

SUPPLEMENTARY DATA

Embedding for transmission electron microscopy (TEM).

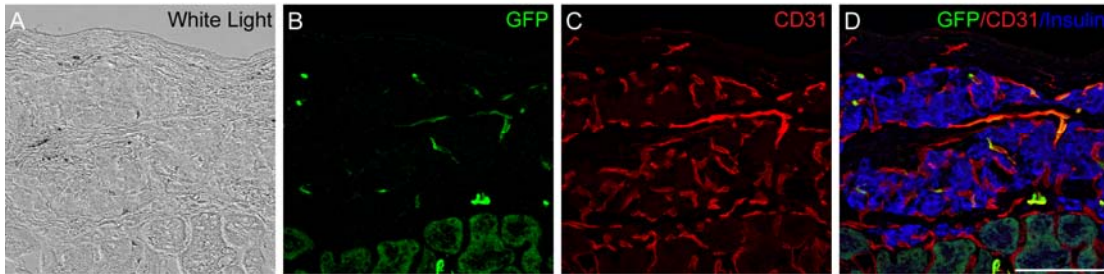
The tissue was fixed in 2.45% paraformaldehyde in 0.1 M sodium cacodylate buffer (pH 7.4) at room temperature (RT) for 3 h and at 4°C overnight. The samples were washed in 0.1 M sodium cacodylate buffer at RT before and after 2 h of postfixation in 2% OsO₄, ethanol dehydrated and embedded in TAAB epoxy resin (Agar Scientific Ltd.). Ultrathin sections were stained with uranyl acetate and lead citrate, and examined using Zeiss EM 902 TEM (Zeiss, Germany).

Supplementary Table 1. The left column displays the percentage of DIECs that have migrated out of the endocrine (insulin positive) areas and were found to contribute to vessels within the surrounding stromal tissue of the graft. The middle and right columns display the vascular area of the endocrine and stromal areas of the grafts, respectively. The p value is indicated for the difference between the middle and the right column of each graft. All values are presented as mean ± SEM, p <0.05 (*), p <0.01 ().**

	% of DIECs located outside of the endocrine graft area	Vascular area of the endocrine graft area (%)	Vascular area of the stromal graft area (%)
Fresh islet grafts, 1 month (n = 5)	45.7 ± 3.9	12.8 ± 0.4**	8.6 ± 0.6
Fresh islet grafts, 5 months (n = 4)	50.6 ± 3.1	12.1 ± 0.7*	8.4 ± 0.6
Cultured islet grafts, 1 month (n = 5)	84.4 ± 5.7	12.2 ± 1.4**	7.4 ± 1.2

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Supplementary Figure 1. *DIECs contribute to the vasculature of fresh islet grafts.* (A-D) Images of a representative immunostained section of a fresh islet graft 5 months following transplantation are shown (n = 5). (A) White light, (B) GFP fluorescence of DIECs, (C) CD31 staining show the total vasculature, (D) insulin staining (blue) in a merged image with the GFP and CD31 stainings. Scale bar correspond to 100 μm .



Supplementary Figure 2. *Metabolic evaluation of AC engrafted syngeneic islets.* Metabolic evaluation 1 month following transplantation of diabetic recipients that achieved normoglycemia after receiving fresh and cultured islets, n = 6 per group. Intraperitoneal glucose tolerance test (IPGTT; 2g/kg after overnight fasting) showed a non-significant trend toward a better clearance for animals transplanted with cultured islets than for those receiving fresh islets, the $\text{AUC}_{\text{glucose}}$ was 18.290 ± 3.116 and $20.960 \pm 1.740 \text{ mg} \times \text{min} \times \text{dL}^{-1}$, respectively.

