Table S1 Genetic spectrum of the 85 enrolled infantile hyperammonemia patients

Sample	Subgroup	Gender	Gene	Peak NH_3	Zygo	Inherit	OMIM	Chr	Variant	Source	HGMD	HGMD_type	Clinvar_type	Classification of variant	Precision treatment
1	post-neonatal	M	SLC25A13	193	Het	AR	Citrullinemia, adult-onset type II, [MIM:603471]; Citrullinemia, type II, neonatal-onset, [MIM:605814]	7	NM_014251:exon9:c.852_856delinsA(p.M285Pfs*2)	Maternal	PMID 10369257. SEE HGMD DISEASE: Citrullinaemia, adult onset, type II. SEE HGMD COMMENT: ;	DM	Pathogenic	P	
1	post-neonatal	M	SLC25A13	193	Het	AR	Citrullinemia, adult-onset type II, [MIM:603471]; Citrullinemia, type II, neonatal-onset, [MIM:605814]	7	NM_014251:exon5:c.457_459delinsG(p.Q153Vfs*21)	Paternal	.	.	.	P	
2	post-neonatal	F	SLC25A13	134	Hom	AR	Citrullinemia, adult-onset type II, [MIM:603471]; Citrullinemia, type II, neonatal-onset, [MIM:605814]	7	NM_014251:exon6:c.615+5G>A	Paternal	PMID 14680984. SEE HGMD DISEASE: Hepatitis, idiopathic neonatal. SEE HGMD COMMENT: aka Mutation [X]/p.A206fs212X.;	DM	Pathogenic/Likely_pathogenic	LP	
2	post-neonatal	F	SLC25A13	134	Hom	AR	Citrullinemia, adult-onset type II, [MIM:603471]; Citrullinemia, type II, neonatal-onset, [MIM:605814]	7	NM_014251:exon6:c.615+5G>A	Maternal	PMID 14680984. SEE HGMD DISEASE: Hepatitis, idiopathic neonatal. SEE HGMD COMMENT: aka Mutation [X]/p.A206fs212X.;	DM	Pathogenic/Likely_pathogenic	LP	
3	post-neonatal	M	SLC25A13	130	Het	AR	Citrullinemia, adult-onset type II, [MIM:603471]; Citrullinemia, type II, neonatal-onset, [MIM:605814]	7	NM_014251:exon16:c.1661insGAGATTACAGGTGGCTGCCCGGGC (p.A554Gfs*17)	-	.	.	Pathogenic	P	
3	post-neonatal	M	SLC25A13	130	Het	AR	Citrullinemia, adult-onset type II, [MIM:603471]; Citrullinemia, type II, neonatal-onset, [MIM:605814]	7	NM_014251:exon9:c.852_856delinsA(p.M285Pfs*2)	-	PMID 10369257. SEE HGMD DISEASE: Citrullinaemia, adult onset, type II. SEE HGMD COMMENT: ;	DM	Pathogenic	P	
4	post-neonatal	M	SLC25A13	128	Het	AR	Citrullinemia, adult-onset type II, [MIM:603471]; Citrullinemia, type II, neonatal-onset, [MIM:605814]	7	NM_014251:exon9:c.852_856delinsA(p.M285Pfs*2)	Paternal	PMID 10369257. SEE HGMD DISEASE: Citrullinaemia, adult onset, type II. SEE HGMD COMMENT: aka c.851del4 p.R284fs286X/Mutation [I].;	DM	Pathogenic	P	
4	post-neonatal	M	SLC25A13	128	Het	AR	Citrullinemia, adult-onset type II, [MIM:603471]; Citrullinemia, type II, neonatal-onset, [MIM:605814]	7	IVS16ins3kb	Maternal	PMID 15542392	DM	Pathogenic	LP	
5	post-neonatal	F	SLC25A13	124	Het	AR	Citrullinemia, adult-onset type II, [MIM:603471]; Citrullinemia, type II, neonatal-onset, [MIM:605814]	7	NM_014251:exon9:c.852_856delinsA(p.M285Pfs*2)	Paternal	PMID 10369257. SEE HGMD DISEASE: Citrullinaemia, adult onset, type II. SEE HGMD COMMENT: ;	DM	Pathogenic	P	
5	post-neonatal	F	SLC25A13	124	Het	AR	Citrullinemia, adult-onset type II, [MIM:603471]; Citrullinemia, type II, neonatal-onset, [MIM:605814]	7	NM_014251:exon6:c.615+5G>A	Maternal	PMID 14680984. SEE HGMD DISEASE: Hepatitis, idiopathic neonatal. SEE HGMD COMMENT: ;	DM	Pathogenic/Likely_pathogenic	LP	
6	post-neonatal	F	SLC25A13	120	Het	AR	Citrullinemia, adult-onset type II, [MIM:603471]; Citrullinemia, type II, neonatal-onset, [MIM:605814]	7	NM_014251:exon9:c.852_856delinsA(p.M285Pfs*2)	Maternal	PMID 10369257. SEE HGMD DISEASE: Citrullinaemia, adult onset, type II. SEE HGMD COMMENT: ;	DM	Pathogenic	P	
6	post-neonatal	F	SLC25A13	120	Het	AR	Citrullinemia, adult-onset type II, [MIM:603471]; Citrullinemia, type II, neonatal-onset, [MIM:605814]	7	NM_014251:exon11:c.1064G>A(p.R355Q)	Paternal	PMID 24586645. SEE HGMD DISEASE: Intrahepatic cholestasis, neonatal. SEE HGMD COMMENT: ;	DM	Uncertain_significance	LP	
7	post-neonatal	F	SLC25A13	110	Het	AR	Citrullinemia, adult-onset type II, [MIM:603471]; Citrullinemia, type II, neonatal-onset, [MIM:605814]	7	NM_014251:exon9:c.852_856delinsA(p.M285Pfs*2)	Maternal	PMID 10369257. SEE HGMD DISEASE: Citrullinaemia, adult onset, type II. SEE HGMD COMMENT: ;	DM	Pathogenic	P	
7	post-neonatal	F	SLC25A13	110	Het	AR	Citrullinemia, adult-onset type II, [MIM:603471]; Citrullinemia, type II, neonatal-onset, [MIM:605814]	7	IVS16ins3kb	Paternal	PMID 15542392	DM	Pathogenic	LP	
8	post-neonatal	M	SLC25A13	107	Het	AR	Citrullinemia, adult-onset type II, [MIM:603471]; Citrullinemia, type II, neonatal-onset, [MIM:605814]	7	NM_014251:exon9:c.852_855delTATG(p.M285PfsTer2)	Paternal	PMID 10369257. SEE HGMD DISEASE: Citrullinaemia, adult onset, type II. SEE HGMD COMMENT: ;	DM	Pathogenic	P	
8	post-neonatal	M	SLC25A13	107	Het	AR	Citrullinemia, adult-onset type II, [MIM:603471]; Citrullinemia, type II, neonatal-onset, [MIM:605814]	7	NM_014251:exon6:c.615+5G>A	Maternal	PMID 14680984. SEE HGMD DISEASE: Hepatitis, idiopathic neonatal. SEE HGMD COMMENT: ;	DM	Pathogenic/Likely_pathogenic	LP	
9	post-neonatal	M	SLC25A13	107	Het	AR	Citrullinemia, adult-onset type II, [MIM:603471]; Citrullinemia, type II, neonatal-onset, [MIM:605814]	7	NM_014251:exon9:c.852_855delTATG(p.M285PfsTer2)	-	PMID 10369257. SEE HGMD DISEASE: Citrullinaemia, adult onset, type II. SEE HGMD COMMENT: ;	DM	Pathogenic	P	
9	post-neonatal	M	SLC25A13	107	Het	AR	Citrullinemia, adult-onset type II, [MIM:603471]; Citrullinemia, type II, neonatal-onset, [MIM:605814]	7	NM_014251:exon1:c.15G>A(p.K5K)	-	PMID 18392553. SEE HGMD DISEASE: Citrin deficiency. SEE HGMD COMMENT: ;	DM	Pathogenic	LP	
10	post-neonatal	F	SLC25A13	104	Het	AR	Citrullinemia, adult-onset type II, [MIM:603471]; Citrullinemia, type II, neonatal-onset, [MIM:605814]	7	NM_014251:exon14:c.1399C>T(p.R467X)	Paternal	PMID 20376801. SEE HGMD DISEASE: Intrahepatic cholestasis, neonatal. SEE HGMD COMMENT: ;	DM	.	P	
10	post-neonatal	F	SLC25A13	104	Het	AR	Citrullinemia, adult-onset type II, [MIM:603471]; Citrullinemia, type II, neonatal-onset, [MIM:605814]	7	NM_014251:exon9:c.852_856delinsA(p.M285Pfs*2)	Maternal	PMID 10369257. SEE HGMD DISEASE: Citrullinaemia, adult onset, type II. SEE HGMD COMMENT: ;	DM	Pathogenic	P	

