SUPPLEMENTAL MATERIAL

Supplemental Table 1. Previously Reported *LAMP2* Mutations Causing Danon Disease. Locations of these mutations are visually displayed in **Figure 2**.

Location	Mutation	Effect-mechanism	Reference
Promoter	c.-30_-22delCGCCGCCGT		[1]
5'UTR + Exon 1	34kb deletion	Large deletion	[2]
Exon 1	c.14 delG	Frameshift	[3]
Exon 1	c.36_42delAGGGCTC	Frameshift	[4]
Exon 1	c.56 T>G	Missense (L19R)	Our database
Exon 1	c.1-?_64+?	Large deletion	[1]
IVS-1	c.64+1 G>A	Splicing	[5]
IVS-1	c.64+1 G>T	Splicing	[6]
IVS-1	c.65-2 A>G	Splicing	[6]
Exon 2	c.102-103 delAG	Frameshift	[7]
Exon 2	c.137 G>A	Stop codon	[8]
Exon 2	c.138 G>A	Stop codon	[9]
Exon 2	c.179 delC	Frameshift	[10]
IVS-2	c.183+1 G>A	Splicing	[1]
Exon 3	c.184-190delAAAACTG	Frameshift	Our database
Exon 3	c.189-190delTG	Frameshift	[11]
Exon 3	c.241 delG	Frameshift	[12]
Exon 3	c.247 C>T	Stop codon	[1]
Exon 3	c.257_258 delCC	Frameshift	[13]
Exon 3	c.288_289 delTT	Frameshift	[14]
Exon 3	c.293 G>A	Stop codon	[15]
Exon 3	c.294 G>A	Stop codon	[16, 17]
Exon 3	c.320_321 insCATC	Frameshift	[13]
Exon 3	c.327 T>A	Stop codon	[6]
Exons 4 and 5	c.397 + 1822_742-705dup6404	Duplication	[18]
Exons 4–10	c.398-?_1233+?del	Large deletion	[2]
Exon 4	c.405-406 insT	Frameshift	Our database
Exon 4	c.440 T>A	Stop codon	[3]
Exon 4	c.467 T>G	Stop codon	[19]
Exon 4	c.470 C>G	Stop codon	[20, 21]
Exon 4	c.507 G>A	Stop codon	[1]
Exon 4	c.520 C>T	Stop codon	[4]
Exon 5	c.573 delA	Frameshift	[22]
Exon 5	c.680–701 del	Frameshift	[16]
Exon 5	c.716 delT	Frameshift	[23]
Exon 5	c.737 A>G	Missense (D246G)	Our database

IVS-5	c.741+1G→A	6 bp insertion	[3]
Intron 5/Exon 6 Junction	c.742-4_747 del10 GAAGGTTGCT	Splicing	[3, 24]
Exon 6	c.796–797 insC	Frameshift	[16]
Exon 6	c.808 insG	Frameshift	[13]
IVS-6	c.864+1 G>C	Splicing	[3]
IVS-6	c.864+1 del G	Splicing	[25]
IVS-6	c.864+1-4 del GTGA	Splicing	[6]
IVS-6	c.864+3-6 del GAGT	Splicing	[26]
IVS-6	c.865-3 C>A	Splicing	[27]
IVS-6	c.865-2 A>G	Splicing	[6]
IVS-6	c.865-1 G>C	Splicing	[1]
Exon 7	c.874-897del AACCGATTTTATCTGAAGGAAGTG	24nt deletion	[28]
Exon 7	c.877 C>T	Stop codon	[1, 29]
Exon 7	c.883-884 insT	Frameshift	[30]
Exon 7	c.892 G>T	Stop codon	[31]
Exon 7	c.928 G>A	Splicing	[23, 32, 33]
IVS-7	c.929_1G>A	Splicing	[34]
Exon 8	C813G (incorrect nomenclature- not based on mRNA or CDS)	Stop codon	[3]
Exon 8	c.940 delG	Frameshift	[18]
Exon 8	c.961 T>C	Missense (W321R)	[35]
Exon 8	c.974delTinsAA	Frameshift	[3]
Exon 8	c.1075 C>T	Stop codon	[19]
Exon 8	c.1075-1076 insC	Frameshift	[36]
Exon 8	c.1082 delA	Frameshift	[37]
Exon 8	c.1086T>G	Stop codon	Our database
IVS-8	c.1093+1 G>C	Splicing	[38]
IVS-8	c.1093+2 T>A	Splicing	[39]
Exon 9B	c.1097-1098 delAA	Frameshift	[3]
Exon 9B	c.1137-1140 del TATA/ins GCTGGTCCCAAT	Insertion/deletion	[1]
Exon 9B	c.1150G>C	Missense (G384R)	[40, 41]
Exon 9B	c.1201 A>G	Missense (R401G)	Our database
Exon 9B	c.1204 A>T	Stop codon	[31]

Supplemental Table 2. Clinical Manifestations in Danon Disease Males and Females and Typical Hypertrophic Cardiomyopathy.

