**Table S3.** Retina-centric genes used for DTW analysis.

|  |  |  |
| --- | --- | --- |
| **Ensembl\_ID** | **Symbol** | **Gene\_name** |
| ENSG00000130203 | APOE | apolipoprotein E  |
| ENSG00000171885 | AQP4 | aquaporin 4  |
| ENSG00000120500 | ARR3 | arrestin 3, retinal (X-arrestin)  |
| ENSG00000139352 | ASCL1 | achaete-scute family bHLH transcription factor 1  |
| ENSG00000179774 | ATOH7 | atonal bHLH transcription factor 7  |
| ENSG00000143032 | BARHL2 | BarH-like homeobox 2  |
| ENSG00000180828 | BHLHE22 | basic helix-loop-helix family, member e22  |
| ENSG00000125533 | BHLHE23 | basic helix-loop-helix family, member e23  |
| ENSG00000105507 | CABP5 | calcium binding protein 5  |
| ENSG00000104327 | CALB1 | calbindin 1, 28kDa  |
| ENSG00000172137 | CALB2 | calbindin 2  |
| ENSG00000070748 | CHAT | choline O-acetyltransferase  |
| ENSG00000120885 | CLU | clusterin  |
| ENSG00000198515 | CNGA1 | cyclic nucleotide gated channel alpha 1  |
| ENSG00000144191 | CNGA3 | cyclic nucleotide gated channel alpha 3  |
| ENSG00000070729 | CNGB1 | cyclic nucleotide gated channel beta 1  |
| ENSG00000170289 | CNGB3 | cyclic nucleotide gated channel beta 3  |
| ENSG00000144619 | CNTN4 | contactin 4  |
| ENSG00000105392 | CRX | cone-rod homeobox  |
| ENSG00000144355 | DLX1 | distal-less homeobox 1  |
| ENSG00000115844 | DLX2 | distal-less homeobox 2  |
| ENSG00000164330 | EBF1 | early B-cell factor 1  |
| ENSG00000221818 | EBF2 | early B-cell factor 2  |
| ENSG00000108001 | EBF3 | early B-cell factor 3  |
| ENSG00000163508 | EOMES | eomesodermin  |
| ENSG00000139445 | FOXN4 | forkhead box N4  |
| ENSG00000146276 | GABRR1 | gamma-aminobutyric acid (GABA) A receptor, rho 1  |
| ENSG00000128683 | GAD1 | glutamate decarboxylase 1 (brain, 67kDa)  |
| ENSG00000136750 | GAD2 | glutamate decarboxylase 2 (pancreatic islets and brain, 65kDa)  |
| ENSG00000172020 | GAP43 | growth associated protein 43  |
| ENSG00000135821 | GLUL | glutamate-ammonia ligase  |
| ENSG00000114349 | GNAT1 | guanine nucleotide binding protein (G protein), alpha transducing activity polypeptide 1  |
| ENSG00000134183 | GNAT2 | guanine nucleotide binding protein (G protein), alpha transducing activity polypeptide 2  |
| ENSG00000111664 | GNB3 | guanine nucleotide binding protein (G protein), beta polypeptide 3  |
| ENSG00000127928 | GNGT1 | guanine nucleotide binding protein (G protein), gamma transducing activity polypeptide 1  |
| ENSG00000167083 | GNGT2 | guanine nucleotide binding protein (G protein), gamma transducing activity polypeptide 2  |
| ENSG00000113262 | GRM6 | glutamate receptor, metabotropic 6  |
| ENSG00000048545 | GUCA1A | guanylate cyclase activator 1A (retina)  |
| ENSG00000112599 | GUCA1B | guanylate cyclase activator 1B (retina)  |
| ENSG00000101890 | GUCY2F | guanylate cyclase 2F, retinal  |
| ENSG00000114315 | HES1 | hes family bHLH transcription factor 1  |
| ENSG00000197921 | HES5 | hes family bHLH transcription factor 5  |
| ENSG00000164683 | HEY1 | hes-related family bHLH transcription factor with YRPW motif 1  |
| ENSG00000135547 | HEY2 | hes-related family bHLH transcription factor with YRPW motif 2  |
| ENSG00000170549 | IRX1 | iroquois homeobox 1  |
| ENSG00000170561 | IRX2 | iroquois homeobox 2  |
| ENSG00000176842 | IRX5 | iroquois homeobox 5  |
| ENSG00000016082 | ISL1 | ISL LIM homeobox 1  |
| ENSG00000159556 | ISL2 | ISL LIM homeobox 2  |
| ENSG00000273706 | LHX1 | LIM homeobox 1  |
| ENSG00000106689 | LHX2 | LIM homeobox 2  |
| ENSG00000121454 | LHX4 | LIM homeobox 4  |
| ENSG00000100285 | NEFH | neurofilament, heavy polypeptide  |
| ENSG00000277586 | NEFL | neurofilament, light polypeptide  |
| ENSG00000104722 | NEFM | neurofilament, medium polypeptide  |
| ENSG00000162992 | NEUROD1 | neuronal differentiation 1  |
| ENSG00000123307 | NEUROD4 | neuronal differentiation 4  |
| ENSG00000164600 | NEUROD6 | neuronal differentiation 6  |
