

Supplemental Table 1. Genes upregulated by Hoxb1b.

| | Genbank | Fold Change | p value | Description (Compugen Annotation) |
|----|----------|-------------|----------|--|
| 1 | X70322 | 21.93 | 0.0178 | B.erio zf Krx-20 mRNA.; Early growth response 2b |
| 2 | AF071245 | 19.48 | 0.00763 | Danio rerio homeobox protein (hoxa3a) mRNA, complete cds.; Homeo box A3a |
| 3 | AB006322 | 17.67 | 0.0101 | Danio rerio mRNA for transcription factor MafB, complete cds.; V-maf myelocytomatous oncogene family, protein B (avian) |
| 4 | A1601442 | 14.32 | 0.0248 | fc11c10.x1 Zebrafish WashU MPIMG EST Danio rerio cDNA clone IMAGE:3721074 3', mRNA sequence.; Wu:fc11c10 |
| 5 | Y13944 | 10.78 | 0.00766 | Danio rerio mRNA for Hoxb3 protein.; Homeo box B3a |
| 6 | AW184433 | 8.862 | 0.000554 | f14b06.y1 Zebrafish adult olfactory Danio rerio cDNA 5' similar to SW:CD20_HUMAN P11836 B-LYMPHOCTYTE ANTIGEN CD20 ;, mRNA sequence.; Wu:fj02f05 |
| 7 | AW281753 | 8.679 | 0.00399 | f56b03.x1 zebrafish adult brain Danio rerio cDNA 3', mRNA sequence.; Wu:f56b03 |
| 8 | AI667023 | 8.413 | 0.0094 | fc24f10.y1 Zebrafish WashU MPIMG EST Danio rerio cDNA clone IMAGE:3722347 5', mRNA sequence.; Zgc:91987 |
| 9 | AF307010 | 8.24 | 0.00124 | Danio rerio transcription factor Hoxa2 (Hoxa2) mRNA, complete cds.; Homeo box A2b |
| 10 | AF071568 | 7.937 | 0.000661 | expressed in rhombomeres 3, 4, 5, expressed at low levels in rhombomere 7 posteriorly into the spinal cord; expressed in head neural crest at 24 hpf. Danio rerio homeobox transcription factor (hoxb2a) mRNA, complete cds.; Homeo box B2a |
| 11 | BI671376 | 7.285 | 0.0121 | fp54e10.x1 Zebrafish adult retina cDNA Danio rerio cDNA clone IMAGE:4786675 3' similar to contains element MER16 repetitive element ;, mRNA sequence.; Sb.cb1035 |
| 12 | AF124095 | 7.197 | 0.0134 | Danio rerio iroquois homeobox protein Ziro3 (Ziro3) mRNA, complete cds.; Iroquois homeobox protein 3a |
| 13 | AI641757 | 6.994 | 0.0144 | fc23f06.x1 Zebrafish WashU MPIMG EST Danio rerio cDNA clone IMAGE:3722243 3', mRNA sequence.; Wu:fc23f06 |
| 14 | AI957504 | 6.831 | 0.00842 | fc92f01.x1 Zebrafish WashU MPIMG EST Danio rerio cDNA clone IMAGE:3728857 3', mRNA sequence.; Wu:fd06c09 |
| 15 | U40995 | 6.704 | 0.00238 | Danio rerio Hox-a1 gene, complete cds. |
| 16 | AF222996 | 5.993 | 0.00136 | Danio rerio noca-like Zn-finger protein (niz) mRNA, complete cds.; Noca related zinc finger 1 |
| 17 | AF052249 | 5.824 | 0.0322 | winged helix protein; Danio rerio fork head domain protein FKD6 (fk6d) mRNA, complete cds.; Forkhead box D3 |
| 18 | BM024206 | 5.448 | 0.000304 | fu47e09.x1 zebrafish adult brain Danio rerio cDNA clone IMAGE:5332697 3', mRNA sequence.; Cytochrome P450, family 26, subfamily b, polypeptide 1 |
