

Supplemental Information

Supplemental figure legends

Figure S1 Representative cell culture images and flow cytometry identification of hADSCs. (a) Morphology of ADSCs (scale bar = 100 μ m). (b) Flow cytometry analysis of CD marker expression in second passage. After purification, stem cells were analyzed by fluorescence activated cell sorting to evaluate the level of CD73, CD90, and CD105. Cells were also analyzed for the expression of markers CD45 and CD31 at passage 2 of *in vitro* culture, for that, as expected, the results were negative. The results shown are representative of three independent experiments.

Figure S2 Quality control for human islet isolation and transplantation. (a) Islet yield (b) Islet equivalent number per gram of pancreatic tissue actually digested. (c) GSIS in human islets. (d) Islets were stained with dithizone (left, scale bar = 200 μ m) and immunostained with antibodies against insulin (green) and glucagon (red). Alpha and beta cells were found to be regularly and normally distributed (right). For *in vivo* quality control of isolated human islets, 2000 IEQ islets were transplanted under the kidney capsule of diabetic mice and blood glucose levels (e) and body weight (f) were measured. The kidney containing the graft was removed on days 35 and 54 post-transplantation (arrows).

Figure S3 *In vivo* tumorigenesis. Gross images of mice injected with (a) hADSCs and (b) human induced pluripotent stem cells (hiPSCs). (c) Histology of the region where ADSCs were implanted (scale bar denotes 100 μ m). (d) Histology of tumor formed by transplantation of hiPSC (scale bar denotes 100 μ m).

