SUPPLEMENTAL MATERIAL

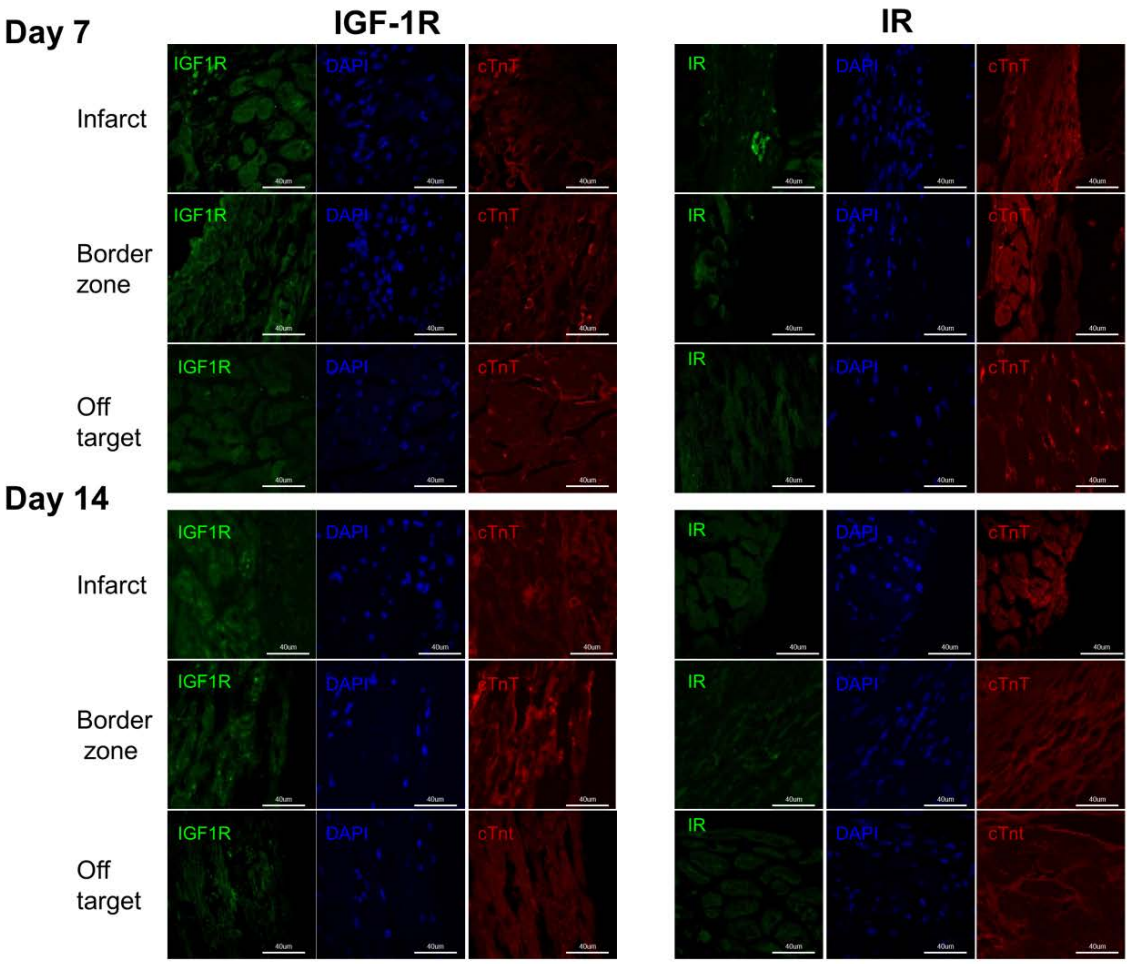

Figure S1. Representative immunohistochemical images of the IGF-1 receptor (IGF-1R) or insulin receptor (IR) 7 and 24 days post myocardial infarction.

