli laboratory is in the developmental biology of the human embryo. Together with physicians of Columbia Fertility, he runs a dedicated oocyte donation program for research. Only a handful such programs exist world-wide. Using human oocytes, nuclear transfer and pluripotent stem cells, and microinjection, it is possible to dissect the molecular mechanisms that determine developmental potential. He and his team have shown that human oocytes can reprogram a somatic cell to a pluripotent state, and generate stem cells matched to a type 1 diabetic patients. These cells can give rise to insulin producing beta cells and are able to maintain glucose homeostasis when grafted into mice. This is a proof-of-principle for therapeutic cloning: the derivation of autologous stem cells by nuclear transfer, and their use in cell therapy. The Egli laboratory has also shown the replacement of mitochondria by maternal spindle transfer, and more recently the derivation of haploid human pluripotent stem cells. The goal of these studies is to gain fundamental insight into cell biology, and to develop novel treatments in human reproduction.