Supplementary figures

Figure S1

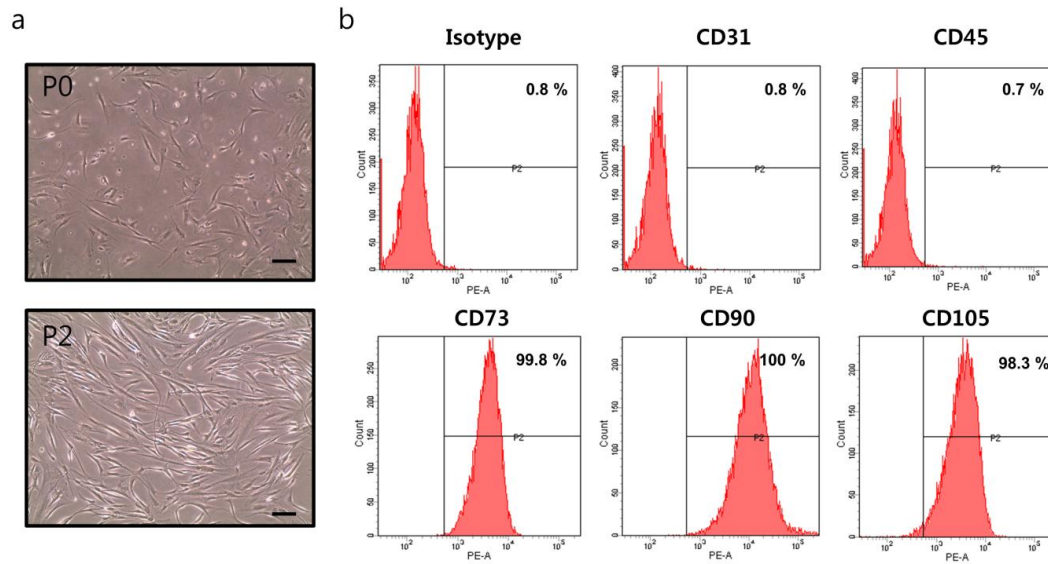


Figure S2

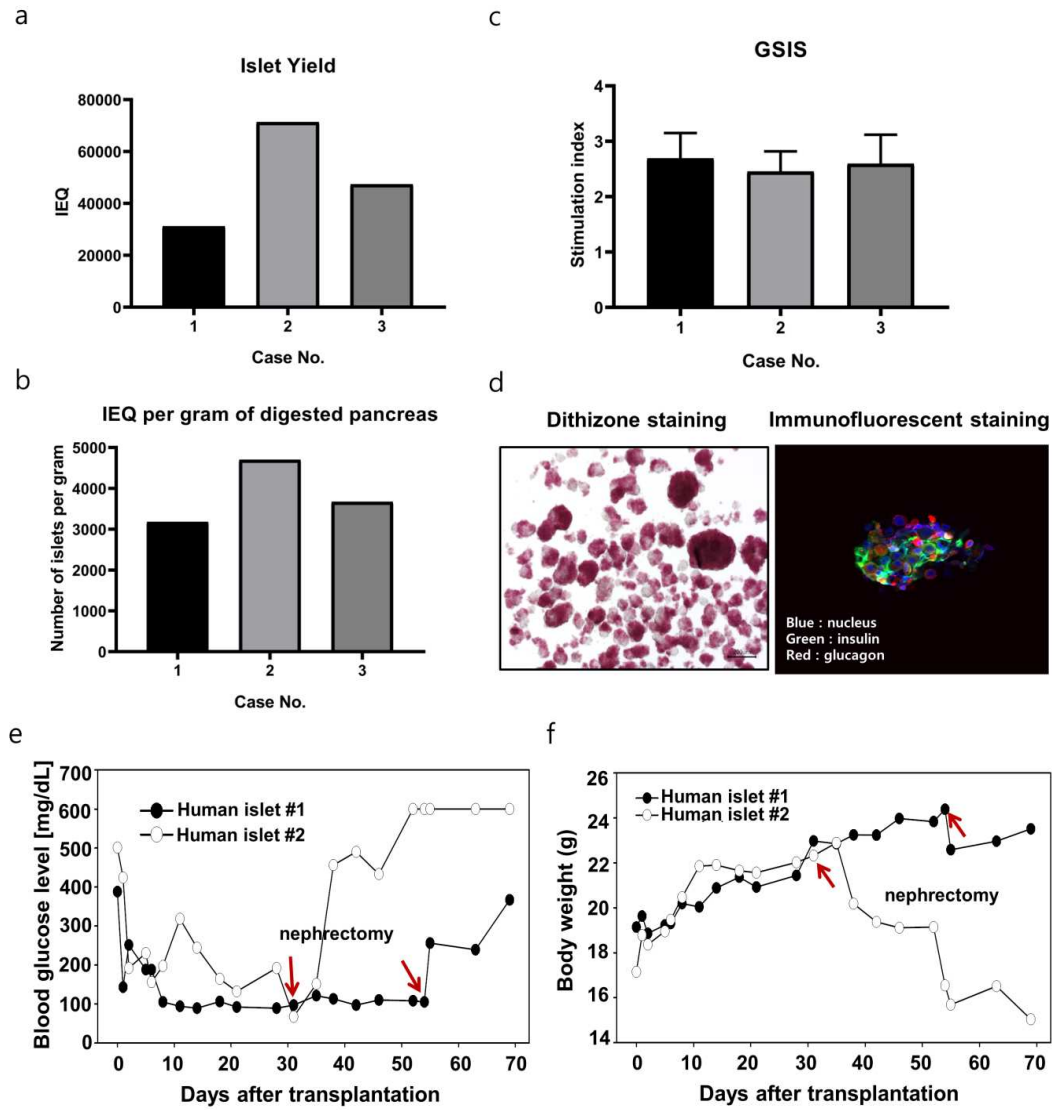
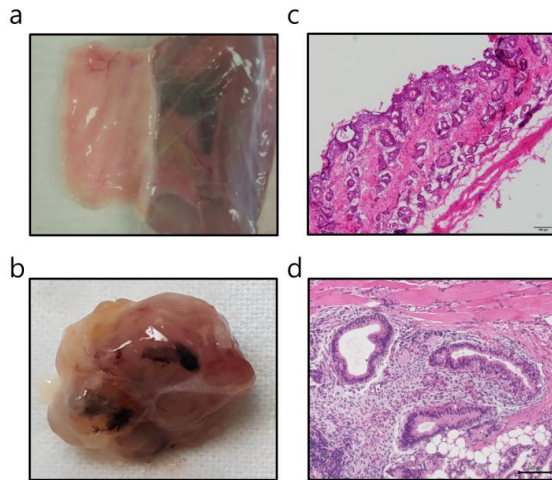


Figure S3

Supplementary Tables

Table S1 Donor data and description of isolation outcome.

