Table S1: The gene panel list

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| L1CAM | PLP1 | ATL1 | SPAST | CYP7B1 | NIPA1 | SPG7 |
| KIAA0196 | ALDH18A1 | SPG11 | RTN2 | HSPD1 | SPG14 | ZFYVE26 |
| SPG16 | ERLIN2 | SPG19 | KIF5A | SPG20 | ACP33 | SLC16A2 |
| SPG23 | SPG24 | SPG25 | B4GALNT1 | SPG27 | DDHD1 | SPG29 |
| KIF1A | REEP1 | SPG32 | ZFYVE27 | SPG34 | FA2H | SPG36 |
| SPG37 | SPG38 | PNPLA6 | SPG41 | SLC33A1 | C19ORF12 | GJC2 |
| NT5C2 | GBA2 | AP4B1 | AP5Z1 | TECPR2 | AP4M1 | AP4E1 |
| AP4S1 | VPS37A | DDHD2 | C12ORF65 | CYP2U1 | TFG | KIF1C |
| USP8 | WDR48 | ARL6IP1 | ERLIN1 | AMPD2 | ENTPD1 | ARSI |
| PGAP1 | FLRT1 | RAB3GAP2 | MARS | ZFR | REEP2 | CPT1C |
| IBA57 | BSCL2 |  |  |  |  |  |