Supp table 2: Lysosomal related genes information about gene symbol, location, OMIM related diseases or phenotypes, and disease name.

| **Gene ID** | **Location** | **OMIM** | **Disease** |
| --- | --- | --- | --- |
| *ABHD5* | 3p21.33 | [604780](http://omim.org/entry/604780) | Chanarin-Dorfman syndrome |
| *AGA* | 4q34.3 | [613228](http://omim.org/entry/613228) | Aspartylglucosaminidase |
| *ARSA* | 22q13.33 | [607574](http://omim.org/entry/607574) | Metachromatic leukodystrophy |
| *ARSB* | 5q14.1 | [611542](http://omim.org/entry/611542) | Mucopolysaccharidosis type VI |
| *ASAH1* | 8p22 | [613468](http://omim.org/entry/613468) | Farber Disease |
| CLCN5 | Xp11.23 | [300008](http://omim.org/entry/300008) | X-linked hypercalciuric nephrolithiasis, Dent-1 |
| *CLN3* | 16p12.1 | [607042](http://omim.org/entry/607042) | Ceroid lipofuscinosis neuronal type 3 |
| *CLN5* | 13q22.3 | [608102](http://omim.org/entry/608102) | Finnish Variant Late Infantile CLN5 |
| *CLN6* | 15q23 | [606725](http://omim.org/entry/606725) | Kufs/Adult-onset NCL disease |
| *CLN8* | 8p23.3 | [607837](http://omim.org/entry/607837) | Northern Epilepsy/variant late infantile CLN8 |
| *CTNS* | 17p13.2 | [606272](http://omim.org/entry/606272) | Cystinosis |
| *CTSA* | 20q13.12 | [613111](http://omim.org/entry/613111) | Galactosialidosis |
| *CTSK* | 1q21.3 | [601105](http://omim.org/entry/601105) | Pycnodysostosis |
| *FIG4* | 6q21 | [609390](http://omim.org/entry/609390) | Charcot-Marie-Tooth type 4J |
| *FUCA1* | 1p36.11 | [612280](http://omim.org/entry/612280) | Fucosidosis |
| *GAA* | 17q25.3 | [606800](https://omim.org/entry/606800) | Pompe / Glycogen storage disease II |
| *GALC* | 14q31.3 | [606890](https://www.omim.org/entry/606890) | Krabbe Disease |
| *GALNS* | 16q24.3 | [612222](https://www.omim.org/entry/612222) | Mucopolysaccharidosis IVA |
| *GBA* | 1q22 | [606463](https://omim.org/entry/606463) | Gaucher Disease |
| *GLA* | Xq22.1 | [300644](https://www.omim.org/entry/300644) | Fabry Disease |
| *GLB1* | 3p22.3 | [611458](https://www.omim.org/entry/611458) | Gangliosidosis Type I |
| *GM2A* | 5q33.1 | [613109](https://www.omim.org/entry/613109) | Tay-Sachs Disease |
| *GNPTAB* | 12q23.2 | [607840](https://www.omim.org/entry/607840) | Mucolipidosis type II |
| *GNPTAG* | 16p13.3 | [607838](https://www.omim.org/entry/607838) | Mucolipidosis type III |
| *GNS* | 12q14.3 | [607664](https://www.omim.org/entry/607664) | Mucopolysaccharidosis type IIID |
| *GUSB* | 7q11.21 | [611499](https://omim.org/entry/611499) | Mucopolysaccharidosis VII |
| *HEXA* | 15q23 | [606869](https://www.omim.org/entry/606869) | Gangliosidosis Type II |
| *HEXB* | 5q13.3 | [606873](https://www.omim.org/entry/606873) | Sandhoff Disease |
| *HGSNAT* | 8p11 | [610453](https://www.omim.org/entry/610453) | Mucopolysaccharidosis type IIIC |
| *HYAL1* | 3p21.31 | [607071](https://www.omim.org/entry/607071) | Mucopolysaccharidosis type IX |
| *IDS* | Xq28 | [300823](https://omim.org/entry/300823) | Mucopolysaccharidosis type II |
| *IDUA* | 4q16.3 | [607014](https://omim.org/entry/607014) | Mucopolysaccharidosis type I |
| *LAMP2* | Xq24 | [309060](https://omim.org/entry/309060) | Danon Disease |
| *LIPA* | 10q23.31 | [613497](https://omim.org/entry/613497) | Lysosomal Acid Lipase Deficiency |
| *MAN2B1* | 19q13.13 | [609458](https://omim.org/entry/609458) | Mannosidosis |
| *MANBA* | 4q24 | [609489](https://omim.org/entry/609489) | Mannosidosis Beta |
| *MCOLN1* | 19p13.2 | [605248](https://omim.org/entry/605248) | Mucolipidosis IV |
| *NAGA* | 22q13.2 | [609242](https://omim.org/entry/609242) | Kanzaki Disease |
| *NAGLU* | 17q21.2 | [609701](https://omim.org/entry/609701) | Mucopolysaccharidosis type IIIB |
| *NEU1* | 6p21.33 | [608272](https://omim.org/entry/608272) | Sialidosis |
| *NPC1* | 18q11.2 | [607623](https://omim.org/entry/607623) | Niemann-Pick disease type C1 |
| *NPC2* | 14q24.3 | [601015](https://omim.org/entry/601015) | Niemann-Pick disease type C2 |
| *OCRL* | Xq26.1 | [300535](http://omim.org/entry/300535) | Dent disease 2 |
| *PNPLA2* | 11p15.5 | [609059](http://omim.org/entry/609059) | Neutral lipid storage disease with myopathy; NLSDM |
| *PPT1* | 1p34.2 | [600722](https://omim.org/entry/600722) | Ceroid lipofuscinosis neuronal type 1 |
| *PSAP* | 10q22.1 | [176801](https://omim.org/entry/176801) | Combined SAP deficiency |
| *SGSH* | 17q25.3 | [605270](https://omim.org/entry/605270) | Mucopolysaccharidosis type IIIA |
| *SLC17A5* | 6q13 | [604322](http://omim.org/entry/604322) | Salla disease/ Infantile free sialic acid storage disease (ISSD) |
| *SLC9A6* | Xq26.3 | [300231](http://omim.org/entry/300231) | Christianson syndrome |
| *SMPD1* | 11p15.4 | [607608](https://omim.org/entry/607608) | Niemann-Pick disease type A and B |
| *SUMF1* | 3p26.1 | [607939](https://omim.org/entry/607939) | Multiple sulfatase deficiency |
| *TPP1* | 11p15.4 | [607998](https://www.omim.org/entry/607998) | Ceroid lipofuscinosis neuronal type 2 |