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| **ARRHYTHMIA EXOME PANEL** |
| **Gene**  | **Inheritance** | **OMIM** | **Arrhythmia Associated Phenotype** | **Other Phenotypes** |
|
| ***ANK2*** | AD | [106410](http://www.omim.org/entry/106410) | Long QT syndrome 4 |   |
| ***CACNA1C*** | AD | [114205](http://www.omim.org/entry/114205) | Brugada syndrome 3 | Timothy syndrome |
| ***CACNA1D*** | AR | [114206](http://www.omim.org/entry/114206) | Sinoatrial node dysfunction | Deafness; Primary aldosteronism, seizures, and neurologic abnormalities (AD) |
| ***CACNB2*** | AD | [600003](http://www.omim.org/entry/600003) | Brugada syndrome 4 |   |
| ***CALM1*** | AD | [114180](http://www.omim.org/entry/114180) | Long QT syndrome 14 | Ventricular tachycardia, catecholaminergic polymorphic, 4 |
| ***CALM2*** | AD | [114182](http://www.omim.org/entry/114182) | Long QT syndrome 15 |   |
| ***DPP6*** | AD | [126141](http://www.omim.org/entry/126141) | Ventricular fibrillation, paroxysmal familial 2 |   |
| ***GJA5*** | AD | [121013](http://www.omim.org/entry/121013) | Atrial fibrillation, familial 11 |   |
| ***GNAI2*** | AD | [139360](http://www.omim.org/entry/139360) | Ventricular tachycardia, idopathic |   |
| ***GPD1L*** | AD | [611778](http://www.omim.org/entry/611778) | Brugada syndrome 2 |   |
| ***HCN4*** | AD | [605206](http://www.omim.org/entry/605206) | Brugada syndrome 8 |   |
| ***KCNA5*** | AD | [176267](http://www.omim.org/entry/176267) | Atrial fibrillation, familial 7 |   |
| ***KCND3*** | AD | [605411](http://www.omim.org/entry/605411) | Brugada syndrome 9 |   |
| ***KCNE1*** | AD | [176261](http://www.omim.org/entry/176261) | Long QT syndrome 5 | Jervell and Lange-Nielsen syndrome 2 |
| ***KCNE2*** | AD | [603796](http://www.omim.org/entry/603796) | Atrial fibrillation, familial 4; Long QT syndrome 6 |   |
| ***KCNE3*** | AD | [604433](http://www.omim.org/entry/604433) | Brugada syndrome 6 |   |
| ***KCNH2*** | AD | [152427](http://www.omim.org/entry/152427) | Long QT syndrome 2; Short QT syndrome 1 |   |
| ***KCNJ2*** |  AD  | [600681](http://www.omim.org/entry/600681) | Atrial fibrillation, familial, 9; Short QT syndrome 3  | Andersen syndrome |
| ***KCNJ5*** |  AD | [600734](http://www.omim.org/entry/600734) | Long QT syndrome 13 | Hyperaldosteronism, familial, type III |
| ***KCNJ8*** | AD | [600935](http://www.omim.org/entry/600935) | Susceptibility to Brugada syndrome |   |
| ***KCNQ1*** | AD/AR  | [607542](http://www.omim.org/entry/607542) | Long QT syndrome 1; Atrial fibrillation, familial 3; Short QT syndrome 1 | Jervell and Lange-Nielsen syndrome |
| ***NKX2-5*** | AD/AR  | [600584](http://www.omim.org/entry/600584) | Atrial septal defect 7, with or without AV conduction defects | Conotruncal heart malformations |
| ***NPPA*** | AD/AR  | [108780](http://www.omim.org/entry/108780) | Atrial fibrillation, familial, 6 |   |
| ***SCN1B*** | AD | [600235](http://www.omim.org/entry/600235) | Atrial fibrillation, familial, 13; Brugada syndrome 5 |   |
| ***SCN2B*** | AD | [601327](http://www.omim.org/entry/601327) | Atrial fibrillation, familial, 14 |   |
| ***SCN3B*** | AD | [608214](http://www.omim.org/entry/608214) | Atrial fibrillation, familial, 16; Brugada syndrome 7 |   |
| ***SCN4B*** | AD | [608256](http://www.omim.org/entry/608256) | Atrial fibrillation, familial, 17; Long QT syndrome 10 |   |
| ***SNTA1*** | AD | [601017](http://www.omim.org/entry/601017) | Long QT syndrome 12 |   |