Table S1 (*continued*)

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Table S1 (*continued*)

Sample	Subgroup	Gender	Gene	Peak NH_3	Zygo	Inherit	OMIM	Chr	Variant	Source	HGMD	HGMD_ type	Clinvar_type	Classification of variant	Precision treatment
11	post-neonatal	F	SLC25A13	100	Hom	AR	Citrullinemia, adult-onset type II, [MIM:603471]; Citrullinemia, type II, neonatal-onset, [MIM:605814]	7	NM_014251:exon9:c.852_856delinsA(p.M285Pfs*2)	Maternal	PMID 10369257. SEE HGMD DISEASE: Citrullinaemia, adult onset, type II. SEE HGMD COMMENT: aka c.851del4 p.R284fs286X/Mutation [I].;	DM	Pathogenic	P	
11	post-neonatal	F	SLC25A13	100	Hom	AR	Citrullinemia, adult-onset type II, [MIM:603471]; Citrullinemia, type II, neonatal-onset, [MIM:605814]	7	NM_014251:exon9:c.852_856delinsA(p.M285Pfs*2)	Paternal	PMID 10369257. SEE HGMD DISEASE: Citrullinaemia, adult onset, type II. SEE HGMD COMMENT: aka c.851del4 p.R284fs286X/Mutation [I].;	DM	Pathogenic	P	
12	neonatal	M	MUT	1988	Het	AR	Methylmalonic aciduria, mut(0) type, [MIM:251000]	6	NM_000255:exon4:c.787G>A(p.G263R)	Maternal	.	.	.	VUS	L-carnitine
12	neonatal	M	MUT	1988	Het	AR	Methylmalonic aciduria, mut(0) type, [MIM:251000]	6	NM_000255:exon3:c.627insCT(p.K210*)	Paternal	PMID 26454439. SEE HGMD DISEASE: Methylmalonic aciduria. SEE HGMD COMMENT: ;	DM	.	P	L-carnitine
13	neonatal	F	MUT	1226	Het	AR	Methylmalonic aciduria, mut(0) type, [MIM:251000]	6	NM_000255:exon2:c.289insAC(p.P97Tfs*7)	Paternal	.	.	.	P	
13	neonatal	F	MUT	1226	Het	AR	Methylmalonic aciduria, mut(0) type, [MIM:251000]	6	NM_000255: exon6:c.1159A>C (p.T387P)	Maternal	.	.	.	LP	
14	neonatal	M	MUT	1204	Het	AR	Methylmalonic aciduria, mut(0) type, [MIM:251000]	6	NM_000255:exon9:c.1675A>G(p.R559G)	Paternal	.	.	.	VUS	L-carnitine, special formula
14	neonatal	M	MUT	1204	Het	AR	Methylmalonic aciduria, mut(0) type, [MIM:251000]	6	NM_000255:exon10:c.1677-1G>A	Maternal	PMID 16281286. SEE HGMD DISEASE: Methylmalonic aciduria. SEE HGMD COMMENT: ;	DM	Pathogenic	P	L-carnitine, special formula
15	neonatal	F	MUT	1115	Het	AR	Methylmalonic aciduria, mut(0) type, [MIM:251000]	6	NM_000255:exon3:c.730insTTG(p.D244Lfs*39)	Paternal	PMID 16281286. SEE HGMD DISEASE: Methylmalonic aciduria. SEE HGMD COMMENT: ;	DM	Pathogenic	P	L-carnitine
15	neonatal	F	MUT	1115	Het	AR	Methylmalonic aciduria, mut(0) type, [MIM:251000]	6	NM_000255:exon10:c.1679G>A(p.C560Y)	Maternal	PMID 16435223. SEE HGMD DISEASE: Methylmalonic aciduria. SEE HGMD COMMENT: ;	DM	Uncertain_significance	LP	L-carnitine
16	neonatal	M	MUT	495	Het	AR	Methylmalonic aciduria, mut(0) type, [MIM:251000]	6	NM_000255:exon6:c.1106G>A(p.R369H)	-	PMID 9285782. SEE HGMD DISEASE: Methylmalonic aciduria. SEE HGMD COMMENT: ;	DM	Pathogenic	LP	L-carnitine, special formula, liver transplantation
16	neonatal	M	MUT	495	Het	AR	Methylmalonic aciduria, mut(0) type, [MIM:251000]	6	NM_000255:exon5:c.914T>C(p.L305S)	-	PMID 16281286. SEE HGMD DISEASE: Methylmalonic aciduria. SEE HGMD COMMENT: ;	DM	Likely_pathogenic	LP	L-carnitine, special formula, liver transplantation
17	neonatal	M	MUT	156	Het	AR	Methylmalonic aciduria, mut(0) type, [MIM:251000]	6	NM_000255:exon6:c.1243G>A(p.E415K)	-	.	.	.	VUS	L-carnitine, special formula
17	neonatal	M	MUT	156	Het	AR	Methylmalonic aciduria, mut(0) type, [MIM:251000]	6	NM_000255:exon4:c.756insAC(p.H252Qfs*6)	-	PMID 23430940. SEE HGMD DISEASE: Methylmalonic aciduria. SEE HGMD COMMENT: ;	DM	.	P	L-carnitine, special formula
18	post-neonatal	M	MUT	111	Het	AR	Methylmalonic aciduria, mut(0) type, [MIM:251000]	6	NM_000255:c.1677-1G>A	-	PMID 16281286. SEE HGMD DISEASE: Methylmalonic aciduria. SEE HGMD COMMENT: ;	DM	Pathogenic	P	special formula
18	post-neonatal	M	MUT	111	Het	AR	Methylmalonic aciduria, mut(0) type, [MIM:251000]	6	NM_000255:exon3:c.730insTTG(p.D244Lfs*39)	-	PMID 16281286. SEE HGMD DISEASE: Methylmalonic aciduria. SEE HGMD COMMENT: ;	DM	Pathogenic	P	special formula
19	neonatal	M	CPS1	832	Het	AR	Carbamoylphosphate synthetase I deficiency, [MIM:237300]	2	NM_001875:exon20:c.2440C>T(p.R814W)	De novo	PMID 21120950. SEE HGMD DISEASE: Carbamoyl phosphate synthetase I deficiency. SEE HGMD COMMENT: ;	DM	Uncertain_significance	P	
19	neonatal	M	CPS1	832	Het	AR	Carbamoylphosphate synthetase I deficiency, [MIM:237300]	2	NM_001875:exon37:c.4316insCCAA(p.N1442_ T1443insN)	Maternal	NoDM CM114390 related	DM	.	VUS	
20	neonatal	M	CPS1	415	Het	AR	Carbamoylphosphate synthetase I deficiency, [MIM:237300]	2	NM_001875:exon14:c.1412C>A(p.T471N)	-	PMID 20578160. SEE HGMD DISEASE: Carbamoyl phosphate synthetase I deficiency. SEE HGMD COMMENT: ;	DM	.	LP	citrulline, L-carnitine
20	neonatal	M	CPS1	415	Het	AR	Carbamoylphosphate synthetase I deficiency, [MIM:237300]	2	NM_001875:exon11:c.1145C>T(p.P382L)	-	PMID 21120950. SEE HGMD DISEASE: Carbamoyl phosphate synthetase I deficiency. SEE HGMD COMMENT: ;	DM	Uncertain_significance	LP	citrulline, L-carnitine
21	neonatal	F	CPS1	293	Het	AR	Carbamoylphosphate synthetase I deficiency, [MIM:237300]	2	NM_001875:exon17:c.1981G>A(p.G661S)	-	NoDM CM120167 related	DM	.	LP	citrulline, L-carnitine
21	neonatal	F	CPS1	293	Het	AR	Carbamoylphosphate synthetase I deficiency, [MIM:237300]	2	NM_001875:exon11:c.1145C>T(p.P382L)	-	PMID 21120950. SEE HGMD DISEASE: Carbamoyl phosphate synthetase I deficiency. SEE HGMD COMMENT: ;	DM	Uncertain_significance	LP	citrulline, L-carnitine