| 19 | AI942951 | 5.435 | 0.00149 | fc79g06.x1 Zebrafish WashU MPIMG EST Danio rerio cDNA clone IMAGE:3727642 3', mRNA sequence.; Transcribed locus |
| 20 | AI878761 | 5.409 | 0.025 | fc66b04.x1 Zebrafish WashU MPIMG EST Danio rerio cDNA clone IMAGE:3726319 3', mRNA sequence.; Sb:cb3 |
| 21 | AA494787 | 5.28 | 5.97E-05 | fa12f06.s1 Zebrafish ICRF-zfIs Danio rerio cDNA clone 8M18 3' similar to contains element MER11 MER11 repetitive element ;, mRNA sequence. |
| 22 | AI793592 | 4.955 | 0.00332 | fc51e09.x1 Zebrafish WashU MPIMG EST Danio rerio cDNA clone IMAGE:3724936 3', mRNA sequence.; Wu:fc51e09 |
| 23 | BE200897 | 4.895 | 0.0119 | fk83c05.y1 Zebrafish Research Genetics C32 fin Danio rerio cDNA 5' similar to SW:PP11_HUMAN P21128 PLACENTAL PROTEIN 11 PRECURSOR ;, mRNA sequence.; ELAV (embryonic lethal, abnormal vision, Drosophila)-like 3 (Hu antigen C) |
| 24 | AI461323 | 4.866 | 0.0239 | fb40g10.x1 Zebrafish WashU MPIMG EST Danio rerio cDNA clone IMAGE:3714402 3', mRNA sequence.; Transcribed locus |
| 25 | AF071251 | 4.701 | 9.15E-05 | Danio rerio homeobox protein (hoxb1a) gene, complete cds. |
| 26 | AI793934 | 4.644 | 0.0416 | fc56c09.x1 Zebrafish WashU MPIMG EST Danio rerio cDNA clone IMAGE:3725392 3', mRNA sequence.; Wu:fc56c09 |
| 27 | BM154967 | 4.535 | 0.00121 | f91h04.y1 Zebrafish SJD adult male II Danio rerio cDNA clone IMAGE:5544798 5' similar to SW:CRG3_CYPCA P28022 GAMMA CRYSTALLIN M3 ;contains element OFR OFR repetitive element ;, mRNA sequence. |
| 28 | AF398433 | 4.226 | 0.0257 | Danio rerio iroquois homeodomain transcription factor Ziro7 mRNA, complete cds.; Iroquois homeobox protein 7 |
| 29 | AW567515 | 4.167 | 0.00555 | fk28d05.x1 zebrafish fin day1 regeneration Danio rerio cDNA 3', mRNA sequence.; Wu:fk14g08 |
| 30 | AW233713 | 4.072 | 0.011 | f40g04.x1 zebrafish adult brain Danio rerio cDNA 3', mRNA sequence.; Wu:f40g04 |
| 31 | BI534285 | 3.806 | 0.0208 | fr8g05.x1 zebrafish adult brain Danio rerio cDNA clone IMAGE:4967985 3', mRNA sequence.; Transcribed locus |
| 32 | AW279672 | 3.718 | 0.0111 | f43a10.x1 zebrafish adult brain Danio rerio cDNA 3', mRNA sequence.; Retinol dehydrogenase 12 (all-trans and 9-cis) |
| 33 | BF938272 | 3.647 | 0.00929 | fm74f02.y1 Zebrafish adult retina cDNA Danio rerio cDNA clone IMAGE:4201107 5', mRNA sequence. |
| 34 | BG304213 | 3.628 | 0.0115 | f133a10.x1 Sugano Kawakami zebrafish DRA Danio rerio cDNA clone IMAGE:3815347 3', mRNA sequence.; Wu:fc41f04 |
| 35 | BI430048 | 3.531 | 0.00103 | fs6f12.y1 Zebrafish neuronal Danio rerio cDNA clone IMAGE:5076646 5', mRNA sequence.; Transcribed locus |
| 36 | BG985673 | 3.5 | 0.0136 | 2025 NICHD_Zebrafish_normalized_1 Danio rerio cDNA clone 2025, mRNA sequence.; Id:ibd2025 |
