

Table S1. Primer sets used for RT-qPCR validation of RNA-seq data.

Target	Forward	Reverse
<i>tgif1</i>	AATACTCCGGGACTGGCTCT	CAGTTGCAAACCTGTAGTGTGG
<i>crlf1a</i>	ATGAGATATGGGTGGAGGCG	GATCTGTCGTCACCACGTCT
<i>hspd1</i>	GTCATTAAGGTCGGAGGAACAAG	GCGCAGTAAAGCACATCCTC
<i>C7</i>	GTGTGTAGGCCAGGAACCAG	GGGGCTCCAAGATTTTGAGGT
<i>ptges</i>	GGGCTTAACGGACTGGCTTC	GGGCTTAACGGACTGGCTTC
<i>mmp9</i>	GGTGGTCCCTTCAGACGATG	TTCCAGTAGCGCCCGTC
<i>gpia</i>	ACTCCTGCCTCATAAAGTTTTCCA	ACATCACACCCTGCACGAAG

Table S2. Top 20 positively and negatively regulated known zebrafish genes at 8 hours post lesion. Only genes with a false discovery rate ≤ 0.05 are considered differentially expressed. *Denotes projected HUGO Gene Nomenclature Committee (HGNC) symbol for zebrafish genes that have not yet been assigned an official name. 11 uncharacterized genes were removed from the top 20 positively regulated genes. 17 uncharacterized genes were removed from the top 20 negatively regulated genes.

Positively regulated

Symbol	Name	log ₂ FC
<i>soul5</i>	heme-binding protein soul5	7.75
<i>lepb</i>	leptin b	7.64
<i>crtac1a</i>	cartilage acidic protein 1a	7.55
<i>wdr76</i>	WD repeat domain 76	6.56
<i>hspb11</i>	heat shock protein, alpha-crystallin-related, b11	6.51
<i>blvra</i>	biliverdin reductase A	6.41
<i>fam213b</i>	family with sequence similarity 213, member B	6.41
<i>C7*</i>	complement component 7	6.22
<i>tspo</i>	translocator protein	6.03
<i>ccl34a.4</i>	chemokine (C-C motif) ligand 34a, duplicate 4	5.94
<i>nfil3</i>	nuclear factor, interleukin 3 regulated	5.70
<i>cry5</i>	cryptochrome 5	5.59
<i>nfil3-2</i>	nuclear factor, interleukin 3 regulated, member 2	5.47
<i>rorcb</i>	RAR-related orphan receptor C b	5.38
<i>per2</i>	period circadian clock 2	5.36
<i>nfil3-5</i>	nuclear factor, interleukin 3 regulated, member 5	5.24
<i>ASB5*</i>	ankyrin repeat and SOCS box containing 5	4.933
<i>cpa2</i>	carboxypeptidase A2	4.82
<i>slc27a6</i>	solute carrier family 27 (fatty acid transporter), member 6	4.81
<i>med11</i>	mediator complex subunit 11	4.56

Negatively regulated

Symbol	Name	log ₂ FC
<i>smu1b</i>	smu-1 suppressor of mec-8 and unc-52 homolog b	-4.15
<i>SUSD3*</i>	sushi domain containing 3	-3.86
<i>her4.1</i>	hairy-related 4, tandem duplicate 1	-3.83
<i>cnga3a</i>	cyclic nucleotide gated channel alpha 3a	-3.81
<i>mef2ca</i>	myocyte enhancer factor 2ca	-3.65
<i>U1</i>	U1 spliceosomal RNA	-3.52
<i>slc25a24</i>	solute carrier family 25 (mitochondrial carrier; phosphate carrier), member 24	-3.51
<i>myo16</i>	myosin XVI	-3.45
<i>ker1a</i>	keratocan	-3.36
<i>MEF2A*</i>	myocyte enhancer factor 2A	-3.34
<i>krt4</i>	keratin 4	-3.33

<i>bhlhe41</i>	basic helix-loop-helix family, member e41	-3.28
<i>per1a</i>	period circadian clock 1a	-3.23
<i>nr2e3</i>	nuclear receptor subfamily 2, group E, member 3	-3.18
<i>col17a1a</i>	collagen, type XVII, alpha 1a	-3.15
<i>pacs2</i>	phosphofurin acidic cluster sorting protein 2	-3.08
<i>dbpb</i>	D site albumin promoter binding protein b	-3.05
<i>cyp26a1</i>	cytochrome P450, family 26, subfamily A, polypeptide 1	-3.04
<i>ankrd33aa</i>	ankyrin repeat domain 33Aa	-2.99
<i>cnksr2a</i>	connector enhancer of kinase suppressor of Ras 2a	-2.99

Table S3. Top 20 positively and negatively regulated known zebrafish genes at 16 hours post lesion. Only genes with a false discovery rate ≤ 0.05 are considered differentially expressed. *Denotes projected HUGO Gene Nomenclature Committee (HGNC) symbol for zebrafish genes that have not yet been assigned an official name. 17 uncharacterized genes were removed from the top 20 positively regulated genes. 23 uncharacterized genes were removed from the top 20 negatively regulated genes.