| ENSG00000178403 | NEUROG2 | neurogenin 2  |
| ENSG00000171786 | NHLH1 | nescient helix loop helix 1  |
| ENSG00000177551 | NHLH2 | nescient helix loop helix 2  |
| ENSG00000148400 | NOTCH1 | notch 1  |
| ENSG00000278570 | NR2E3 | nuclear receptor subfamily 2, group E, member 3  |
| ENSG00000175745 | NR2F1 | nuclear receptor subfamily 2, group F, member 1  |
| ENSG00000153234 | NR4A2 | nuclear receptor subfamily 4, group A, member 2  |
| ENSG00000129535 | NRL | neural retina leucine zipper  |
| ENSG00000184221 | OLIG1 | oligodendrocyte transcription factor 1  |
| ENSG00000205927 | OLIG2 | oligodendrocyte lineage transcription factor 2  |
| ENSG00000169856 | ONECUT1 | one cut homeobox 1  |
| ENSG00000119547 | ONECUT2 | one cut homeobox 2  |
| ENSG00000268221 | OPN1MW | opsin 1 (cone pigments), medium-wave-sensitive  |
| ENSG00000128617 | OPN1SW | opsin 1 (cone pigments), short-wave-sensitive  |
| ENSG00000122375 | OPN4 | opsin 4  |
| ENSG00000115507 | OTX1 | orthodenticle homeobox 1  |
| ENSG00000165588 | OTX2 | orthodenticle homeobox 2  |
| ENSG00000007372 | PAX6 | paired box 6  |
| ENSG00000132915 | PDE6A | phosphodiesterase 6A, cGMP-specific, rod, alpha  |
| ENSG00000133256 | PDE6B | phosphodiesterase 6B, cGMP-specific, rod, beta  |
| ENSG00000095464 | PDE6C | phosphodiesterase 6C, cGMP-specific, cone, alpha prime  |
| ENSG00000185527 | PDE6G | phosphodiesterase 6G, cGMP-specific, rod, gamma  |
| ENSG00000139053 | PDE6H | phosphodiesterase 6H, cGMP-specific, cone, gamma  |
| ENSG00000131788 | PIAS3 | protein inhibitor of activated STAT, 3  |
| ENSG00000152192 | POU4F1 | POU class 4 homeobox 1  |
| ENSG00000151615 | POU4F2 | POU class 4 homeobox 2  |
| ENSG00000091010 | POU4F3 | POU class 4 homeobox 3  |
| ENSG00000106536 | POU6F2 | POU class 6 homeobox 2  |
| ENSG00000057657 | PRDM1 | PR domain containing 1, with ZNF domain  |
| ENSG00000154229 | PRKCA | protein kinase C, alpha  |
| ENSG00000117707 | PROX1 | prospero homeobox 1  |
| ENSG00000168267 | PTF1A | pancreas specific transcription factor, 1a  |
| ENSG00000134438 | RAX | retina and anterior neural fold homeobox  |
| ENSG00000109047 | RCVRN | recoverin  |
| ENSG00000163914 | RHO | rhodopsin  |
| ENSG00000069667 | RORA | RAR-related orphan receptor A  |
| ENSG00000198963 | RORB | RAR-related orphan receptor B  |
| ENSG00000143171 | RXRG | retinoid X receptor, gamma  |
| ENSG00000130561 | SAG | S-antigen; retina and pineal gland (arrestin)  |
| ENSG00000256463 | SALL3 | spalt-like transcription factor 3  |
| ENSG00000119042 | SATB2 | SATB homeobox 2  |
| ENSG00000079689 | SCGN | secretagogin, EF-hand calcium binding protein  |
| ENSG00000138083 | SIX3 | SIX homeobox 3  |
| ENSG00000184302 | SIX6 | SIX homeobox 6  |
| ENSG00000074621 | SLC24A1 | solute carrier family 24 (sodium/potassium/calcium exchanger), member 1  |
| ENSG00000155886 | SLC24A2 | solute carrier family 24 (sodium/potassium/calcium exchanger), member 2  |
| ENSG00000101438 | SLC32A1 | solute carrier family 32 (GABA vesicular transporter), member 1  |
| ENSG00000145335 | SNCA | synuclein, alpha (non A4 component of amyloid precursor)  |
| ENSG00000173267 | SNCG | synuclein, gamma (breast cancer-specific protein 1)  |
| ENSG00000181449 | SOX2 | SRY (sex determining region Y)-box 2  |
| ENSG00000005513 | SOX8 | SRY (sex determining region Y)-box 8  |
| ENSG00000125398 | SOX9 | SRY (sex determining region Y)-box 9  |
| ENSG00000106089 | STX1A | syntaxin 1A (brain)  |
| ENSG00000180176 | TH | tyrosine hydroxylase  |
| ENSG00000151090 | THRB | thyroid hormone receptor, beta  |
| ENSG00000154096 | THY1 | Thy-1 cell surface antigen  |
| ENSG00000134160 | TRPM1 | transient receptor potential cation channel, subfamily M, member 1  |
| ENSG00000026025 | VIM | vimentin  |
| ENSG00000100987 | VSX1 | visual system homeobox 1  |
| ENSG00000119614 | VSX2 | visual system homeobox 2  |