| 37 | AF359423 | 3.291 | 0.00708 | Danio rerio claudin a (clna) mRNA, complete cds.; Claudin a |
| 38 | AI721660 | 3.281 | 0.00485 | fc30f10.x1 Zebrafish WashU MPIMG EST Danio rerio cDNA clone IMAGE:3722923 3', mRNA sequence.; Wu:fc30f10 |
| 39 | BI845046 | 3.272 | 0.00975 | tq34h09.y1 zebrafish adult brain Danio rerio cDNA clone IMAGE:4833640 5', mRNA sequence.; Transcribed locus |
| 40 | AF222995 | 3.255 | 0.00085 | Danio rerio homeobox transcription factor Meis3 (meis3) mRNA, complete cds.; Myeloid ecotropic viral integration site 3 |
| 41 | BE693123 | 3.212 | 0.00948 | zeh0225f Zebrafish Embryonic Heart cDNA Library Danio rerio cDNA clone zeh0225 3', mRNA sequence.; Wu:fc37f07 |
| 42 | AI965251 | 3.125 | 0.0202 | fb88e05.x1 Zebrafish WashU MPIMG EST Danio rerio cDNA clone IMAGE:3728480 3', mRNA sequence.; Wu:fc65f09 |
| 43 | AI957828 | 3.095 | 0.00446 | fd06e12.x1 Zebrafish WashU MPIMG EST Danio rerio cDNA clone IMAGE:3730126 3' similar to SW:RHOE_HUMAN P52199 RHO-RELATED GTP-BINDING PROTEIN RHOE ;, mRNA sequence.; Wu:fd06e12 |
| 44 | BI325759 | 3.075 | 0.014 | fr04e08.y1 zebrafish fin day3 regeneration Danio rerio cDNA clone 4927191 4927191 5' similar to SW:OIF_BOVIN P19879 OSTEOINDUCTIVE FACTOR PRECURSOR ;, mRNA sequence. |
| 45 | BI890305 | 3.03 | 0.00503 | ZF637-2-002060 Zebrafish shield stage whole embryo cDNA library MPMGP637 Danio rerio cDNA clone MPMGP637_4N21:MPMGP637N214 5', mRNA sequence.; Sb:cb33 |
| 46 | AW419653 | 2.944 | 0.0213 | fj81f11.y1 zebrafish gridded kidney Danio rerio cDNA 5', mRNA sequence.; Wu:fj81f11 |
| 47 | AI957801 | 2.885 | 0.0223 | fd06a10.x1 Zebrafish WashU MPIMG EST Danio rerio cDNA clone IMAGE:3730074 3' similar to SW:ISH2_STOHE P81129 KUNITZ-TYPE PROTEINASE INHIBITOR SHPI-2 ;, mRNA sequence.; Transcribed locus, weakly similar to NP_031764.1 procollagen, type VII, alpha 1 [Mus musculus] |
| 48 | AW826481 | 2.825 | 0.0313 | fk62d09.x1 Zebrafish adult retina cDNA Danio rerio cDNA 3', mRNA sequence.; Transcribed locus |
| 49 | BE201450 | 2.801 | 0.0257 | fk82h02.y1 Zebrafish Research Genetics C32 fin Danio rerio cDNA 3' similar to SW:F16P_RABIT P00637 FRUCTOSE-1,6-BISPHOSPHATASE ;, mRNA sequence.; Fructose-1,6-bisphosphatase 1, like |
| 50 | BG729476 | 2.78 | 0.0311 | fo5b08.y1 zebrafish gridded kidney Danio rerio cDNA clone IMAGE:4726623 5', mRNA sequence.; Wu:fa55e10 |
| 51 | BI880801 | 2.754 | 0.00476 | fm79h10.x1 zebrafish gridded kidney Danio rerio cDNA clone IMAGE:4234218 3', mRNA sequence.; Transcribed locus |
| 52 | AW420566 | 2.747 | 0.0121 | fj83b12.x1 zebrafish gridded kidney Danio rerio cDNA 3', mRNA sequence.; Wu:fj67h12 |