Table S1 (*continued*)

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Table S1 (*continued*)

Sample	Subgroup	Gender	Gene	Peak NH_3	Zygo	Inherit	OMIM	Chr	Variant	Source	HGMD	HGMD_ type	Clinvar_type	Classification of variant	Precision treatment
22	neonatal	F	PCCA	907	Het	AR	Propionicacidemia, [MIM:606054]	13	NM_000282:exon13:c.1146insCA(p.R383Kfs*6)	-	.	.	.	P	liver transplantation
22	neonatal	F	PCCA	907	Het	AR	Propionicacidemia, [MIM:606054]	13	NM_000282:exon2:c.127C>T(p.Q43X)	-	NoDM CD190468 related	DM	.	P	liver transplantation
22	neonatal	F	PCCA	907	Het	AR	Propionicacidemia, [MIM:606054]	13	NM_000282:exon19:c.1676G>T(p.W559L)	-	PMID 10518292. SEE HGMD DISEASE: Propionic acidaemia. SEE HGMD COMMENT: ;	DM	Conflicting:Benign(2)%3BLikely_benign(1)%3BPathogenic(1)%3BUncertain_ significance(1)	LP	liver transplantation
23	post-neonatal	F	PCCA	686	Het	AR	Propionicacidemia, [MIM:606054]	13	NM_000282:c.1845+1G>A	Paternal	.	.	Pathogenic	P	
23	post-neonatal	F	PCCA	686	Het	AR	Propionicacidemia, [MIM:606054]	13	NM_000282:exon6:c.442_443delinsG(p.N149Tfs*35)	Maternal	PMID 30274917. SEE HGMD DISEASE: Propionic acidaemia. SEE HGMD COMMENT: ;	DM	.	P	
24	neonatal	M	PCCA	318	Het	AR	Propionicacidemia, [MIM:606054]	13	NM_000282:exon3:c.231+1G>A	-	NoDM CS066305 related	DM	Pathogenic	P	special formula
24	neonatal	M	PCCA	318	Het	AR	Propionicacidemia, [MIM:606054]	13	NM_000282:exon7:c.596T>A(p.V199D)	-	.	.	.	VUS	special formula
25	neonatal	M	SLC25A20	1270	Het	AR	Carnitine-acylcarnitine translocase deficiency, [MIM:212138]	3	NM_000387:exon3:c.270delC	Maternal	PMID 11592821. SEE HGMD DISEASE: Carnitine-acylcarnitine carrier deficiency. SEE HGMD COMMENT: ;	DM	.	P	L-carnitine
25	neonatal	M	SLC25A20	1270	Het	AR	Carnitine-acylcarnitine translocase deficiency, [MIM:212138]	3	NM_000387:intron2:c.199-10T>C	Paternal	PMID 10697964. SEE HGMD DISEASE: Carnitine-acylcarnitine carrier deficiency. SEE HGMD COMMENT: DM 1. NULL;	DM	Pathogenic	LP	L-carnitine
26	neonatal	M	SLC25A20	1153	Het	AR	Carnitine-acylcarnitine translocase deficiency, [MIM:212138]	3	NM_000387:exon3:c.270delC	Maternal	PMID 11592821. SEE HGMD DISEASE: Carnitine-acylcarnitine carrier deficiency. SEE HGMD COMMENT: ;	DM	.	P	L-carnitine
26	neonatal	M	SLC25A20	1153	Het	AR	Carnitine-acylcarnitine translocase deficiency, [MIM:212138]	3	NM_000387:intron2:c.199-10T>C	Paternal	PMID 10697964. SEE HGMD DISEASE: Carnitine-acylcarnitine carrier deficiency. SEE HGMD COMMENT: DM 1. NULL;	DM	Pathogenic	LP	L-carnitine
27	neonatal	M	SLC25A20	418	Het	AR	Carnitine-acylcarnitine translocase deficiency, [MIM:212138]	3	NM_000387:exon6:c.550G>T(p.G184X)	Maternal	PMID 31965297. SEE HGMD DISEASE: Carnitine-acylcarnitine translocase deficiency. SEE HGMD COMMENT: Suppl. *Table 3*.;	DM	.	P	
27	neonatal	M	SLC25A20	418	Het	AR	Carnitine-acylcarnitine translocase deficiency, [MIM:212138]	3	NM_000387:exon3:c.199-10T>G	Paternal	PMID 10697964. SEE HGMD DISEASE: Carnitine-acylcarnitine carrier deficiency. SEE HGMD COMMENT: ;	DM	Pathogenic	LP	
28	neonatal	F	ASS1	139	Het	AR	Citrullinemia, [MIM:215700]	9	NM_000050:exon6:c.379C>T(p.R127W)	-	PMID 19006241. SEE HGMD DISEASE: Citrullinaemia. SEE HGMD COMMENT: ;	DM	Uncertain_significance	LP	
28	neonatal	F	ASS1	139	Het	AR	Citrullinemia, [MIM:215700]	9	NM_000050:exon15:c.1168G>A(p.G390R)	-	PMID 2358466. SEE HGMD DISEASE: Citrullinaemia. SEE HGMD COMMENT: ;	DM	Pathogenic/Likely_pathogenic	LP	
29	post-neonatal	F	ASS1	121	Het	AR	Citrullinemia, [MIM:215700]	9	NM_000050:exon6:c.379C>T(p.R127W)	-	PMID 19006241. SEE HGMD DISEASE: Citrullinaemia. SEE HGMD COMMENT: ;	DM	Uncertain_significance	LP	
29	post-neonatal	F	ASS1	121	Het	AR	Citrullinemia, [MIM:215700]	9	NM_000050:exon15:c.1168G>A(p.G390R)	-	PMID 2358466. SEE HGMD DISEASE: Citrullinaemia. SEE HGMD COMMENT: ;	DM	Pathogenic/Likely_pathogenic	LP	
30	neonatal	F	ETFDH	461	Het	AR	Glutaric acidemia IIC, [MIM:231680]	4	NM_004453:exon9:c.1109G>T(p.G370V)	Maternal	.	.	.	VUS	
30	neonatal	F	ETFDH	461	Het	AR	Glutaric acidemia IIC, [MIM:231680]	4	NM_004453:exon2:c.99G>A(p.W33X)	Paternal	.	.	.	P	
31	neonatal	F	ETFDH	278	Hom	AR	Glutaric acidemia IIC, [MIM:231680]	4	NM_004453.3(ETFDH):c.1586A>G(p.H529R)	-	PMID 24522293. SEE HGMD DISEASE: Acyl-CoA dehydrogenation deficiency, riboflavin-responsive. SEE HGMD COMMENT: ;	DM	.	LP	L-carnitine, vitamin B2, high-glycemic and low-fat diet
31	neonatal	F	ETFDH	278	Hom	AR	Glutaric acidemia IIC, [MIM:231680]	4	NM_004453.3(ETFDH):c.1586A>G(p.H529R)	-	PMID 24522293. SEE HGMD DISEASE: Acyl-CoA dehydrogenation deficiency, riboflavin-responsive. SEE HGMD COMMENT: ;	DM		LP	L-carnitine, vitamin B3, high-glycemic and low-fat diet