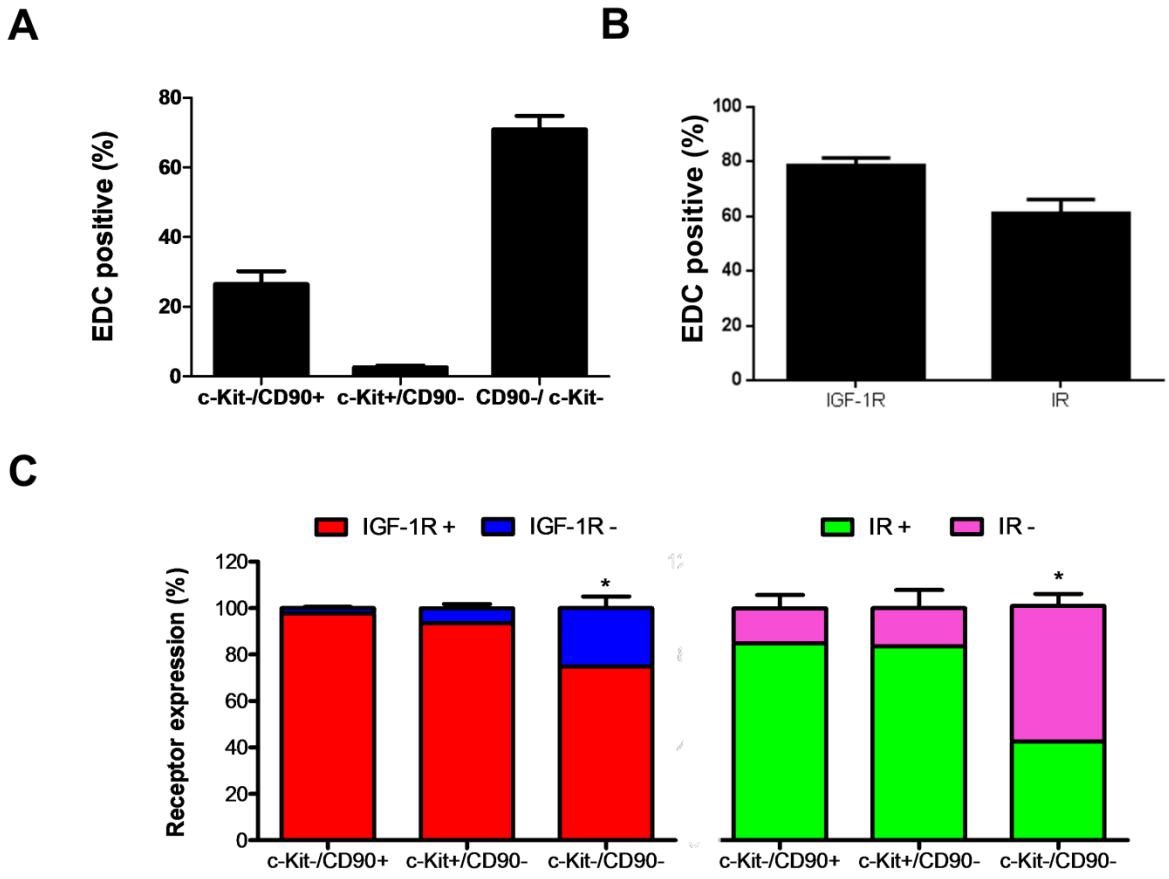

Figure S2. Characterization of the EDC product used for experimentation. A, Flow cytometry demonstrating the sub-fraction of cardiac (c-Kit+) and mesenchymal (CD90+) progenitors within EDCs. N=10 EDC cell lines with 2 technical repeats. B, Flow cytometric analysis demonstrating the overall expression of IGF-1R and IR on human EDCs. Data are means ± SEM; n=3 EDC cell lines with 2 technical repeats. C, Flow cytometry of IGF-1 receptor (IGF-1R) and insulin receptor (IR) co-expression within EDCs subpopulations. Data are means ± SEM; n=3 EDC cell lines with 2 technical repeats.*$p \leq 0.05$ vs. the expected frequency of IGF-1R or IR

