Gene	Protein	Inheritance	Disease Association
ABCC9	ATP-binding cassette, subfamily C, member 9	AD	DCM, Cantu syndrome
ACTC1	Actin, alpha, cardiac muscle	AD	CHD, DCM, HCM, LVNC
ACTN2	Actinin, alpha-2	AD	DCM, HCM
ANKRD1	Ankyrin repeat domain-containing protein 1	AD	HCM, DCM
BRAF	v-raf murine sarcoma viral oncogene homolog b1	AD	Noonan/CFC/Costello syndrome
CAV3	Caveolin 3	AD, AR	HCM, LQTS, LGMD, Tateyama-type distal myopathy, rippling muscle disease
CBL	Cas-Br-M murine ecotropic retroviral transforming sequence homolog	AD	Noonan syndrome like disorder
CRYAB	Crystallin, alpha-B	AD, AR	DCM, myofibrillar myopathy
CSRP3	Cysteine-and glycine-rich protein 3	AD	HCM, DCM
DES	Desmin	AD, AR	DCM, ARVC, myofibrillar myopathy, RCM with AV block, neurogenic scapuloperoneal syndrome Kaeser type, LGMD
DSC2	Desmocollin 2	AD, AR	ARVC, ARVC plus skin and hair findings
DSG2	Desmoglein 2	AD	ARVC
DSP	Desmoplakin	AD, AR	ARVC, DCM, Carvajal syndrome
DTNA	Dystrobrevin, alpha	AD	LVNC, CHD
GLA	Galactosidase, alpha	X-linked	Fabry disease
HRAS	v-Ha-Ras Harvey rat sarcoma viral oncogene homolog	AD	Costello syndrome
JUP	Junction plakoglobin	AD, AR	ARVC, Naxos disease
KRAS	v-Ki-Ras Kirsten rat sarcoma viral oncogene homolog	AD	Noonan/CFC/Costello syndrome
LAMA4	Laminin, alpha-4	AD	DCM
LAMP2	Lysosome-associated member protein 2	X-linked	Danon disease
LDB3	LIM domain-binding 3	AD	DCM, LVNC, myofibrillar myopathy
LMNA	Lamin A/C	AD, AR	DCM, EMD, LGMD, congenital muscular dystrophy (see Online Mendelian Inheritance in Man (OMIM) for full listing)
MAP2K1	Mitogen-activated protein kinase kinase 1	AD	Noonan/CFC
MAP2K2	Mitogen-activated protein kinase kinase 2	AD	Noonan/CFC
MYBPC3	Myosin-binding protein-C, cardiac	AD	HCM, DCM
MYH6	Myosin, heavy chain 6, cardiac muscle, alpha		HCM, DCM
MYH7	Myosin, heavy chain 7, cardiac muscle, beta	AD	HCM, DCM, LVNC, myopathy
MYL2	Myosin, light chain 2, regulatory, cardiac, slow	AD	HCM
MYL3	Myosin, light chain 3, alkali, ventricular, skeletal, slow	AD, AR	HCM
MYLK2	Myosin light chain kinase 2	AD	HCM
MYOZ2	Myozenin 2	AD	HCM
MYPN	Myopalladin	AD	HCM, DCM

NEXN	Nexilin	AD	HCM, DCM
NRAS	Neuroblastoma ras viral oncogene homolog	AD	Noonan syndrome
PKP2	Plakophilin 2	AD	ARVC
PLN	Phospholamban	AD	HCM, DCM
PRKAG2	Protein kinase, AMP-activated, noncatalytic, gamma2	AD	HCM, Wolff-Parkinson-White syndrome
PTPN11	Protein-tyrosine phosphatase, nonreceptor-type, 11	AD	Noonan/CFC/LEOPARD syndrome
RAF1	v-raf-1 murine leukemia viral oncogene homolog 1	AD	Noonan/LEOPARD syndrome
RBM20	RNA-binding motif protein 20	AD	DCM
RYR2	Ryanodine receptor 2	AD	ARVC, CPVT, LQTS
SCN5A	Sodium channel, voltage gated, type V, alpha subunit	AD	Brugada syndrome, DCM, heart block, LQTS, SSS, SIDS
SGCD	Sarcoglycan, delta	AD, AR	DCM, LGMD
SHOC2	Suppressor of clear homolog (C elegans)	AD	Noonan syndrome like with loose anagen hair
SOS1	Son of sevenless homolog 1 (Dropsophil)	AD	Noonan syndrome
TAZ	Tafazzin	X-linked	Barth syndrome, LVNC, DCM
TCAP	Titin-cap (telethonin)	AD, AR	HCM, DCM, LGMD
TMEM43	Transmembrane protein 43	AD	ARVC, EMD
TNNC1	Tropronin C, slow	AD	HCM, DCM
TNNI3	Troponin I, cardiac	AD, AR	DCM, HCM, RCM
TNNT2	Tropronin T2, cardiac	AD	HCM, DCM, RCM, LVNC
TPM1	Tropomyosin 1	AD	HCM, DCM, LVNC
TTN	Titin	AD, AR	HCM, DCM, ARVC, myopathy
TTR	Transthyretin	AD	Transthyretin-related amyloidosis
VCL	Vinculin	AD	HCM, DCM

Table 4. Genes included in the Comprehensive Cardiomyopathy Multi-Gene Panel

Abbreviations: Hypertrophic cardiomyopathy (HCM), dilated cardiomyopathy (DCM), arrhythmogenic right ventricular cardiomyopathy (ARVC), left ventricular noncompaction cardiomyopathy (LVNC), restrictive cardiomyopathy (RCM), limb-girdle muscular dystrophy (LGMD), Emory muscular dystrophy (EMD), congenital heart defect (CHD), sudden infant death syndrome (SIDS), long QT syndrome (LQTS), sick sinus syndrome (SSS), autosomal dominant (AD), autosomal recessive (AR), catecholaminergic polymorphic ventricular tachycardia (CPVT), cardiofaciocutaneous (CFC) syndrome, lentigines, electrocardiographic conduction abnormalities, ocular hypertelorism, pulmonic stenosis, abnormal genitalia, retardation of growth, and deafness (LEOPARD)