Table S1 (*continued*)

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Table S1 (*continued*)

Sample	Subgroup	Gender	Gene	Peak NH_3	Zygo	Inherit	OMIM	Chr	Variant	Source	HGMD	HGMD_ type	Clinvar_type	Classification of variant	Precision treatment
32	post-neonatal	F	NBAS	100	Het	AR	Infantile liver failure syndrome 2, [MIM:616483]; Short stature, optic nerve atrophy, and Pelger-Huet anomaly, [MIM:614800]	2	NM_015909:exon30:c.3436insCAGTG(p.A1146Qfs*14)	Paternal	.	.	.	P	
32	post-neonatal	F	NBAS	100	Het	AR	Infantile liver failure syndrome 2, [MIM:616483]; Short stature, optic nerve atrophy, and Pelger-Huet anomaly, [MIM:614800]	2	NM_015909:exon52:c.6859G>T(p.D2287Y)	Maternal	.	.	.	VUS	
33	post-neonatal	F	NBAS	100	Het	AR	Infantile liver failure syndrome 2, [MIM:616483]; Short stature, optic nerve atrophy, and Pelger-Huet anomaly, [MIM:614800]	2	NM_015909:exon7:c.426C>G(p.Y142X)	Maternal	PMID 31965297. SEE HGMD DISEASE: Infantile liver failure syndrome 2. SEE HGMD COMMENT: Suppl. *Table 3*.;	DM	.	P	
33	post-neonatal	F	NBAS	100	Het	AR	Infantile liver failure syndrome 2, [MIM:616483]; Short stature, optic nerve atrophy, and Pelger-Huet anomaly, [MIM:614800]	2	NM_015909:exon31:c.3596G>A(p.C1199Y)	Paternal	PMID 28629372. SEE HGMD DISEASE: Recurrent acute liver failure, fever related. SEE HGMD COMMENT: Biallelic with c.6611_6612insCA;	DM	.	LP	
34	post-neonatal	F	OTC	392	Het	X-linked recessive	Ornithine transcarbamylase deficiency, [MIM:311250]	X	NM_000531:exon9:c.944T>G(p.V315G)	De novo	PMID 10946359. SEE HGMD DISEASE: Ornithine transcarbamylase deficiency. SEE HGMD COMMENT: ;	DM	Pathogenic	LP	
35	neonatal	M	PCCB	456	Het	AR	Propionicacidemia, [MIM:606054]	3	NM_000532:exon13:c.1339C>T(p.L447F)	-	.	.	Likely_pathogenic	VUS	L-carnitine, special formula
35	neonatal	M	PCCB	456	Het	AR	Propionicacidemia, [MIM:606054]	3	NM_000532:exon12:c.1215_1216delinsC(p.G407Afs*36)	-	NoDM CD1618263 related	DM	Pathogenic	P	L-carnitine, special formula
36	post-neonatal	M	BCKDHA	128	Het	AR	Maple syrup urine disease, type Ia, [MIM:248600]	19	NM_000709:exon2:c.110insAC(p.R40Qfs*11)	Paternal	PMID 8037208. SEE HGMD DISEASE: Maple syrup urine disease. SEE HGMD COMMENT: ;	DM	Pathogenic	P	special formula, vitamin B1
36	post-neonatal	M	BCKDHA	128	Het	AR	Maple syrup urine disease, type Ia, [MIM:248600]	19	NM_000709:exon5:c.565C>T(p.R189C)	Maternal	.	.	Uncertain_significance	VUS	special formula, vitamin B1
37	neonatal	M	DBT	119	Het	AR	Maple syrup urine disease, type II, [MIM:248600]	1	NM_001918:exon2:c.75_77delinsG(p.C26Wfs*2)	-	PMID 8430702. SEE HGMD DISEASE: Maple syrup urine disease. SEE HGMD COMMENT: ;	DM	Pathogenic/Likely_pathogenic	P	special formula
37	neonatal	M	DBT	119	Het	AR	Maple syrup urine disease, type II, [MIM:248600]	1	NM_001918:exon11:c.1291C>T(p.R431X)	-	PMID 31119508. SEE HGMD DISEASE: Maple syrup urine disease. SEE HGMD COMMENT: ;	DM	Pathogenic/Likely_pathogenic	P	special formula
38	neonatal	M	MMACHC	132	Het	AR	Methylmalonic aciduria and homocystinuria, cblC type, [MIM:277400]	1	NM_015506: exon4:c.567dupT (p.I190YfsTer13)	Parental	PMID 19370762. SEE HGMD DISEASE: Methylmalonic aciduria & homocystinuria, cblC type. SEE HGMD COMMENT: ;	DM	Pathogenic	P	L-carnitine, vitamin B12
38	neonatal	M	MMACHC	132	Het	AR	Methylmalonic aciduria and homocystinuria, cblC type, [MIM:277400]	1	NM_015506: exon1:c.80A>G (p.Q27R)	Maternal	PMID 16311595. SEE HGMD DISEASE: Methylmalonic aciduria. SEE HGMD COMMENT: ;	DM	Pathogenic	LP	L-carnitine, vitamin B12
39	neonatal	M	SERAC1	181	Hom	AR	3-methylglutaconic aciduria with deafness, encephalopathy, and Leigh-like syndrome, [MIM:614739]	6	NM_032861:exon6:c.442C>T(p.R148X)	Maternal	PMID 22683713. SEE HGMD DISEASE: 3-methylglutaconic aciduria, impaired OXPHOS, deafness, encephalopathy, dystonia & Leigh-like syndrome. SEE HGMD COMMENT: ;	DM	Pathogenic	P	L-carnitine, coenzyme Q10, vitamin B2
39	neonatal	M	SERAC1	181	Hom	AR	3-methylglutaconic aciduria with deafness, encephalopathy, and Leigh-like syndrome, [MIM:614739]	6	NM_032861:exon6:c.442C>T(p.R148X)	Paternal	PMID 22683713. SEE HGMD DISEASE: 3-methylglutaconic aciduria, impaired OXPHOS, deafness, encephalopathy, dystonia & Leigh-like syndrome. SEE HGMD COMMENT: ;	DM	Pathogenic	P	L-carnitine, coenzyme Q10, vitamin B2
40	neonatal	F	JAG1	238	Het	AD	Alagille syndrome 1, [MIM:118450]; Tetralogy of Fallot, [MIM:187500]	20	NM_000214:exon15:c.1932C>A(p.C644X)	-	NoDM CD157130 related	DM	.	P	
41	post-neonatal	M	JAG1	150	Het	AD	Alagille syndrome 1, [MIM:118450]; Tetralogy of Fallot, [MIM:187500]	20	NM_000214:exon4:c.551G>A(p.R184H)	-	PMID 9585603. SEE HGMD DISEASE: Alagille syndrome. SEE HGMD COMMENT: ;	DM	Pathogenic	P	liver transplantation
42	post-neonatal	M	JAG1	134	Het	AD	Alagille syndrome 1, [MIM:118450]; Tetralogy of Fallot, [MIM:187500]	20	NM_000214:exon25:c.3104_3105delinsA(p.I1035Kfs*14)	-	NoDM CI062276 related	DM	.	P	
43	post-neonatal	M	JAG1	133	Het	AD	Alagille syndrome 1, [MIM:118450]; Tetralogy of Fallot, [MIM:187500]	20	NM_000214:exon4:c.686G>A(p.C229Y)	-	PMID 11058898. SEE HGMD DISEASE: Alagille syndrome. SEE HGMD COMMENT: ;	DM	.	LP	
44	post-neonatal	M	JAG1	131	Het	AD	Alagille syndrome 1, [MIM:118450]; Tetralogy of Fallot, [MIM:187500]	20	NM_000214:exon6:c.783C>G(p.Y261X)	De novo	.	.	.	P	
45	post-neonatal	M	JAG1	108	Het	AD	Alagille syndrome 1, [MIM:118450]; Tetralogy of Fallot, [MIM:187500]	20	NM_000214:exon4:c.550C>T(p.R184C)	De novo	PMID 9585603. SEE HGMD DISEASE: Alagille syndrome. SEE HGMD COMMENT: ;	DM	Pathogenic	P	