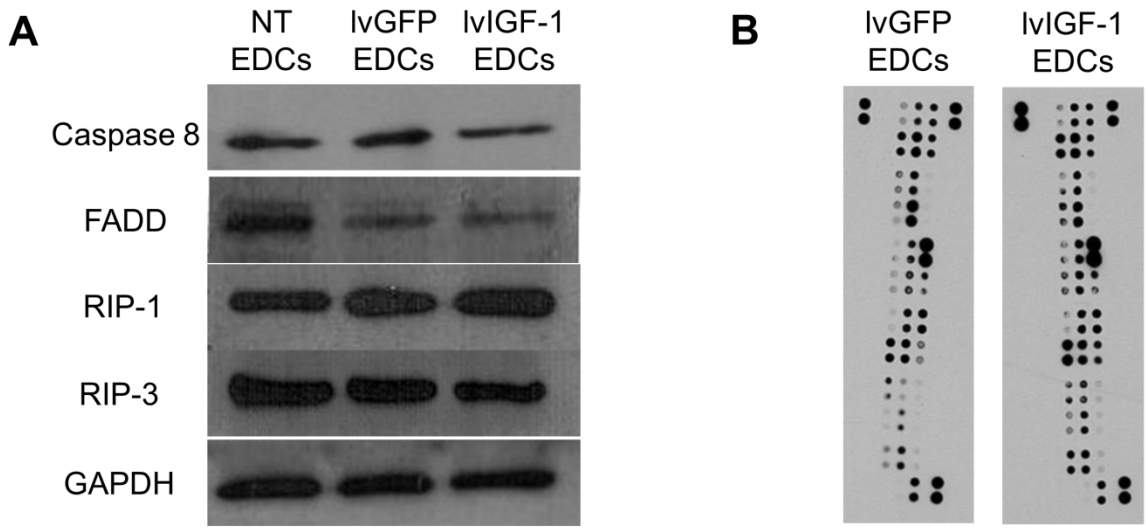

Figure S3. Effects of lvIGF-1 EDC transplantation on apoptosis and necroptosis. A, Representative western blot of proteins from non-transduced (NT), lvGFP and lvIGF-1 transduced EDCs involved in commitment to an apoptotic or necroptotic fate (n=3 EDC lines). B, Representative images of images taken from a commercial human apoptosis proteome profiler array of lvGFP and lvIGF-1 transduced cells.

