The role of high vascular flow and vascular patterning in tissue engineered renal genesis

We have demonstrated that angiogenesis from the arteriovenous loops (AVL) performed in rats can be guided by 3D patterned matrix constructs. We have since evaluated a number of better more angiogenic gels in conjunction with our animal vascular tissue engineering model and are assessing the data. Furthermore we have performed athymic rat vascular tissue engineering models with embryonic mouse kidney precursors with and without the renal tracts to determine if they may be matured and incorporated into the vascular networks to help development. We are planning further animal experiments after Christmas with human differentiated IPSC cells towards kidney progenitors in the AVL system augmented with prepatterned matrices.

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