H&E Analysis of Immune Responses to Xenotransplanted Trophoblasts

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Abstract

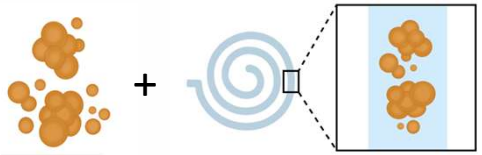
Islet transplantation, a potential cure for type 1 diabetes, still requires the use of immunosuppressive medications, which can increase the risk of medical complications and infections. To prevent the need for immunosuppressants and prevent immune rejection of the transplant, this research looks into the use of trophoblast cells from placentas as a tool to create immune tolerance, as trophoblast cells create immune tolerance between mother and fetus. Using trophoblasts to protect islets during transplantation from immune rejection could increase the accessibility of the method as a cure for type 1 diabetes.

Methods

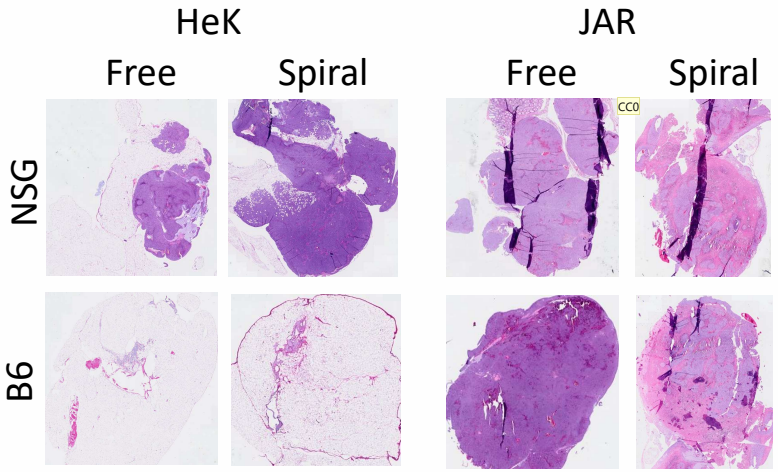
- The samples were prepared for analysis through microtome sectioning.
- The images of the H&E tissue samples were analyzed and organized through the software, Olyvia.

Results

JAR or HeK cells, free or spiral macroencapsulation



With VEGf



Future Research

Future work will include the process of immunohistochemistry to stain the tissue samples for innate and adaptive immune cell markers to visualize local immune response, to determine if the trophoblasts can create immune tolerance. This process will need to be optimized and quantitatively analyzed. Additional specific testing to determine if the trophoblast cells will protect islets from immune response.

Acknowledgements

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References

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