Positively regulated

Symbol	Name	log ₂ FC
<i>lepb</i>	leptin b	10.02
<i>C7*</i>	complement component 7	7.36
<i>cpa2</i>	carboxypeptidase A2	6.49
<i>lin28a</i>	lin-28 homolog A	6.45
<i>ankrd1a</i>	ankyrin repeat domain 1a	5.55
<i>crlf1a</i>	cytokine receptor-like factor 1a	5.52
<i>ccl34a.4</i>	chemokine (C-C motif) ligand 34a, duplicate 4	5.15
<i>cpa4</i>	carboxypeptidase A4	4.89
<i>med11</i>	mediator complex subunit 11	4.86
<i>adam8a</i>	ADAM metallopeptidase domain 8a	4.55
<i>lygl1</i>	lysozyme g-like 1	4.54
<i>ASB5*</i>	ankyrin repeat and SOCS box containing 5	4.49
<i>nr1d4a</i>	nuclear receptor subfamily 1, group D, member 4a	4.46
<i>c6</i>	complement component 6	4.45
<i>HTRA2*</i>	HtrA serine peptidase 2	4.41
<i>clcf1</i>	cardiotrophin-like cytokine factor 1	4.41
<i>mvp</i>	major vault protein	4.12
<i>phlda2</i>	pleckstrin homology-like domain, family A, member 2	4.08
<i>mmp9</i>	matrix metallopeptidase 9	4.01
<i>crtac1a</i>	cartilage acidic protein 1a	4.01

Negatively regulated

Symbol	Name	log ₂ FC
<i>aplnra</i>	apelin receptor a	-6.23
<i>TNFRSF14*</i>	tumor necrosis factor receptor superfamily, member 14	-4.30
<i>fdx1b</i>	ferredoxin 1b	-4.01
<i>hes2.1</i>	hes family bHLH transcription factor 2, tandem duplicate 1	-3.85
<i>GPT*</i>	glutamic-pyruvate transaminase (alanine aminotransferase)	-3.07
<i>bik</i>	BCL2-interacting killer (apoptosis-inducing)	-3.06
<i>hhatla</i>	hedgehog acyltransferase-like, a	-2.58
<i>myo3b</i>	myosin IIIB	-2.40
<i>foxq2</i>	forkhead box Q2	-2.34
<i>SUSD3*</i>	sushi domain containing 3	-2.33
<i>opn1sw2</i>	opsin 1 (cone pigments), short-wave-sensitive 2	-2.28
<i>opn1mw2</i>	opsin 1 (cone pigments), medium-wave-sensitive, 2	-2.23

<i>Irrfip1a</i>	leucine rich repeat (in FLII) interacting protein 1a	-2.22
<i>esrrgb</i>	estrogen-related receptor gamma b	-2.17
<i>gnat2</i>	guanine nucleotide binding protein (G protein), alpha transducing activity polypeptide 2	-2.16
<i>FNDC4*</i>	fibronectin type III domain containing 4	-2.11
<i>coro2bb</i>	coronin, actin binding protein, 2Bb	-2.08
<i>sema7a</i>	semaphorin 7A	-2.05
<i>cplx4b</i>	complexin 4b	-2.03
<i>rgs9a</i>	regulator of G-protein signaling 9a	-2.01

Table S4. Published datasets used for analysis of isolated Müller glia and photoreceptors.

Sample Description	Platform type; Name; Accession	Dataset URL	GEO Accession	Supplementary Reference
Unlesioned FACS Adult Müller glia; zebrafish	Microarray; [Zebrafish] Affymetrix Zebrafish Genome Array; GPL1319	http://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE14495	GSE14495	26
Unlesioned FACS Adult Müller glia; zebrafish	Microarray; Agilent-015064 D. rerio (Zebrafish) Oligo Microarray 4x44K G2519F; GPL7302	http://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE36191	GSE36191	27
1 day post PBS injection FACS Adult Müller glia; mouse	Microarray; [Mouse430_2] Affymetrix Mouse Genome 430 2.0 Array; GPL1261	http://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE27195	GSE27195	28
P0 and P21 FACS Müller glia; mouse	Microarray; [MoGene-1_0-st] Affymetrix Mouse Gene 1.0 ST Array [transcript (gene) version]; GPL6246	http://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE45835	GSE45835	29
Hand-picked 8wk and P13 Wild-type Müller glia; mouse	Microarray; [Mouse430_2] Affymetrix Mouse Genome 430 2.0 Array; GPL1261	http://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE35386	GSE35386	19
8-11wk FACS Rod and FACS Cone photoreceptors; mouse	RNA-seq; Illumina HiSeq2500; N/A	http://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE72550	GSE72550	30
P28 FACS Rod and S-cone-like (<i>Nrl</i> ^{-/-}) photoreceptors; mouse	RNA-seq; Illumina Genome Analyzer IIx; N/A	http://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE74660	GSE74660	31

Table S5. Cell-type specific transcripts used for analysis of contaminating transcripts.

Gene Symbol (zebrafish, mouse)	Description	Specificity
<i>gfap, Gfap</i>	<i>glial fibrillary acidic protein</i>	Müller glia
<i>rlbp1a, Rlbp1</i>	<i>retinaldehyde binding protein 1(a)</i>	Müller glia
<i>rho, Rho</i>	<i>rhodopsin</i>	Rod photoreceptor
<i>gnat1, Gnat1</i>	<i>G-protein subunit alpha transducin 1</i>	Rod photoreceptor
<i>gnat2, Gnat2</i>	<i>G-protein subunit alpha transducin 2</i>	Cone photoreceptor