| ***TRPM4*** | AD | [606936](http://www.omim.org/entry/606936) | Progressive familial heart block, type IB |   |
| ***ABCC9*** | AD | [601439](http://www.omim.org/entry/601439) | Atrial fibrillation, familial, 12 | Cardiomyopathy, dilated, 10 |
| ***CASQ2*** | AD/AR  | [114251](http://www.omim.org/entry/114251) | Ventricular tachycardia, catecholaminergic polymorphic, 2 |   |
| ***CAV3*** | AD | [601253](http://www.omim.org/entry/601253) |  Long QT syndrome 9 | Cardiomyopathy, familial hypertrophic; Myopathy, distal, Tateyama type |
| ***DES*** | AD | [125660](http://www.omim.org/entry/125660) | Ventricular tachycardia, catecholaminergic polymorphic | Cardiomyopathy, dilated, 1I |
| ***DSC2*** | AD | [125645](http://www.omim.org/entry/125645) | Arrhythmogenic right ventricular dysplasia 11 |   |
| ***DSG2*** | AD | [125671](http://www.omim.org/entry/125671) | Arrhythmogenic right ventricular dysplasia 10 | Cardiomyopathy, dilated, 1BB |
| ***DSP*** | AD | [125647](http://www.omim.org/entry/125647) | Arrhythmogenic right ventricular dysplasia 8; Cardiomyopathy, dilated, with woolly hair and keratoderma | Epidermolysis bullosa, lethal acantholytic |
| ***EMD*** | XL | [300384](http://www.omim.org/entry/300384) | Cardiomyopathy, dilated  | Emery-Dreifuss muscular dystrophy 1 |
| ***GLA*** | XL | [300644](http://www.omim.org/entry/300644) | Cardiomyopathy, hypertrophic | Fabry disease |
| ***LDB3*** | AD | [605906](http://www.omim.org/entry/605906) | Cardiomyopathy, dilated, 1C, with or without LVNC; Cardiomyopathy, hypertrophic, 24; Left ventricular noncompaction 3 | Myopathy, myofibrillar, 4 |
| ***LMNA*** | AD | [150330](http://www.omim.org/entry/150330) | Cardiomyopathy, dilated, 1A | Emery-Dreifuss muscular dystrophy 3 |
| ***MYH6*** | AD | [160710](http://www.omim.org/entry/160710) |  Cardiomyopathy, dilated, 1EE; Cardiomyopathy, hypertrophic, 14 | Atrial septal defect 3 |
| ***PKP2*** | AD | [602861](http://www.omim.org/entry/602861) | Arrhythmogenic right ventricular dysplasia 9 |   |
| ***PLN*** | AD | [172405](http://www.omim.org/entry/172405) | Cardiomyopathy, dilated, 1P; Cardiomyopathy, hypertrophic, 18 |   |
| ***PRKAG2*** | AD | [602743](http://www.omim.org/entry/602743) | Cardiomyopathy, hypertrophic 6 |  Glycogen storage disease of heart, lethal congenital; Wolff-Parkinson-White syndrome |
| ***RBM20*** | AD | [613171](http://www.omim.org/entry/613171) | Cardiomyopathy, dilated, 1DD |   |
| ***RYR2*** | AD | [180902](http://www.omim.org/entry/180902) | Arrhythmogenic right ventricular dysplasia 2; Ventricular tachycardia, catecholaminergic polymorphic, 1 |   |
| ***SCN5A*** | AD | [600163](http://www.omim.org/entry/600163) | Atrial fibrillation, familial, 10; Brugada syndrome 1; Long QT syndrome 3 |   |
| ***TMEM43*** | AD | [612048](http://www.omim.org/entry/612048) | Arrhythmogenic right ventricular dysplasia 5 | Emery-Dreifuss muscular dystrophy 7 |
| ***TNNT2*** | AD | [191045](http://www.omim.org/entry/191045) | Cardiomyopathy, dilated, 1D; Cardiomyopathy, familial restrictive, 3; Cardiomyopathy, hypertrophic, 2; Left ventricular noncompaction 6 |   |
| ***TRDN*** | AR | [603283](http://www.omim.org/entry/603283) | Ventricular tachycardia, catecholaminergic polymorphic, 5  |   |
| ***TTN*** | AR | [188840](http://www.omim.org/entry/188840) | Cardiomyopathy, dilated, 1G; Cardiomyopathy, familial hypertrophic, 9 | Myopathy, early-onset, with fatal cardiomyopathy |