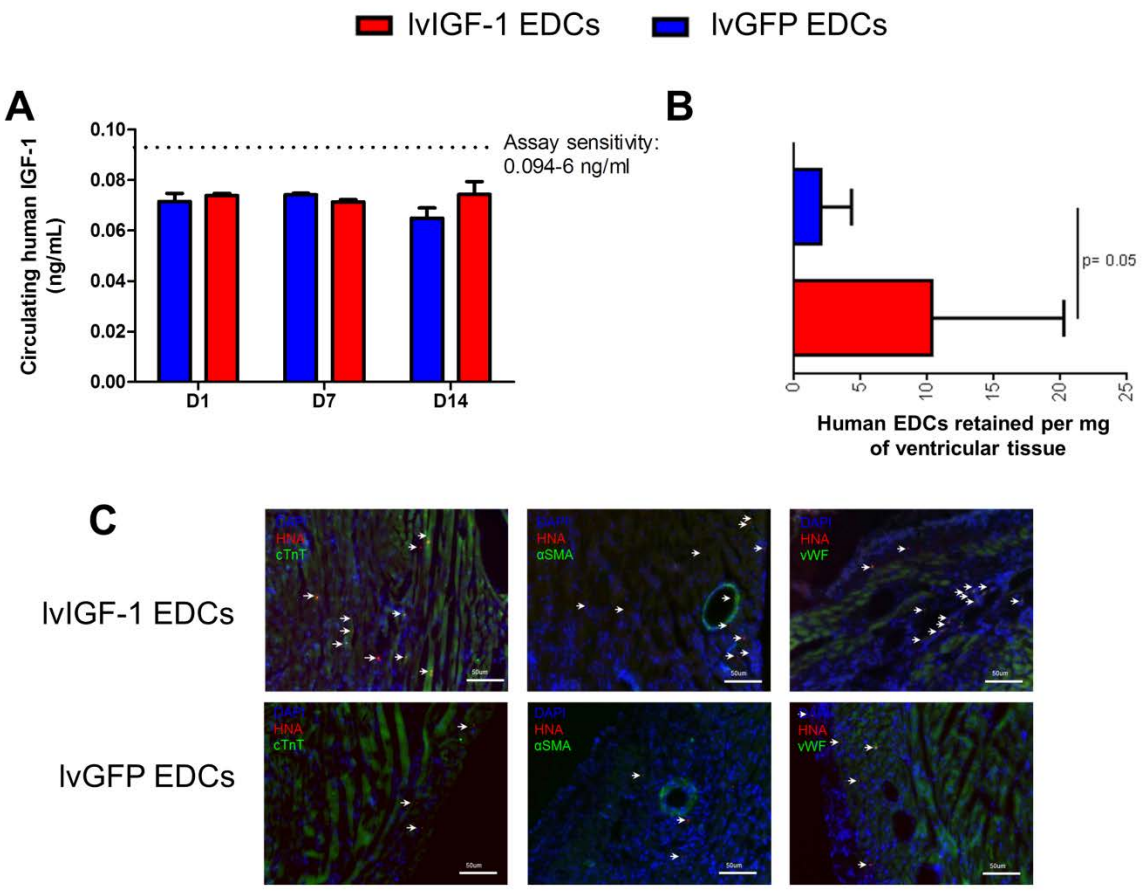

Figure S4. Effects of lvIGF-1 EDC transplantation on systemic levels of IGF-1 and retention of transplanted EDCs. A, Quantification of circulating human IGF-1 protein in mouse plasma after lv-GFP and lv-IGF-1 EDC transplant. B, Quantitative PCR for retained human alu sequences 28 days after myocardial infarction. C, Immunohistochemical analysis of transplanted EDC fate as defined by human nuclear antigen (HNA) co-segregation with markers of cardiomyocyte (cTnT), smooth muscle (αSMA) or endothelial (vWF) lineages 21 days after intra-myocardial injection.

