

Table S1**Summary of the probands' clinical diagnoses information**

| Sample name | Gene | Gender | Age | Vision (left eye/right eye) | Disease history | Disease |
|-------------|----------|--------|-----|-----------------------------|---------------------|---|
| 19093 | ABCA4 | M | 16 | 0.3/0.5 | Sporadic | Recessive Stargardt disease |
| 19179 | ABCA4 | F | 38 | 0.1/0.1 | Sporadic | Recessive Stargardt disease |
| 19159 | AH1 | M | 25 | 0.2/0.3 | Sporadic | Recessive Joubert syndrome |
| 19169 | AIP1 | M | 43 | 0.1/0.1 | Sporadic | Cone or cone-rod dystrophy |
| 19156 | ALMS1 | M | 5 | 0.2/0.2 | Sporadic | Recessive Alström syndrome |
| CDRP007 | C2orf71 | M | 28 | FC/BE | Sporadic | Recessive retinitis pigmentosa |
| 19071 | CA4 | M | 31 | FC/BE | Autosomal dominant | Dominant retinitis pigmentosa |
| 19141 | CACNA1F | M | 7 | 0.5/0.4 | Sporadic | Congenital stationary night blindness |
| 19141 | CACNA1F | M | 4 | 0.5/0.4 | Sporadic | Cone or cone-rod dystrophy |
| 19182 | CDHR1 | M | 27 | 0.2/0.3 | Autosomal recessive | Recessive cone-rod dystrophy |
| 19182 | CDHR1 | M | 15 | 0.2/0.3 | Autosomal recessive | Cone or cone-rod dystrophy |
| CDRP008 | CHM | F | 20 | 0.1/0.07 | Sporadic | Choroideremia |
| 19175 | CNGA1 | F | 46 | 0.07/0.2 | Autosomal recessive | Recessive retinitis pigmentosa |
| 19105 | COL11A1 | F | 20 | 0.3/0.3 | Sporadic | Dominant Stickler syndrome |
| 19159 | COL11A1 | M | 25 | 0.2/0.3 | Sporadic | Dominant Stickler syndrome |
| 19171 | CRB1 | F | 44 | 0.5/0.6 | Autosomal dominant | Dominant pigmented paravenous chorioretinal atrophy |
| CDRP003 | CRB1 | M | 35 | 0.3/0.1 | Sporadic | Dominant pigmented paravenous chorioretinal atrophy |
| 19160 | CRX | M | 5 | 0.03/0.03 | Sporadic | Dominant retinitis pigmentosa |
| 19095 | CYP4V2 | M | 31 | 0.04/BE | Sporadic | Recessive retinitis pigmentosa |
| 19087 | EYS | M | 53 | 0.1/no LP | Sporadic | Recessive retinitis pigmentosa |
| 19090 | EYS | M | 32 | 0.3/0.2 | Sporadic | Recessive retinitis pigmentosa |
| 19091 | EYS | F | 36 | 0.6/0.9 | Sporadic | Recessive retinitis pigmentosa |
| 19106 | EYS | M | 35 | 0.3/0.2 | Sporadic | Recessive retinitis pigmentosa |
| 19150 | EYS | M | 32 | 0.8/0.6 | Sporadic | Recessive retinitis pigmentosa |
| XHPR004 | EYS | F | 25 | FC/BE | Sporadic | Recessive retinitis pigmentosa |
| 19096 | HMCN1 | M | 35 | 0.3/0.1 | Sporadic | Dominant macular dystrophy |
| 19121 | HMCN1 | M | 24 | -/0.04 | Sporadic | Dominant macular dystrophy |
| 19140 | HMCN1 | M | 6 | 0.1/0.2 | Sporadic | Dominant macular dystrophy |
| 19161 | HMCN1 | M | 30 | 0.2/0.2 | Sporadic | Dominant macular dystrophy |
| 19177 | HMCN1 | M | 25 | 0.07/0.1 | Autosomal dominant | Dominant macular dystrophy |
| CDRP020 | HMCN1 | M | 24 | 0.1/0.2 | Sporadic | Dominant macular dystrophy |
| Avastin8 | IMPG2 | M | 25 | 0.2/0.2 | Sporadic | Recessive retinitis pigmentosa |
| 19109 | KCNJ13 | M | 28 | 0.3/0.6 | Sporadic | Dominant vitreoretinal degeneration |
| CDRP020 | KIF11 | M | 25 | 0.1/0.4 | Sporadic | Dominant microcephaly |
| 19145 | MERTK | F | 20 | 0.3/0.3 | Autosomal dominant | Recessive retinitis pigmentosa |
| 19148 | NPHP1 | F | 7 | 0.1/0.05 | Sporadic | Recessive Senior-Loken syndrome |
| 19148 | NPHP4 | F | 7 | 0.1/0.05 | Sporadic | Recessive Senior-Loken syndrome |
| 19167 | PDE6A | M | 42 | 0.7/0.6 | Sporadic | Recessive retinitis pigmentosa |
| 19172 | PDE6A | M | 33 | 0.1/0.3 | Autosomal recessive | Recessive retinitis pigmentosa |
| 19151 | PDE6B | F | 45 | 0.2/0.2 | Sporadic | Recessive retinitis pigmentosa |
| 19083 | PDE6B | M | 32 | 0.02/0.04 | Sporadic | Congenital stationary night blindness |
| 19158 | PDE6B | F | 23 | 0.2/0.2 | Sporadic | Congenital stationary night blindness |
| 19098 | PTPNM3 | M | 25 | 0.1/0.1 | Sporadic | Cone or cone-rod dystrophy |
| 19176 | RHO | F | 30 | 0.1/0.2 | Autosomal dominant | Dominant retinitis pigmentosa |
| 19185 | RHO | M | 52 | FC/BE | Sporadic | Dominant retinitis pigmentosa |
| 19120 | RP1 | M | 29 | 0.6/0.6 | Sporadic | Dominant retinitis pigmentosa |
| 19139 | RP1 | M | 35 | FC/BE | Autosomal recessive | Recessive retinitis pigmentosa |
| CDRP011 | RP1 | F | 23 | 0.4/0.6 | Sporadic | Dominant retinitis pigmentosa |
| 19129 | RP1L1 | F | 28 | 0.7/0.5 | Sporadic | Recessive retinitis pigmentosa |
| CDRP014 | RPE65 | F | 30 | 0.2/0.03 | Sporadic | Recessive retinitis pigmentosa |
| CDRP009 | RPGR | F | 8 | 0.3/0.03 | X-linked | X-linked retinitis pigmentosa |
| 19143 | RS1 | M | 3 | 0.2/0.03 | Sporadic | Other retinopathy, X-linked |
| 19157 | RS1 | M | 40 | -/- | Sporadic | Other retinopathy, X-linked |
| 19138 | SNRNP200 | M | 11 | 0.3/0.3 | Sporadic | Dominant retinitis pigmentosa |
| 19153 | TIMP3 | M | 42 | 0.6/0.7 | Autosomal dominant | Dominant Sorsby's fundus dystrophy |
| 19128 | VCAN | M | 43 | 0.1/0.7 | Sporadic | Dominant Wagner disease and erosive vitreoretinopathy |