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## Valuation of human mesenchymal stem cells (hMSC) effects on pancreatic islets

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The cell-based therapy is a promising approach to treat many degenerative diseases such as type 1 Diabetes Mellitus (T1DM). Besides the exclusive pharmacological treatment for T1DM a new approach has been recently proposed for restoring of Beta cell mass by islet transplantation. One of the principal problems of this approach is the numerical and functional loss of transplanted islets. For these reasons new strategies are studied in order to increase islets survival. In our laboratories we have already demonstrated that rat Mesenchymal Stem Cells (rMSC) are able to promote islets survival in vitro and that rMSC, if co-cultured with pancreatic islets, are able to express Pdx1, a gene involved in beta cell insulin secretion. The aim of this study is to verify the effect of human Mesenchymal Stem Cells (hMSC) on the survival and function of pancreatic islets. In order to clarify which mechanism could be involved in the putative positive effect we set up different culture conditions: Direct co-culture, in which hMSC were in direct contact with islets; indirect co-culture in which hMSC and islets shared the medium; mix cocultured in which islets were both in direct contact and shared the medium with hMSC. Preliminary results demonstrate a positive effect of hMSC on islets survival. Now we are focusing on the effect on insulin secretion regulated by hMSC in the different co-culture conditions.

### Biography

M Monfrini is attending Neuroscience PhD program at Department of Surgery and Translational Medicine, Milano-Bicocca University. At present she is studying the protective effect of hMSC on different models of degenerative pathologies such as T1DM and peripheral nervous system degenerative diseases.

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