	Danon Disease (Males)	Danon Disease (Females)	Hypertrophic Cardiomyopathy (HCM)
Epidemiology			
	-Mean Age of: Symptom Onset: 12 years Cardiac transplant: 18 years Death: 19 years[1]	-Mean Age of: Symptom Onset: 28 years Cardiac transplant: 34 years Death: 35 years[1]	- 3:2 male predominance (59%)[42] - Mean Age of Symptom Onset: 38 (Males), 47 (Females)[42] - Mean Age of Death: 45 (sudden death), 56 (congestive heart failure), 73 (ischemic stroke); no significant gender differences[43]
Cardiac			
Cardiomyopathy			
	- ~100% with some form of cardiomyopathy (88% hypertrophic form and 12% dilated form)[1] - Hypertrophic form: preserved ejection fraction and cavity dimensions early in disease (hypertrophy can be severe); reduced ejection fraction, arrhythmias, and heart failure develop later in disease course - Usually the cause of death, either from heart failure or associated electrical conduction abnormality	- ~61-100% with some form of cardiomyopathy (33% hypertrophic form and 28% dilated form)[1, 24] - Although symptoms present at later ages, cardiomyopathy can cause significant morbidity and mortality	- Modes of death include sudden death (51% of cases), heart failure (36% of cases), and HCM-related ischemic stroke (13% of cases)[43] - Diagnosis of HCM based on echocardiographic criteria with left ventricular wall thickness ≥15 mm in adults.[43] HCM may remain stable without progression in many patients
Electrical Abnormalities			
	- 86-100% with some form of electrical abnormality[1, 24] - WPW most common (69% of cases)[1]	- 80-100% with some form of electrical abnormality[1, 24] - WPW noted in 27% of cases[1]	- The most common arrhythmias are atrial fibrillation[44, 45] and ventricular arrhythmias.[45, 46] Specific ventricular arrhythmias include isolated ventricular extrasystoles[46] and non-sustained ventricular tachycardia.[45] - WPW is uncommon finding in non-Danon HCM[47]
Neurological			
Skeletal Myopathy			
	- 80-90% with skeletal muscle weakness, usually in shoulder, neck, and legs[1, 24] - Mean serum creatine kinase of 944±327 U/L[1] - Usually retain ability to walk as adults - Neuropathy in 9% of cases[1]	- 33-50% with skeletal muscle weakness, usually in shoulder, neck, and legs[1, 24] - Mean serum creatine kinase of 106±104 U/L[1] - Ambulation largely unaffected - Neuropathy in 39% of cases[1]	-No significant skeletal muscle involvement or neuropathy

	- Muscle cramping in 9% of cases[1]	-Muscle cramping in 15% of cases[1]	
Intellectual Disability			
	- 70-100% with cognitive impairment[1, 24] - Some case studies have noted depression, paranoia, attention deficit, and behavior problems	- 6-47% with cognitive impairment[1, 24]	- Normal cognitive function
Ocular Disease			
	- 69% with visual problems[1] - Examination may reveal central scotoma, serious color vision disturbances, diffuse and near-complete loss of retinal pigment, and a cone-rod pattern of amplitude reduction on electroretinogram	- 64% with visual problems[1] - Examination may reveal peripheral pigmentary retinopathy, and peppered and granular retinal pigment epithelium appearance	- No significant ocular involvement
Other Manifestations			
Respiratory Disease*			
	- 50% with symptomatic respiratory disease[1]	- 17% with symptomatic respiratory disease[1]	- No significant respiratory involvement
Gastrointestinal Disease*			
	- 77% with unspecified gastrointestinal symptoms[1]	- 50% with unspecified gastrointestinal symptoms[1]	- No significant gastrointestinal involvement
*= There are no studies confirming pulmonary or gastrointestinal involvement in Danon disease; statistics are presented here to show the high number of Danon disease patients reporting these symptoms; WPW-Wolff Parkinson White;			

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