Table 2: Lysosomal-related genes SNV variants found in the Glioblastoma multiforme dataset. The dbSNP codes, pathogenicity classification and allele frequencies are shown in the columns.

| **Glioblastoma Multiforme, TCGA-GBM** | | | |
| --- | --- | --- | --- |
| **Gene** | **dbSNP** | **Prediction** | **gnomAD Allele Frequency** |
| *AGA* | rs572348048 | Probably damaging, deleterious | 0.0000159 |
| *ARSA* | rs745884435 | Deleterious | 0.00000418 |
| *ARSB* | rs773492223 | Stop gained, probably damaging1 | 0.0000119 |
| *ARSB* | rs891298440 | Stop gained, probably damaging2 | 0.00000398 |
| *ASAH1* | rs758747892 | Deleterious | N/A |
| *CLN3* | rs768614719 | Deleterious3 | N/A |
| *CTSA* | rs758642867 | Deleterious | 0.00000399 |
| *FUCA1* | rs1005744482 | Deleterious | 0.0000199 |
| *FUCA1* | rs1341328085 | Deleterious | 0.00000398 |
| *GAA* | rs201896815 | Probably damaging, deleterious4 | 0.00000797 |
| *GAA* | rs777275359 | Deleterious | 0.0000196 |
| *GALNS* | rs1028668536 | Probably damaging, deleterious5 | 0.00000404 |
| *GBA* | rs750712570 | Deleterious | 0.00000398 |
| *GLB1* | rs750202423 | Deleterious | 0.000012 |
| *GLB1* | rs794729217 | Deleterious6 | 0.00000807 |
| *GNPTAB* | rs376398528 | Deleterious7 | 0.0000875 |
| *GNPTAB* | rs1245543262 | Deleterious | 0.0000239 |
| *GNPTAB* | rs768727152 | Probably damaging, deleterious | 0.0000119 |
| *GNPTAB* | rs1439948085 | Possibly damaging | 0.00000398 |
| *GNPTAB* | rs1361160803 | Deleterious | 0.00000398 |
| *GNPTG* | rs372319167 | Deleterious | 0.00000414 |
| *GUSB* | rs1344332366 | Deleterious | 0.00000398 |
| *HEXA* | rs121907957 | Deleterious8 | 0.0000319 |
| *HEXA* | rs200513831 | Probably damaging, deleterious | 0.000579 |
| *HGSNAT* | rs746875137 | Deleterious | 0.00000401 |
| *MAN2B1* | rs747744816 | Probably damaging, deleterious | 0.0000319 |
| *MAN2B1* | rs797044680 | Deleterious9 | 0.00000398 |
| *MAN2B1* | rs139255957 | Possibly damaging, deleterious | 0.0000319 |
| *MCOLN1* | rs1349755445 | Deleterious | 0.00000398 |
| *MCOLN1* | rs767950930 | Deleterious10 | 0.0000159 |
| *NPC1* | rs775915490 | Deleterious | 0.00000398 |
| *NPC1* | rs120074132 | Deleterious11 | 0.0000159 |
| *NPC1* | rs34302553 | Probably damaging12 | 0.000966 |
| *NPC1* | rs1259715051 | Possibly damaging13 | 0.00000398 |
| *PPT1* | rs386833634 | Deleterious | 0.0000318 |
| *SGSH* | rs781743238 | Possibly damaging, deleterious | 0.0000479 |
| *TPP1* | rs142672910 | Deleterious | 0.00031 |
| *TPP1* | rs1266615275 | Probably damaging14 | 0.0000319 |

1 Reported in MPS VI patients (Karageorgos *et al.*, 2007; Brands *et al.*, 2013; Zheng *et al.*, 2014; Ferla *et al.*, 2015).

2 Reported in MPS VI patients (Villani *et al.*, 2010; Wood *et al.*, 2012; Chistiakov *et al.*, 2014; Ferla *et al.*, 2015).

3 Reported in Neuronal Ceroid Lipofuscinosis study (Jalanko *et al.*, 2009).

4 Reported in Pompe patients (Fernandez-Hojas *et al.*, 2002; Pittis *et al.*, 2008; Oba-Shinjo *et al.*, 2009; Labrousse *et al.*, 2010; Fu *et al.*, 2014).

5 Reported in MPS IVA patients (Tomatsu *et al.*, 2005; Solanki *et al.*, 2013; Morrone *et al.*, 2014; Liu *et al.*, 2017).

6 Reported in GM1 patients (Silva *et al.*, 1999; Roze *et al.*, 2005).

7 Reported in Mucolipidosis study (Raza *et al.*, 2016).

8 Reported in Tay-Sachs studies(Nakano *et al.*, 1990; Drucker *et al.*, 1992; Montalvo *et al.*, 2005; Gross *et al.*, 2008; Jamali *et al.*, 2014).

9 Reported in Mannosidosis patients (Nilssen *et al.*, 2011; Borgwardt *et al.*, 2015).

10 Reported in Mucolipidosis patients (Sun *et al.*, 2000; Bargal *et al.*, 2001; Gross *et al.*, 2008).

11 Reported in Niemann-Pick C study (Sun *et al.*, 2001).

12 Reported in Niemann-Pick C1 study (Wassif *et al.*, 2015).

13 Reported in Neuronal Ceroid Lipofuscinoses studies (Salonen *et al.*, 2000; Jalanko *et al.*, 2009; Kousi *et al.*, 2012).

14 Reported in Neuronal Ceroid Lipofuscinoses study (Jalanko *et al.*, 2009).