Case No.	1 (181130)	2 (181204)	3 (181213)
Weight of Pancreas (g)	22.56	23.21	25.05
Distension time (min)	15	16	20
Digestion time (min)	7	5	4
Final weight of pancreas (g)	9.81	15.18	12.91
Undigested tissue (g)	12.75	8.03	12.14
Before purification	37,124 IEQ	69,391 IEQ	98,830 IEQ
After purification	31,157 IEQ	71,317 IEQ	47,378 IEQ

Table S2 Sequences of primers used in real-time PCR.

Gene	Forward (5' → 3')	Reverse (5' → 3')	Accession No.
Insulin	GCCCAGGCTTTTGTCAAAC A	TCCACCCAGCTCCAGTTGT G	NM_019129.3
TNF- α	AAGCCTGTAGCCCACGTCG TA	GGCACCAGTGTGGTTGT CTTTG	AB185894
IL-1 β	GCAACTGTTCCTGAACTCA ACT	ATCTTTTGGGGTCCGTCAAC T	NM_008361.4
IL-6	CACTTCACAAGTCGGAGGC TTA	GCAAGTGCATCATCGTTGT TCATAC	X54542
VEGF	GCACATAGGAGAGATGAGC TTCC	CTCCGCTCTGAACAAGGCT	M95200.1
Angpt1	CCGAGCCTACTCACAGTAC GACAG	AAATCGGCACCGTGAAGA TCAA	BC067410.1
Angpt2	GGACAGTCATCCAACACCG AGA	CAAATCATTGCCAGCCA GTA	BC027216.1
PDGF	CAAAGGCAAGCACCGAAA GTTA	CCGAATCAGGCATCGAGAC A	AF162784.1
bFGF	GTGCCAACCGGTACCTTGC TA	TCAGTGCCACATACCAACT GGAG	NM_008006.2
PIGF	CCTGTCTGCTGGGAACAAC TCA	CACCTCATCAGGGTATTCA TCCAAG	X96793.1
CD3	CACTCTGGGCTTGCTGATG G	TCATAGTCTGGGTTGGGAA CAGG	NM_007648.5
F4/80	GAGATTGTGGAAGCATCCG AGAC	GATGACTGTACCCACATGG CTGA	X93328.1
β -Actin	GGCTGTATTCCCCTCCATCG	CCAGTTGGTAACAATGCCA TG	NM_007393.5

TNF- α ; tumor necrosis factor-alpha, IL-1 β ; interleukin 1 beta, IL-6; interleukin 6, VEGF; vascular endothelial growth factor, Angpt 1 and 2; angiotensin 1 and 2, PDGF; Platelet-derived growth factor, bFGF; basic fibroblast growth factor, PIGF; placental growth factor, CD3; T cells marker , F4/80; macrophage marker.

Table S3 Cumulative concentration of growth factors and remaining amounts in sponge.

bFGF									
Cumulative concentration (pg/ml)									
Time (h)	EC-Hep				EC				
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	74.87	46.74	75.22	40.71	138.17	123.77	183.20	171.47	
8	120.93	82.46	137.60	92.85	199.17	202.15	262.28	242.85	
24	153.35	118.52	179.97	117.07	248.94	240.86	301.33	277.25	
48	183.14	142.74	214.04	154.46	280.05	273.61	335.07	315.63	
72	237.31	184.79	258.77	188.20	321.76	316.99	378.45	347.72	

HGF									
Cumulative concentration (ng/ml)									
Time (h)	EC-Hep				EC				
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	1.05	1.00	1.20	1.09	2.14	1.75	1.89	1.70	
8	1.42	1.44	1.61	1.51	2.76	2.34	2.46	2.25	
24	1.69	1.71	1.89	1.89	3.12	2.67	2.77	2.54	
48	1.91	1.96	2.14	2.03	3.38	2.91	3.04	2.77	
72	2.12	2.18	2.37	2.24	3.60	3.12	3.26	2.98	

Remaining amount in sponge										
Time (h)	bFGF				HGF					
	EC-Hep		EC		EC-Hep			EC		
72	175.50	177.52	66.52	64.10	1.89	1.67	1.75	0.73	0.83	0.84