| 53 | AF376049 | 2.742 | 0.00146 | Danio rerio transcription factor Meis4.1a (meis4.1a) mRNA, complete cds.; Myeloid ecotropic viral integration site 4.1a |
| 54 | AY107309 | 2.732 | 0.00858 | Danio rerio iroquois homeobox protein Ziro5 (ziro5) mRNA, complete cds.; Iroquois homeobox protein 5 |
| 55 | AI722745 | 2.723 | 0.00152 | fc31a07.y1 Zebrafish WashU MPIMG EST Danio rerio cDNA clone IMAGE:3722964 5' similar to gb:X52611 TRANSCRIPTION FACTOR AP-2 (HUMAN);, mRNA sequence.; Transcription factor AP-2 alpha |
| 56 | BI982411 | 2.711 | 0.0121 | fu61g04.x1 zebrafish adult brain Danio rerio cDNA clone IMAGE:5333959 3', mRNA sequence.; Zgc:92325 |
| 57 | BM082504 | 2.657 | 0.0114 | fu22a10.y1 Campbell zebrafish ovary Danio rerio cDNA clone IMAGE:5306010 5' similar to TR:Q9UMX3 Q9UMX3 BCL-2-RELATED OVARIAN KILLER PROTEIN.;, mRNA sequence.; Zgc:64041 |
| 58 | AF207751 | 2.621 | 0.0379 | Danio rerio zinc finger protein Zic2 (zic2) mRNA, complete cds.; Zic family member 2 (odd-paired homolog, Drosophila) b |
| 59 | BG884411 | 2.565 | 0.0295 | fp33h08.x1 zebrafish gridded kidney Danio rerio cDNA clone IMAGE:4745318 3', mRNA sequence.; Transcription factor cmyb |
| 60 | AW115765 | 2.561 | 0.00751 | fd03b06.x1 Sugano Kawakami zebrafish DRA Danio rerio cDNA clone IMAGE:2600051 3', mRNA sequence.; Zgc:55283 |
| 61 | AW567292 | 2.55 | 0.033 | fk24c03.x1 zebrafish fin day1 regeneration Danio rerio cDNA 3', mRNA sequence.; Muscle segment homeobox C |
| 62 | BI476891 | 2.508 | 0.0223 | fq95g07.y3 zebrafish fin day3 regeneration Danio rerio cDNA clone 4926517 4926517 5' similar to TR:Q9W635 Q9W635 MATRIX METALLOPROTEINASE-2.;, mRNA sequence.; Matrix metalloproteinase 2 |
| 63 | AA495100 | 2.5 | 0.00362 | fa06f01.s1 Zebrafish ICRF-zfIs Danio rerio cDNA clone 5F21 3', mRNA sequence. |
| 64 | BG304232 | 2.463 | 0.00766 | f133c07.x1 Sugano Kawakami zebrafish DRA Danio rerio cDNA clone IMAGE:3815437 3', mRNA sequence.; Zgc:66107 |
| 65 | BI672091 | 2.425 | 0.0259 | ft34d03.x1 Gong zebrafish testis Danio rerio cDNA clone IMAGE:5152541 3', mRNA sequence. |
| 66 | AA16207 | 2.425 | 0.0261 | fb19f03.y1 Zebrafish WashU MPIMG EST Danio rerio cDNA clone IMAGE:3712349 5' similar to contains element PTR5 repetitive element ;, mRNA sequence.; Wu:fb19f03 |
| 67 | BM070746 | 2.407 | 0.0233 | fu98g11.y1 zebrafish adult brain Danio rerio cDNA clone IMAGE:5385404 5' similar to contains element MER36 repetitive element ;, mRNA sequence.; Transcribed locus |
| 68 | AI601770 | 2.401 | 0.00587 | fc11e07.x1 Zebrafish WashU MPIMG EST Danio rerio cDNA clone IMAGE:3721092 3', mRNA sequence.; Wu:fc11e07 |
| 69 | BG728637 | 2.374 | 0.0056 | fo97d10.x1 zebrafish gridded kidney Danio rerio cDNA clone IMAGE:4727875 3', mRNA sequence.; Wu:fj66h02 |