Table S1 (*continued*)

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Table S1 (*continued*)

Sample	Subgroup	Gender	Gene	Peak NH_3	Zygo	Inherit	OMIM	Chr	Variant	Source	HGMD	HGMD_type	Clinvar_type	Classification of variant	Precision treatment
46	post-neonatal	F	JAG1	106	Het	AD	Alagille syndrome 1, [MIM:118450]; Tetralogy of Fallot, [MIM:187500]	20	NM_000214:exon1:c.62T>C(p.L21P)	-	.	.	Likely_pathogenic	VUS	
46	post-neonatal	F	JAG1	106	Het	AD	Alagille syndrome 1, [MIM:118450]; Tetralogy of Fallot, [MIM:187500]	20	NM_000214:exon1:c.67_68delinsC(p.A23Pfs*23)	-	NoDM CD062191 related	DM	.	P	
47	post-neonatal	M	JAG1	100	Het	AD	Alagille syndrome 1, [MIM:118450]; Tetralogy of Fallot, [MIM:187500]	20	NM_000214: exon18:c.2230C>T (p.R744X)	-	PMID 9585603. SEE HGMD DISEASE: Alagille syndrome. SEE HGMD COMMENT: ;	DM	Pathogenic	P	
48	neonatal	M	ABCC8	265	Het	AD/AR	Diabetes mellitus, noninsulin-dependent, [MIM:125853]; Diabetes mellitus, permanent neonatal 3, with or without neurologic features, [MIM:618857]; Diabetes mellitus, transient neonatal 2, [MIM:610374]; Hyperinsulinemic hypoglycemia, familial, 1, [MIM:256450]; Hypoglycemia of infancy, leucine-sensitive, [MIM:240800]	11	NM_000352:exon34:c.4181T>G (p.M1394R)	-	PMID 23266803. SEE HGMD DISEASE: Hyperinsulinism. SEE HGMD COMMENT: ;	DM	.	LP	
49	neonatal	M	ABCC8	226	Het	AD/AR	Diabetes mellitus, noninsulin-dependent, [MIM:125853]; Diabetes mellitus, permanent neonatal 3, with or without neurologic features, [MIM:618857]; Diabetes mellitus, transient neonatal 2, [MIM:610374]; Hyperinsulinemic hypoglycemia, familial, 1, [MIM:256450]; Hypoglycemia of infancy, leucine-sensitive, [MIM:240800]	11	NM_000352: exon20:c.2475+1G>A	-	PMID 28757749. SEE HGMD DISEASE: Hyperlysinaemia, congenital. SEE HGMD COMMENT: Succesful treatment - Subtotal pancreatectomy;	DM	.	P	
50	neonatal	F	ABCC8	144	Het	AD/AR	Diabetes mellitus, noninsulin-dependent, [MIM:125853]; Diabetes mellitus, permanent neonatal 3, with or without neurologic features, [MIM:618857]; Diabetes mellitus, transient neonatal 2, [MIM:610374]; Hyperinsulinemic hypoglycemia, familial, 1, [MIM:256450]; Hypoglycemia of infancy, leucine-sensitive, [MIM:240800]	11	NM_000352.3:c.1108A>G(p.R370G)	Maternal	PMID 18596924. SEE HGMD DISEASE: Hyperinsulinism. SEE HGMD COMMENT: Descr. as D370G in Fig. 2, R370G in Fig. 1. Mut. ;	DM	.	LP	
51	post-neonatal	M	ABCC8	141	Het	AD/AR	Diabetes mellitus, noninsulin-dependent, [MIM:125853]; Diabetes mellitus, permanent neonatal 3, with or without neurologic features, [MIM:618857]; Diabetes mellitus, transient neonatal 2, [MIM:610374]; Hyperinsulinemic hypoglycemia, familial, 1, [MIM:256450]; Hypoglycemia of infancy, leucine-sensitive, [MIM:240800]	11	NM_000352:exon15:c.2051_2054dupGCTA	-	.	.	.	P	
52	post-neonatal	M	ABCC8	123	Het	AD/AR	Diabetes mellitus, permanent neonatal, [MIM:606176]; Diabetes mellitus, noninsulin-dependent, [MIM:125853]; Diabetes mellitus, transient neonatal 2, [MIM:610374]; Hyperinsulinemic hypoglycemia, familial, 1, [MIM:256450]; Hypoglycemia of infancy, leucine-sensitive, [MIM:240800]	11	NM_000352:exon35:c.4307G>A(p.R1436Q)	-	PMID 10615958. SEE HGMD DISEASE: Hypoglycaemia, persistent hyperinsulinaemic. SEE HGMD COMMENT: ;	DM	Pathogenic	LP	
53	neonatal	M	ABCC8	108	Het	AD/AR	Diabetes mellitus, noninsulin-dependent, [MIM:125853]; Diabetes mellitus, permanent neonatal 3, with or without neurologic features, [MIM:618857]; Diabetes mellitus, transient neonatal 2, [MIM:610374]; Hyperinsulinemic hypoglycemia, familial, 1, [MIM:256450]; Hypoglycemia of infancy, leucine-sensitive, [MIM:240800]	11	NM_000352: exon2:c.221G>A (p.R74Q)	-	PMID 9618169. SEE HGMD DISEASE: Hyperinsulinism. SEE HGMD COMMENT: ;	DM	Pathogenic	LP	
54	neonatal	F	ABCC2	264	Het	AR	Dubin-Johnson syndrome, [MIM:237500]	10	NM_000392:exon27:c.3825C>G(p.Y1275X)	-	PMID 16549534. SEE HGMD DISEASE: Dubin-Johnson syndrome. SEE HGMD COMMENT: ;	DM	.	P	
54	neonatal	F	ABCC2	264	Het	AR	Dubin-Johnson syndrome, [MIM:237500]	10	NM_000392:exon12:c.1535T>C(p.L512P)	-	.	.	.	VUS	
55	post-neonatal	F	ABCC2	255	Het	AR	Dubin-Johnson syndrome, [MIM:237500]	10	NM_000392:exon16:c.2078G>A(p.G693E)	Maternal	.	.	.	VUS	
55	post-neonatal	F	ABCC2	255	Het	AR	Dubin-Johnson syndrome, [MIM:237500]	10	NM_000392:exon9:c.1177C>T(p.R393W)	Paternal	PMID 15870973. SEE HGMD DISEASE: Dubin-Johnson syndrome. SEE HGMD COMMENT: ;	DM	Likely_pathogenic	LP	
56	post-neonatal	M	ABCC2	105	Hom	AR	Dubin-Johnson syndrome, [MIM:237500]	10	NM_000392:exon9:c.1177C>T(p.R393W)	-	PMID 15870973. SEE HGMD DISEASE: Dubin-Johnson syndrome. SEE HGMD COMMENT: ;	DM	Likely_pathogenic	LP	
56	post-neonatal	M	ABCC2	105	Hom	AR	Dubin-Johnson syndrome, [MIM:237500]	10	NM_000392:exon9:c.1177C>T(p.R393W)	-	PMID 15870973. SEE HGMD DISEASE: Dubin-Johnson syndrome. SEE HGMD COMMENT: ;	DM	Likely_pathogenic	LP	
57	neonatal	M	ABCC2	138	Het	AR	Dubin-Johnson syndrome, [MIM:237500]	10	NM_000392:exon31:c.4343G>A(p.G1448D)	-	.	.	.	VUS	
57	neonatal	M	ABCC2	138	Het	AR	Dubin-Johnson syndrome, [MIM:237500]	10	NM_000392:exon30:c.4237insGCT(p.H1414Lfs*18)	-	.	.	.	P	

