

Table 5. All genes differentially expressed in failing (F) and nonfailing (NF) hearts, classified into functional groups

GenBank accession no.	Name	Mean of NF, average difference units	Mean of F, average difference units	Fold change
Biomarkers				
M31776	BNP	751 ± 367	5,956 ± 1,908	↑ 7.9
M54951	ANF	1,477 ± 1,228	6,249 ± 1,434	↑ 4.2
M25296	ANF precursor	2,108 ± 751	6,986 ± 1,137	↑ 3.3
Myofibrils				
M86406	α ₂ -Actinin	988 ± 335	1,655 ± 510	↑ 1.7
U53445	Myosin heavy chain homolog	170 ± 54	285 ± 100	↑ 1.7
AF001548	Myosin heavy chain 11	615 ± 147	1,039 ± 369	↑ 1.7
M69181	Nonmuscle myosin heavy chain B	480 ± 68	984 ± 228	↑ 2.0
D17408	Calponin	1,931 ± 1,337	726 ± 2,825	↓ 2.7
J00073	α-Cardiac actin	13,060 ± 3,960	7,684 ± 2,369	↓ 1.7
Extracellular/Cytoskeletal				
M55998	α1 collagen type I	716 ± 319	2,667 ± 1,199	↑ 3.7

Z74616	Prepro- α 2(I) collagen	98 \pm 79	485 \pm 312	\uparrow 4.9
U21128	Lumican	462 \pm 158	1,753 \pm 561	\uparrow 3.8
X06700	Pro- α 1(III) collagen	156 \pm 37	510 \pm 229	\uparrow 3.3
L25286	α 1 Type 15 collagen	176 \pm 26	365 \pm 123	\uparrow 2.1
U05291	Cardiac fibromodulin	406 \pm 47	883 \pm 452	\uparrow 2.2
X02761	Fibronectin, alternative splice 1	283 \pm 139	486 \pm 113	\uparrow 1.7
X52947	Connexin 43	800 \pm 352	1,440 \pm 697	\uparrow 1.8
HG2755	T-plastin	87 \pm 54	234 \pm 98	\uparrow 2.7
U77718	Desmosome associated protein pinin	114 \pm 37	202 \pm 28	\uparrow 1.8
U32944	Dynein	590 \pm 188	1,068 \pm 235	\uparrow 1.8
X06956	Tubulin α 1	1,574 \pm 715	927 \pm 205	\downarrow 1.7
K03460	α -tubulin H2	906 \pm 194	529 \pm 168	\downarrow 1.7
Proteolysis/Stress				
Z19585	Thrombospondin-4	293 \pm 101	1,040 \pm 425	\uparrow 3.5
L02950	M μ -crystallin	1,327 \pm 372	3,389 \pm 648	\uparrow 2.6
D87258	Serine protease 11	571 \pm 130	1,057 \pm 96	\uparrow 1.8
D55696	Cysteine protease	418 \pm 318	808 \pm 354	\uparrow 1.9
M60974	DNA inducible gene GADD45	375 \pm 127	624 \pm 104	\uparrow 1.7
L08069	HSP, <i>Escherichia coli</i> DnaJ homolog	184 \pm 106	379 \pm 68	\uparrow 2.1
M84526	Adipsin	1,590 \pm 611	768 \pm 516	\downarrow 2.1

M14539	Factor XIII subunit	915 ± 493	208 ± 614	↓ 4.4
Metabolism				
S68805	Glycine amidinotransferase	239 ± 32	584 ± 249	↑ 2.4
U37143	P450 monooxygenase	526 ± 120	946 ± 117	↑ 1.8
U03688	Dioxin-inducible cytochrome P450	157 ± 74	268 ± 111	↑ 1.7
L05779	Cytosolic epoxide hydrolase	186 ± 23	365 ± 91	↑ 2.0
X79440	NADP ⁺ dependent malic enzyme	163 ± 54	308 ± 69	↑ 1.9
U21931	Fructose-1,6-biophosphatase	138 ± 132	324 ± 127	↑ 2.3
M36341	ADP-ribosylatoin factor 4	633 ± 97	1,046 ± 265	↑ 1.7
M82809	Annexin IV	142 ± 49	247 ± 51	↑ 1.7
X76648	Glutaredosin	557 ± 108	941 ± 250	↑ 1.7
M12963	Alcohol dehydrogenase I	723 ± 188	150 ± 239	↓ 4.8
J02611	Apolipoprotein D	10,417 ± 1,134	5,895 ± 2,007	↓ 1.8
S80437	Fatty acid synthase	259 ± 162	55 ± 108	↓ 4.6
HG3945	Phospholipid transfer protein	409 ± 130	12 ± 203	↓ 35
L00389	Cytochrome	600 ± 221	363 ± 95	↓ 1.7
D00632	Glutathione peroxidase	7,256 ± 1,701	4,277 ± 763	↓ 1.7
X59834	Glutamine synthase	1,458 ± 514	787 ± 124	↓ 1.9
M96859	Dipeptidyl aminopeptidase-like protein	286 ± 90	159 ± 91	↓ 1.8
Apoptosis/Inflammatory				