| | | | | |
|-----|----------|-------|----------|--|
| 70 | AF229448 | 2.371 | 0.0103 | Notch ligand; Danio rerio jagged1 (jag1) mRNA, complete cds.; Jagged 1a |
| 71 | BG305680 | 2.336 | 0.0395 | fm07h05.x1 Zebrafish adult retina cDNA Danio rerio cDNA clone IMAGE:4145888 3', mRNA sequence.; Zgc:55817 |
| 72 | BM071271 | 2.314 | 0.00649 | fv05d01.x1 zebrafish adult brain Danio rerio cDNA clone IMAGE:5385648 3', mRNA sequence.; Transcribed locus, weakly similar to NP_612453.1 potassium channel tetramerisation domain containing 12 [Homo sapiens] |
| 73 | BG891906 | 2.313 | 0.000325 | fp46h04.x1 zebrafish gridded kidney Danio rerio cDNA clone IMAGE:4759903 3', mRNA sequence.; Transcribed locus, weakly similar to NP_849259.2 expressed sequence A1173486 [Mus musculus] |
| 74 | BM026691 | 2.278 | 0.0478 | fq86e06.y3 Zebrafish neuronal Danio rerio cDNA clone IMAGE:4887250 5', mRNA sequence.; Transcribed locus |
| 75 | AF180890 | 2.265 | 0.0194 | Danio rerio fast skeletal muscle troponin C (tnnc) mRNA, complete cds.; Troponin C, fast skeletal |
| 76 | BM185357 | 2.244 | 0.0359 | fv46b09.x1 Sugano SJD adult male Danio rerio cDNA clone IMAGE:5411297 3', mRNA sequence. |
| 77 | AA495154 | 2.244 | 0.0366 | fa04a07.x1 Zebrafish ICRFzfls Danio rerio cDNA clone 1M4 3' similar to contains element L1 repetitive element ;, mRNA sequence. |
| 78 | BM182277 | 2.201 | 0.0196 | fv59f10.x1 Sugano SJD adult male Danio rerio cDNA clone IMAGE:5413002 3', mRNA sequence.; Matrix metalloproteinase 2 |
| 79 | AF359505 | 2.145 | 0.0147 | Danio rerio iroquois homeobox protein Ziro1 (ziro1) mRNA, complete cds.; Iroquois homeobox protein 1, a |
| 80 | A1793839 | 2.142 | 0.00831 | fc54h10.x1 Zebrafish WashU MPIMG EST Danio rerio cDNA clone IMAGE:3725251 3', mRNA sequence.; Transcription factor AP-2 alpha |
| 81 | A1877490 | 2.14 | 0.0184 | fc48a02.y1 Zebrafish WashU MPIMG EST Danio rerio cDNA clone IMAGE:3724586 5', mRNA sequence. |
| 82 | A1436876 | 2.104 | 0.0163 | fb34b02.y1 Zebrafish WashU MPIMG EST Danio rerio cDNA clone IMAGE:3713739 5', mRNA sequence.; Wu:fb34b02 |
| 83 | AW232279 | 2.096 | 0.0452 | fj17b02.x1 Zebrafish adult olfactory Danio rerio cDNA 3' similar to TR:O88656 O88656 P41-ARC.; mRNA sequence.; Actin related protein 2/3 complex, subunit 1B |
| 84 | B1710499 | 2.094 | 0.00257 | fq37e09.x1 zebrafish adult brain Danio rerio cDNA clone IMAGE:4833521 3' similar to SW:RETS3_FUGRU O42386 RETINOIC ACID-BINDING PROTEIN I, CELLULAR.; mRNA sequence.; Cellular retinoic acid binding protein 1 |
| 85 | AF282384 | 2.085 | 0.00613 | thin filament regulatory protein; contractile protein; sarcomere protein; Danio rerio cardiac troponin T (tnnt2) mRNA, complete cds.; Troponin T2, cardiac |