Table S1 (*continued*)

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Table S1 (*continued*)

Sample	Subgroup	Gender	Gene	Peak NH_3	Zygo	Inherit	OMIM	Chr	Variant	Source	HGMD	HGMD_ type	Clinvar_type	Classification of variant	Precision treatment
58	post-neonatal	M	ABCB11	250	Het	AR	Cholestasis, progressive familial intrahepatic 2, [MIM:601847]; Cholestasis, benign recurrent intrahepatic, 2, [MIM:605479]	2	NM_003742:exon21:c.2594C>T(p.A865V)	Maternal	PMID 28733223. SEE HGMD DISEASE: Intrahepatic cholestasis, benign recurrent. SEE HGMD COMMENT: Along with p.R1231Q;	DM	Benign/Likely_benign	LP	
58	post-neonatal	M	ABCB11	250	Het	AR	Cholestasis, progressive familial intrahepatic 2, [MIM:601847]; Cholestasis, benign recurrent intrahepatic, 2, [MIM:605479]	2	NM_003742:exon7:c.499G>A(p.A167T)	Paternal	PMID 19845854. SEE HGMD DISEASE: Intrahepatic cholestasis, familial progressive. SEE HGMD COMMENT: ;	DM	.	LP	
59	post-neonatal	M	ABCB11	202	Het	AR	Cholestasis, progressive familial intrahepatic 2, [MIM:601847]; Cholestasis, benign recurrent intrahepatic, 2, [MIM:605479]	2	NM_003742:exon18:c.2086C>T(p.R696W)	Paternal	PMID 24969679. SEE HGMD DISEASE: Intrahepatic cholestasis, familial progressive 2. SEE HGMD COMMENT: ;	DM	Uncertain_significance	LP	liver transplantation
59	post-neonatal	M	ABCB11	202	Het	AR	Cholestasis, progressive familial intrahepatic 2, [MIM:601847]; Cholestasis, benign recurrent intrahepatic, 2, [MIM:605479]	2	NM_003742:exon6:c.477+6T>A	Maternal	.	.	.	VUS	liver transplantation
60	post-neonatal	M	ABCB11	137	Het	AR	Cholestasis, progressive familial intrahepatic 2, [MIM:601847]; Cholestasis, benign recurrent intrahepatic, 2, [MIM:605479]	2	NM_003742:exon8:c.677C>T(p.S226L)	Maternal	PMID 20232290. SEE HGMD DISEASE: Intrahepatic cholestasis, familial progressive 2. SEE HGMD COMMENT: ;	DM	.	LP	
60	post-neonatal	M	ABCB11	137	Het	AR	Cholestasis, progressive familial intrahepatic 2, [MIM:601847]; Cholestasis, benign recurrent intrahepatic, 2, [MIM:605479]	2	NM_003742:exon4:c.141insGCTTC(p.F47Lfs*13)	Paternal	.	.	.	P	
61	post-neonatal	F	ABCB11	102	Het	AR	Cholestasis, progressive familial intrahepatic 2, [MIM:601847]; Cholestasis, benign recurrent intrahepatic, 2, [MIM:605479]	2	NM_003742:exon24:c.3169C>T(p.R1057X)	Maternal	PMID 9806540. SEE HGMD DISEASE: Intrahepatic cholestasis, familial progressive 2. SEE HGMD COMMENT: ;	DM	Pathogenic	P	
61	post-neonatal	F	ABCB11	102	Het	AR	Cholestasis, progressive familial intrahepatic 2, [MIM:601847]; Cholestasis, benign recurrent intrahepatic, 2, [MIM:605479]	2	NM_003742:exon8:c.667C>T(p.R223C)	Paternal	PMID 21404481. SEE HGMD DISEASE: Intrahepatic cholestasis, familial benign. SEE HGMD COMMENT: ;	DM?	Uncertain_significance	VUS	
62	post-neonatal	M	CYP27A1	170	Hom	AR	Cerebrotendinous xanthomatosis, [MIM:213700]	2	NM_000784:exon7:c.1263+1G>A	-	PMID 8827518. SEE HGMD DISEASE: Cerebrotendinous xanthomatosis. SEE HGMD COMMENT: ;	DM	Pathogenic	P	chenodeoxycholic acid
62	post-neonatal	M	CYP27A1	170	Hom	AR	Cerebrotendinous xanthomatosis, [MIM:213700]	2	NM_000784:exon7:c.1263+1G>A	-	PMID 8827518. SEE HGMD DISEASE: Cerebrotendinous xanthomatosis. SEE HGMD COMMENT: ;	DM	Pathogenic	P	chenodeoxycholic acid
63	post-neonatal	M	CYP27A1	161	Het	AR	Cerebrotendinous xanthomatosis, [MIM:213700]	2	NM_000784:exon9:c.1477-2A>C	-	PMID 28623566. SEE HGMD DISEASE: Cerebrotendinous xanthomatosis. SEE HGMD COMMENT: ;	DM	Pathogenic	P	chenodeoxycholic acid, liver transplantation
63	post-neonatal	M	CYP27A1	161	Het	AR	Cerebrotendinous xanthomatosis, [MIM:213700]	2	NM_000784:exon2:c.379C>T(p.R127W)	-	PMID 10430841. SEE HGMD DISEASE: Cerebrotendinous xanthomatosis. SEE HGMD COMMENT: ;	DM	Pathogenic/Likely_pathogenic	LP	chenodeoxycholic acid, liver transplantation
64	post-neonatal	M	CYP27A1	102	Het	AR	Cerebrotendinous xanthomatosis, [MIM:213700]	2	NM_000784:exon7:c.1214G>A(p.R405Q)	-	PMID 9186905. SEE HGMD DISEASE: Cerebrotendinous xanthomatosis. SEE HGMD COMMENT: ;	DM	Pathogenic/Likely_pathogenic	LP	chenodeoxycholic acid
64	post-neonatal	M	CYP27A1	102	Het	AR	Cerebrotendinous xanthomatosis, [MIM:213700]	2	NM_000784:exon9:c.1477-2A>C	-	PMID 28623566. SEE HGMD DISEASE: Cerebrotendinous xanthomatosis. SEE HGMD COMMENT: ;	DM	Pathogenic	P	chenodeoxycholic acid
65	neonatal	F	G6PD	200	Het	XLR/XLD	Hemolytic anemia, G6PD deficient (favism), [MIM:300908]	X	NM_001042351:exon12:c.1388G>A(p.R463H)	-	PMID 1953767. SEE HGMD DISEASE: Glucose-6-phosphate dehydrogenase deficiency. SEE HGMD COMMENT: G6PD Kaiping/Anant/Dhon/Petrich-like/Sapporo-like/Wosera.;	DM	Pathogenic	LP	
65	neonatal	F	G6PD	200	Het	XLR/XLD	Hemolytic anemia, G6PD deficient (favism), [MIM:300908]	X	NM_001042351.2:c.1024C>T(p.L342F)	-	PMID 8364584. SEE HGMD DISEASE: Glucose-6-phosphate dehydrogenase deficiency. SEE HGMD COMMENT: G6PD Chinese-5. aka C13184T.;	DM	Conflicting:Likely_pathogenic(1)%3BUncertain_significance(2)	LP	
66	post-neonatal	M	G6PD	100	Hemi	X-linked dominant	Hemolytic anemia, G6PD deficient (favism), [MIM:300908]	X	NM_001042351:exon5:c.404A>C(p.N135T)	-	PMID 12064901. SEE HGMD DISEASE: Glucose-6-phosphate dehydrogenase deficiency. SEE HGMD COMMENT: ;	DM	.	LP	
67	neonatal	M	G6PD	133	Hemi	XLR/XLD	Hemolytic anemia, G6PD deficient (favism), [MIM:300908]	X	NM_001042351.2:c.1388G>A(p.R463H)	-	PMID 1953767. SEE HGMD DISEASE: Glucose-6-phosphate dehydrogenase deficiency. SEE HGMD COMMENT: G6PD Kaiping/Anant/Dhon/Petrich-like/Sapporo-like/Wosera.;	DM	Pathogenic	LP	