M34057	TGFβ binding protein 1(LTBP1)	389 ± 161	799 ± 246	↑ 2.1
Z37976	TGFβ binding protein 2(LTBP2)	212 ± 50	512 ± 83	↑ 2.4
U19495	Intercrine-α (SDF1)	156 ± 58	282 ± 131	↑ 1.8
X64177	Metallothionein	2,799 ± 747	1,639 ± 853	↓ 1.7
X76717	Metallothionein 1L	2,626 ± 680	1,490 ± 413	↓ 1.8
X68733	α ₁ -antichymotrypsin	1,015 ± 234	493 ± 138	↓ 2.1
Z22970	Hemoglobin scavenger receptor	667 ± 105	313 ± 56	↓ 2.1
J03801	Lysozyme	1,169 ± 402	537 ± 150	↓ 2.2
X14008	Lysozyme	1,102 ± 261	493 ± 138	↓ 2.1
M19045	Lysozyme	1,546 ± 558	709 ± 214	↓ 2.2
Signal Tranduction				
X57025	Insulin-derived growth factor 1	98 ± 26	205 ± 103	↑ 2.1
U10550	Gem GTPase	131 ± 29	359 ± 114	↑ 2.7
M59287	CDC-like kinase 1	126 ± 45	341 ± 84	↑ 2.7
X59798	Cyclin D1	336 ± 166	813 ± 216	↑ 2.4
M65292	Factor H related gene	445 ± 100	898 ± 348	↑ 2.0
X62048	Wee 1 tyrosine kinase	141 ± 47	291 ± 116	↑ 2.1
M27436	Tissue factor 3	139 ± 40	286 ± 169	↑ 2.1
X52541	Early response protein 1	129 ± 49	311 ± 112	↑ 2.4
U66661	GABA-a receptor, ε subunit	176 ± 40	366 ± 93	↑ 2.1

X89066	Transient receptor potential channel 1	169 ± 70	311 ± 98	↑ 1.8
M97675	Receptor tyrosine-like kinase-like orphan receptor 1	194 ± 44	341 ± 66	↑ 1.8
U31912	Orphan nuclear receptor	266 ± 131	469 ± 215	↑ 1.8
L42379	Bone-derived growth factor	729 ± 476	20 ± 364	↓ 36
L19267	Myotonin protein kinase	1,072 ± 709	217 ± 186	↓ 4.9
M22430	Phospholipase A2	1,563 ± 673	304 ± 92	↓ 5.1
X07315	Nuclear transport factor	255 ± 127	32 ± 152	↓ 7.8
U48707	Protein phosphatase inhibitor	1,412 ± 171	739 ± 85	↓ 1.9
M80359	MAP/microtubule affinity regulating kinase 3	319 ± 72	96 ± 112	↓ 3.3
Y00285	IGF-II receptor	498 ± 170	267 ± 150	↓ 1.9
Transcription				
D13666	Osteoblast specific factor 2	40 ± 39	474 ± 281	↑ 12.0
M92934	Connective tissue growth factor	246 ± 110	794 ± 435	↑ 3.2
X59065	Fibroblast specific factor 2	210 ± 72	425 ± 135	↑ 2.0
L08895	MADS/MEF2-family transcription factor	153 ± 25	295 ± 97	↑ 1.9
M57399	Nerve growth factor 1	400 ± 91	683 ± 253	↑ 1.7
M60278	Heprin-binding EGF-like growth factor	253 ± 110	530 ± 211	↑ 2.1
M74719	Transcription factor 4	321 ± 77	562 ± 222	↑ 1.7

X72889	Human brahma related gene 1	321 ± 159	550 ± 175	↑ 1.7
J02621	Non-histone chromosomal protein, HMG-14	306 ± 73	514 ± 141	↑ 1.7
X13546	Non-histone chromosomal protein, HMG-17	627 ± 149	1,306 ± 371	↑ 2.1
U50950	Origin recognition complex, subunit 3	180 ± 78	300 ± 79	↑ 1.7
L13391	Regulation of G protein signaling 2	141 ± 73	271 ± 75	↑ 1.9
U81001	SNRPN	213 ± 101	405 ± 129	↑ 1.9
X74874	RNA polymerase II largest subunit	151 ± 40	257 ± 75	↑ 1.7
U31903	CREB-related protein	350 ± 124	595 ± 264	↑ 1.7
Immune System				
K02765	Complete component C3	1,071 ± 332	230 ± 110	↓ 4.6
X72177	Complete component C6	834 ± 129	1,401 ± 311	↑ 1.7
M14058	Complement C1r	1,013 ± 300	564 ± 176	↓ 1.8
K03430	Complete C1qB-chain	566 ± 196	273 ± 194	↓ 2.1
M33195	Fc-epsilon-receptor γ -chain	316 ± 64	67 ± 64	↓ 4.7
U42031	Progesterone receptor-associated immunophilin	456 ± 167	169 ± 109	↓ 2.7
M26311	Cystic fibrosis antigen	294 ± 114	22 ± 68	↓ 13.0
Unknown				

Z24724	Poly(A) site DNA	196 ± 81	540 ± 114	↑ 2.7
X82456	Lim and SH3 domain protein 1	294 ± 107	511 ± 92	↑ 1.7
D38548	KIAA0076	355 ± 151	153 ± 88	↓ 2.3
D28589	KIAA00167	1,084 ± 343	526 ± 117	↓ 2.1
D87451	KIAA0262	1,904 ± 373	1,135 ± 309	↓ 1.7
X59766	Zinc- α 2-glycoprotein	366 ± 101	199 ± 65	↓ 1.8

Genes in each class were ranked by fold change and expression level.