| 86 | BG727376 | 2.077 | 0.014 | fb81f01.x1 zebrafish gridded kidney Danio rerio cDNA clone IMAGE:4726417 3', mRNA sequence.; Wu:fa10d10 |
| 87 | U89380 | 2.071 | 0.0141 | Eph-like kinase 2; Zek2; Eph-like receptor tyrosine kinase; Danio rerio Eph-like kinase 2 (zek2) mRNA, partial cds. |
| 88 | AF210320 | 2.064 | 0.00865 | secreted protein; Danio rerio Sliit3 (sliit3) mRNA, complete cds.; Sliit (Drosophila) homolog 3 |
| 89 | AF277097 | 2.051 | 0.000699 | SRY-like; functional importance in chondrogenesis and gonadal tissues; Danio rerio HMG box transcription factor Sox9b (sox9b) mRNA, complete cds.; SRY-box containing gene 9b |
| 90 | U40931 | 2.051 | 0.00166 | Pax-family transcription factor; Danio rerio transcription factor Pax9a (Pax9) mRNA, complete cds.; Paired box gene 9 |
| 91 | BM155853 | 2.048 | 0.0114 | fw40f05.y1 Zebrafish SJD day 3 embryo Danio rerio cDNA clone IMAGE:5567360 5' similar to SW:CRG2_CYPGA P10044 GAMMA CRYSTALLIN M2.; mRNA sequence.; Zgc:86750 |
| 92 | BM070961 | 2.038 | 0.008 | fv02g07.x1 zebrafish adult brain Danio rerio cDNA clone IMAGE:5385421 3' similar to SW:CART_MOUSE Q08331 CALRETININ.; mRNA sequence.; Calbindin 2, (calretinin) |
| 93 | BM154194 | 2.035 | 0.0305 | fv85c06.x1 Zebrafish SJD adult male II Danio rerio cDNA clone IMAGE:5543818 3', mRNA sequence.; Transcribed locus, weakly similar to NP_075580.1 unconventional myosin Myr2 I heavy chain [Rattus norvegicus] |
| 94 | A1878476 | 2.026 | 0.0302 | fc59c11.x1 Zebrafish WashU MPIMG EST Danio rerio cDNA clone IMAGE:3725684 3', mRNA sequence.; Zgc:64055 |
| 95 | U00931 | 2.026 | 0.0443 | Brachydanio rerio DVR-1 mRNA, complete cds.; Decapentaplegic and Vg-related 1 |
| 96 | A1793901 | 2.023 | 0.0304 | fc55h01.x1 Zebrafish WashU MPIMG EST Danio rerio cDNA clone IMAGE:3725329 3', mRNA sequence. |
| 97 | B1879932 | 2.021 | 0.0417 | fm67e01.x1 Zebrafish adult retina cDNA Danio rerio cDNA clone IMAGE:420648 3' similar to TR:Q9V5D4 Q9V5D4 CG1513 PROTEIN.; mRNA sequence.; Transcribed locus, weakly similar to NP_060254.2 oxysterol binding protein-like 10 [Homo sapiens] |
| 98 | BG727284 | 2.02 | 0.0307 | fo79a11.x1 zebrafish gridded kidney Danio rerio cDNA clone IMAGE:4726173 3', mRNA sequence.; Wu:fj84d07 |
| 99 | BG883367 | 2.019 | 0.00643 | fp27a05.x1 zebrafish gridded kidney Danio rerio cDNA clone IMAGE:4744232 3', mRNA sequence.; Transcribed locus, moderately similar to NP_766501.1 trinucleotide repeat containing 9 [Mus musculus] |
| 100 | B1879661 | 2.001 | 0.00493 | fm63h08.x1 Zebrafish adult retina cDNA Danio rerio cDNA clone IMAGE:4200422 3' similar to contains element LTR7 repetitive element.; mRNA sequence.; Collagen type II, alpha-1 |