Table S1 (*continued*)

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Table S1 (*continued*)

Sample	Subgroup	Gender	Gene	Peak NH_3	Zygo	Inherit	OMIM	Chr	Variant	Source	HGMD	HGMD_ type	Clinvar_type	Classification of variant	Precision treatment
68	post-neonatal	F	NPC1	172	Het	AR	Niemann-Pick disease, type D, [MIM:257220]; Niemann-Pick disease, type C1, [MIM:257220]	18	NM_000271:exon4:c.352_353delAG(p.Gln119fs)	-	.	.	Pathogenic	P	
68	post-neonatal	F	NPC1	172	Het	AR	Niemann-Pick disease, type D, [MIM:257220]; Niemann-Pick disease, type C1, [MIM:257220]	18	NM_000271:exon13:c.2000C>T(p.S667L)	-	PMID 16143556. SEE HGMD DISEASE: Niemann-Pick disease, type C. SEE HGMD COMMENT: ;	DM	.	LP	
69	post-neonatal	M	NPC1	108	Het	AR	Niemann-Pick disease, type D, [MIM:257220]; Niemann-Pick disease, type C1, [MIM:257220]	18	NM_000271:exon11:c.1757+3_1757+6del	Maternal	PMID . SEE HGMD DISEASE: Niemann-Pick disease, type C. SEE HGMD COMMENT: ;	DM	.	VUS	
69	post-neonatal	M	NPC1	108	Het	AR	Niemann-Pick disease, type D, [MIM:257220]; Niemann-Pick disease, type C1, [MIM:257220]	18	NM_000271:exon22:c.3254_3256delinsG(p.Y1085Cfs*11)	Paternal	.	.	.	P	
70	post-neonatal	F	AKR1D1	150	Het	AR	Bile acid synthesis defect, congenital, 2, [MIM:235555]	7	NM_005989:exon6:c.613_614delinsC(p.L205Pfs*2)	Maternal	.	.	.	P	chenodeoxycholic acid
70	post-neonatal	F	AKR1D1	150	Het	AR	Bile acid synthesis defect, congenital, 2, [MIM:235555]	7	NM_005989:exon7:c.716T>C(p.L239S)	Paternal	PMID 30809085. SEE HGMD DISEASE: 3-oxo-Delta(4)-steroid 5beta-reductase deficiency. SEE HGMD COMMENT: Protein change descr. in Suppl. *Table 1*.;	DM		LP	chenodeoxycholic acid
71	post-neonatal	M	AKR1D1	121	Het	AR	Bile acid synthesis defect, congenital, 2, [MIM:235555]	7	NM_005989:exon7:c.773T>C(p.I258T)	Maternal	.	.	Uncertain significance	VUS	chenodeoxycholic acid
71	post-neonatal	M	AKR1D1	121	Het	AR	Bile acid synthesis defect, congenital, 2, [MIM:235555]	7	NM_005989:exon6:c.580-13T>A	Paternal	PMID 31337596. SEE HGMD DISEASE: 3-oxo-Delta(4)-steroid 5beta-reductase deficiency. SEE HGMD COMMENT: ;	DM	.	LP	chenodeoxycholic acid
72	post-neonatal	M	GAA	191	Het	AR	Glycogen storage disease II, [MIM:232300]	17	NM_000152:exon2:c.503G>C(p.R168P)	Maternal	PMID 25526786. SEE HGMD DISEASE: Glycogen storage disease 2, late-onset. SEE HGMD COMMENT: ;	DM	Uncertain_significance	LP	
72	post-neonatal	M	GAA	191	Het	AR	Glycogen storage disease II, [MIM:232300]	17	NM_000152:exon14:c.1958C>A(p.T653N)	Paternal	PMID 21488274. SEE HGMD DISEASE: Glycogen storage disease 2. SEE HGMD COMMENT: ;	DM	.	LP	
73	post-neonatal	M	GAA	102	Het	AR	Glycogen storage disease II, [MIM:232300]	17	NM_000152:exon13:c.1771delinsCG(p.T593Dfs*43)	-	NoDM CM165553 related	DM	Uncertain_significance	P	
73	post-neonatal	M	GAA	102	Het	AR	Glycogen storage disease II, [MIM:232300]	17	NM_000152:exon11:c.1561G>C(p.E521Q)	-	PMID 18425781. SEE HGMD DISEASE: Glycogen storage disease 2. SEE HGMD COMMENT: ;	DM	Likely_pathogenic	LP	
74	post-neonatal	M	GALT	177	Het	AR	Galactosemia, [MIM:230400]	9	NM_000155:exon7:c.687G>A(p.K229K)	Paternal	PMID 28173647. SEE HGMD DISEASE: Galactosaemia. SEE HGMD COMMENT: ;	DM?	Uncertain_significance	LP	soy- based formula
74	post-neonatal	M	GALT	177	Het	AR	Galactosemia, [MIM:230400]	9	NM_000155:exon10:c.1052C>A(p.P351H)	Maternal	.	.	Pathogenic	VUS	soy- based formula
75	post-neonatal	F	GALT	117	Het	AR	Galactosemia, [MIM:230400]	9	NM_000155:exon10:c.958G>A(p.A320T)	-	PMID 7887416. SEE HGMD DISEASE: Galactosaemia. SEE HGMD COMMENT: ;	DM	Conflicting:Likely_ pathogenic(1)%3BUncertain_significance(1)	LP	soy- based formula
75	post-neonatal	F	GALT	117	Het	AR	Galactosemia, [MIM:230400]	9	NM_000155:exon6:c.558C>G(p.H186Q)	-	NoDM CM170257 related	DM	Likely_pathogenic	VUS	soy- based formula
76	post-neonatal	F	SBDS	113	Hom	AR/Complex	Shwachman-Diamond syndrome, [MIM:260400]	7	NM_016038:exon2:c.258+2T>C	Paternal	PMID 12496757. SEE HGMD DISEASE: Shwachman-Diamond syndrome. SEE HGMD COMMENT: aka C84fsX3.;	DM	Pathogenic	P	
76	post-neonatal	F	SBDS	113	Hom	AR/Complex	Shwachman-Diamond syndrome, [MIM:260400]	7	NM_016038:exon2:c.258+2T>C	De novo	PMID 12496757. SEE HGMD DISEASE: Shwachman-Diamond syndrome. SEE HGMD COMMENT: aka C84fsX3.;	DM	Pathogenic	P	
77	post-neonatal	M	SBDS	104	Het	AR/Complex	Shwachman-Diamond syndrome, [MIM:260400]	7	NM_016038:exon2:c.258+2T>C	Paternal	PMID 12496757. SEE HGMD DISEASE: Shwachman-Diamond syndrome. SEE HGMD COMMENT: ;	DM	Pathogenic	P	
77	post-neonatal	M	SBDS	104	Het	AR/Complex	Shwachman-Diamond syndrome, [MIM:260400]	7	NM_016038:exon2:c.184A>T(p.K62X)	Maternal	PMID 27290639. SEE HGMD DISEASE: Multiorgan involvement (liver, kidney, hemopoethic system), skeletal dysplasia, growth failure, and complex I deficiency. SEE HGMD COMMENT: ;	DM	Pathogenic/Likely_pathogenic	P	
77	post-neonatal	M	SBDS	104	Het	AR/Complex	Shwachman-Diamond syndrome, [MIM:260400]	7	NM_016038:exon2:c.183T>C(p.S61S)	Maternal	NoDM CP035464 related	DM	Pathogenic	VUS	