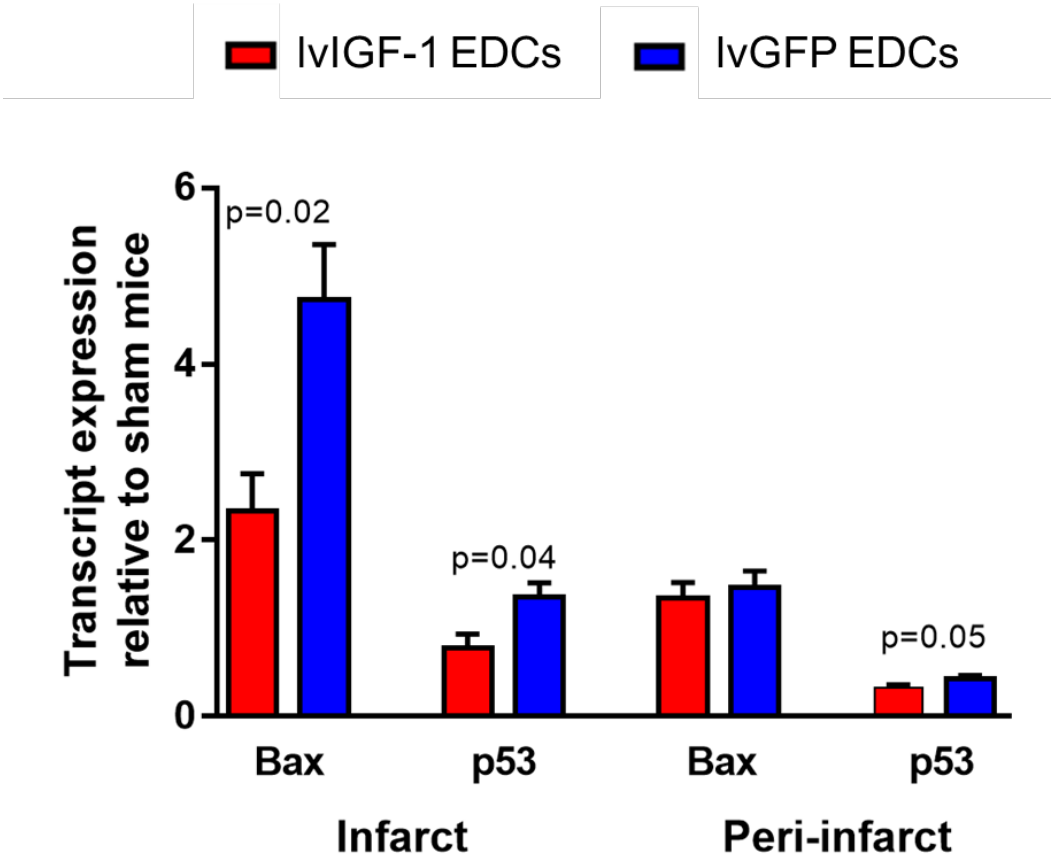

Figure S5. Effects of lvIGF-1 EDC transplantation on pro-apoptotic transcripts in hearts immediately after SPECT quantification of apoptosis. Two days after injection of lvIGF-1 or lvGFP EDCs hearts underwent microdissection into the infarct and peri-infarct zone for qPCR transcript analysis of Bax and p53 expression (n=3 mice).

Column1	All patients (n=10)	In vivo subset (n=6)	P value All patients vs. in vivo subset
Age(yrs)	66±3	64±5	0.71
BMI (kg/m2)	29±2	28±2	0.83
Gender (%male)	90%	83%	1.00
Diabetes	50%	50%	1.00
Hypertension	70%	67%	1.00
Dyslipidemia	80%	83%	1.00
Ongoing smoking	20%	17%	1.00
Thyroid disease	0%	0%	N/A
Peripheral vascular disease	20%	17%	1.00
Coronary artery disease	90%	100%	1.00
History of MI	50%	50%	1.00
Vavular heart disease	50%	33%	1.00
Congrestive heart failure	10%	17%	1.00
NYHA class	1.8±0.5	1.5±0.5	0.68
LV ejection fraction	50±5	50±5	1.0
CCS class	3.1±0.3	3.4±0.4	0.94
Creatine (umol/L)	90±10	92±13	0.90
Hemoglobin A1c (diabetes history: no diabetes history, %)	7.3±0.6:5.6±0.1*	6.7±0.6:5.7±0.1	0.58:0.75
Fasting glucose (diabetes history: no diabetes history; mmol/L)	6.8±0.6:5.7±0.5	6.3±0.8:5.9±0.9	0.66:0.77
Medications:			
Anti-platelet therapy	90%	83%	1.00
Beta-blocker	90%	83%	1.00
Statins	90%	83%	1.00
ACEI or ARB	30%	33%	1.00

Table S1. Clinical characteristics of atrial appendage donors. Body mass index, BMI; myocardial infarction, MI; New York Heart Association, NYHA; left ventricle, LV; Canadian Cardiovascular Society, CCS; angiotensin-converting enzyme inhibitors, ACEI; angiotensin receptor blockers, ARB. *$p \leq 0.05$ vs. diabetic patients.

		End Diastolic Volume (μL)	End Systolic Volume (μL)	Stroke Volume (μL)	Ejection Fraction (%)
1 week post MI	vehicle	69.8±5.6	48.5±3.9	22.3±2.2	31.1±1.8
	lv-GFP transduced CSCs	73.1±4.1	52.3±3.1	20.8±1.3	28.5±1.2
	lv-IGF-1 transduced CSCs	70.3.7±2.3	49.1±1.6	21.2±1.0	30.2±0.9
3 weeks post MI	vehicle	79.8±11.2	41.5±9.7	18.3±1.8	25.6±2.2
	lv-GFP transduced CSCs	82.4±8.21	55.7±6.0	26.7±2.3*	32.7±0.6*
	lv-IGF-1 transduced CSCs	76.1±6.3	47.5±4.2	28.6±2.2*†	37.8±0.7*†
4 weeks post MI	vehicle	85.6±10.0	66.4±8.7	19.1±1.8	25.1±1.4
	lv-GFP transduced CSCs	77.1±3.1	48.7±2.4	28.5±1.0*	37.0±0.8*
	Lv-IGF-1 transduced CSCs	78.9±4.4	52.9±3.7	36.0±1.1*†	41.0±1.5*†

Table S2. Echocardiographic measurements over the 4 week follow-up period. *$p \leq 0.05$ vs. vehicle, †$p \leq 0.05$ vs. lvGFP transduced EDCs.