Table S1 (*continued*)

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Table S1 (*continued*)

Sample	Subgroup	Gender	Gene	Peak NH_3	Zygo	Inherit	OMIM	Chr	Variant	Source	HGMD	HGMD_ type	Clinvar_type	Classification of variant	Precision treatment
78	post-neonatal	F	ALDOB	166	Het	AR	Fructose intolerance, hereditary, [MIM:229600]	9	NM_000035:exon7:c.673_674delinsA(p.E225Rfs*5)	-	.	.	.	P	fructose-free diet
78	post-neonatal	F	ALDOB	166	Het	AR	Fructose intolerance, hereditary, [MIM:229600]	9	NM_000035: exon4:c.325-1G>A	-	NoDM CS043627 related	DM	Likely_pathogenic	P	fructose-free diet
79	post-neonatal	M	CYP7B1	152	Het	AR	Spastic paraplegia 5A, autosomal recessive, [MIM:270800]; Bile acid synthesis defect, congenital, 3, [MIM:613812]	8	NM_004820:exon3:c.334C>T(p.R112X)	Paternal	PMID 18367963. SEE HGMD DISEASE: Cholestasis, severe. SEE HGMD COMMENT: ;	DM	Pathogenic	P	chenodeoxycholic acid
79	post-neonatal	M	CYP7B1	152	Het	AR	Spastic paraplegia 5A, autosomal recessive, [MIM:270800]; Bile acid synthesis defect, congenital, 3, [MIM:613812]	8	NM_004820:exon1:c.102C>A(p.C34X)	Maternal	.	.	.	P	chenodeoxycholic acid
80	post-neonatal	M	GPD1	190	Het	AR	Hypertriglyceridemia, transient infantile, [MIM:614480]	12	NM_005276:exon7:c.901G>T(p.E301X)	Maternal	.	.	.	P	
80	post-neonatal	M	GPD1	190	Het	AR	Hypertriglyceridemia, transient infantile, [MIM:614480]	12	NM_005276:exon3:c.220-2A>G	Paternal	PMID 28944580. SEE HGMD DISEASE: Obesity, insulin resistance, fatty liver & short stature. SEE HGMD COMMENT: ;	DM	.	P	
81	post-neonatal	M	IARS1	114	Het	AR	Growth retardation, impaired intellectual development, hypotonia, and hepatopathy, [MIM:617093]	9	NM_002161:exon15:c.1497_1498del	Maternal	.	.	.	P	
81	post-neonatal	M	IARS1	114	Het	AR	Growth retardation, impaired intellectual development, hypotonia, and hepatopathy, [MIM:617093]	9	NM_002161:exon14:c.1310C>T	Paternal	PMID 27426735. SEE HGMD DISEASE: Growth retardation, prenatal onset with intellectual disability, muscular hypotonia & hepatopathy. SEE HGMD COMMENT: Intermediate but significant growth impairment in yeast. functional study.;	DM	Pathogenic	LP	
82	post-neonatal	M	LIPA	119	Het	AR	Wolman disease, [MIM:278000]; Cholesteryl ester storage disease, [MIM:278000]	10	NM_000235:exon7:c.796G>T(p.G266X)	Maternal	PMID 8617513. SEE HGMD DISEASE: Cholesterol ester storage disease. SEE HGMD COMMENT: ;	DM	Pathogenic	P	
82	post-neonatal	M	LIPA	119	Het	AR	Wolman disease, [MIM:278000]; Cholesteryl ester storage disease, [MIM:278000]	10	NM_000235:exon3:c.193C>T(p.R65X)	Paternal	PMID 9554751. SEE HGMD DISEASE: Cholesterol ester storage disease. SEE HGMD COMMENT: ;	DM	Pathogenic	P	
83	post-neonatal	M	MPV17	257	Het	AR	Charcot-Marie-Tooth disease, axonal, type 2EE, [MIM:618400]; Mitochondrial DNA depletion syndrome 6 (hepatocerebral type), [MIM:256810]	2	NM_002437:exon4:c.263_266delinsT(p.K88del)	Paternal	PMID 17694548. SEE HGMD DISEASE: Liver failure in infancy. SEE HGMD COMMENT: ;	DM	Likely_pathogenic	LP	L-carnitine, coenzyme Q10, vitamin B2
83	post-neonatal	M	MPV17	257	Het	AR	Charcot-Marie-Tooth disease, axonal, type 2EE, [MIM:618400]; Mitochondrial DNA depletion syndrome 6 (hepatocerebral type), [MIM:256810]	2	NM_002437:exon6:c.405C>G(p.Y135X)	Maternal	.	.	.	P	L-carnitine, coenzyme Q10, vitamin B2
84	neonatal	F	PEX1	172	Het	AR	Heimler syndrome 1, [MIM:234580]; Peroxisome biogenesis disorder 1B (NALD/IRD), [MIM:601539]; Peroxisome biogenesis disorder 1A (Zellweger), [MIM:214100]	7	NM_000466:exon12:c.2050C>T(p.Q684X)	Paternal	.	.	Uncertain_significance	P	
84	neonatal	F	PEX1	172	Het	AR	Heimler syndrome 1, [MIM:234580]; Peroxisome biogenesis disorder 1B (NALD/IRD), [MIM:601539]; Peroxisome biogenesis disorder 1A (Zellweger), [MIM:214100]	7	NM_000466:exon20:c.3043G>T(p.E1015X)	Maternal	.	.	.	P	
85	neonatal	F	PEX26	181	Hom	AR	Peroxisome biogenesis disorder 7A (Zellweger), [MIM:614872]; Peroxisome biogenesis disorder 7B, [MIM:614873]	22	NM_017929:exon2:c.28_29delinsG(p.L12Sfs*70)	Maternal	PMID 30968598. SEE HGMD DISEASE: Peroxisome biogenesis disorder. SEE HGMD COMMENT: ;	DM	Uncertain_significance	P	
85	neonatal	F	PEX26	181	Hom	AR	Peroxisome biogenesis disorder 7A (Zellweger), [MIM:614872]; Peroxisome biogenesis disorder 7B, [MIM:614873]	22	NM_017929:exon2:c.28_29delinsG(p.L12Sfs*70)	Paternal	PMID 30968598. SEE HGMD DISEASE: Peroxisome biogenesis disorder. SEE HGMD COMMENT: ;	DM	Uncertain_significance	P	

F: female; M: male; AD: autosomal dominant; Zygo: zygote; Inherit: inheritance; AR: autosomal recessive; Chr: chromosome; P: pathogenic; LP: likely pathogenic; VUS: variant of uncertain significance.

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