Supplementary material

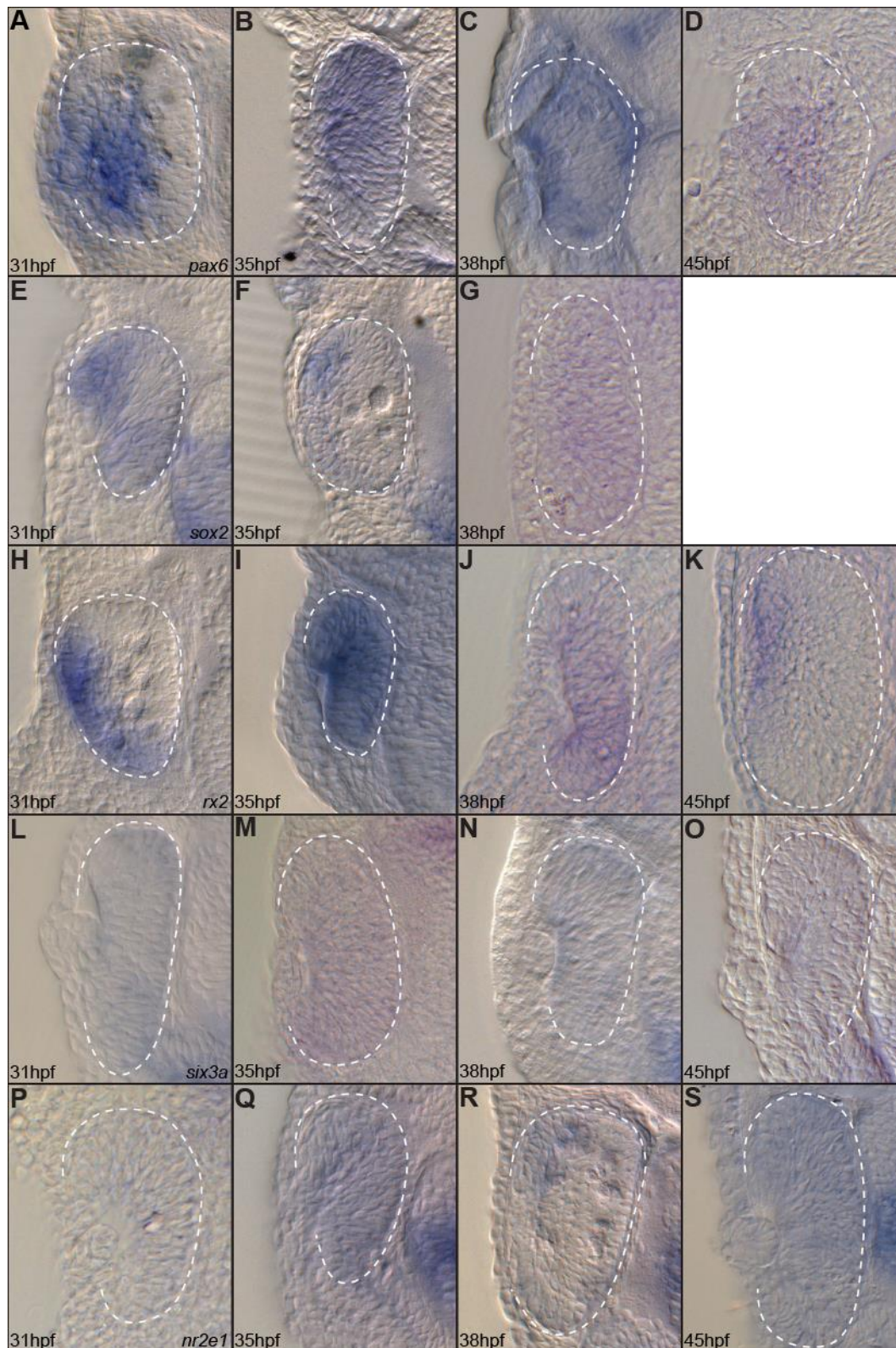**Fig. S1. Expression of *pax6*, *sox2*, *rx2*, *six3a* and *nr2e1* in the retina of *Phreatichthys andruzzii* at stages of eye differentiation**

Pax6 was expressed extensively throughout the retina from 31 hpf to 38 hpf (A-C) and diminished slightly at 45 hpf. *Sox2* expression peripheral to the lens at 31 hpf (E), only dorsally at 35 hpf (F) and overall weak at 38 hpf (G). *Rx2* was strongest at 31 hpf and 35 hpf (H,I) and became more defined to an area close to the lens until 45 hpf (J,K). Expression of *six3a* is uniformly weak at all time-points (L-O), but present as well as *nr2e1* (P-S), except 38 hpf, when staining was observed dorsally in the retina (R). Retinae are encircled by dashed lines.

Table S1. PCR primer sequences

Degenerate and conventional primers used to amplify a ca. 500bp fragment of the respective

cDNA.

Gene	Forward Primer 5' – 3'	Reverse Primer 5' – 3'
atoh7	CCAGAGACCCGGAGAAGTTTGAGAGT	CCAGTCTTTCTGAGGATCCACGTGTC
barhl2	CCAGCGGGTCGAGTTTTGGRATAGACACTA	GCCAGCGGTTTACTGTCGCCCAARATGTC
crx	ATGATGTCCTACATAAAGCARCCCCATTA	GGCTGRCCRTAGCTCATGGGATA
isl1	ATCAGGTTRTACGGGATCAAATGT	GTTGGGITGCTGCTGCTGGAGITGCTTCAT
nr2e1	GACAAGACICACAGAAACCAGT	GCCCACTTGATGCTCATGAA
opsin (long-wave sensitive)	GGAAACGTCAAGTTTGATGCCAAAT	GGGTTGTAGATGGTGGCGCTCTTGGCAAAGTA
pax6	CGCAACCTGGCTAGYGAAAAGCAACA	CTGCTGCTGATGGGTATGTGACT
pou4f2	CACAGCCCCTTCAAGCCGGACGC	GCCACGCTTGCAGGATGGGCTTCA
rhodopsin	GTCTGCAAGCCCATSAGCAACTT	CGGAACTGCTTGTTCATGCAGATGTAGAT
rx2	ACCACCTTCACCACCTATCAGCT	GACTGAATGTGCTCYTTGGCCTTCAT
rx3	CAGGAGAAGCTGGARGTGAGCTCCAT	CTGAATGTGTTCCTTGGCYTTCATCCT
shh	GGCTACGGCAGRAGAAGACAYCCGAAGAA	GCTTTGGACTCRTARTAGACCCAGTC
six3a	GAGACGCTGGAGGAGACCGGGGACAT	GGGTTIGGGTAIGGGTCCTGIAGGTA
sox2	ATGTATAACATGATGGAAACYGARCTGAAGCC	CCTGCATCATGCCGTAGCCICCGTT
vsx1	CCAAAGGGTTCGCAATCACAGATCT	AGCTCTGTCTTCATTGCCAGCAT
fgf8	ACCATTCAGTCCCCGCCTAA	TCAAAGGGTCTGTGCTCTGC
nkx2.1	TTTTGAGCCCGATCGAGGAG	GCTGGCCAAATGTTCCCTCT
pax2.1	TGACGTGGTCAGGCAAAGAA	TCTTTTCACCGTTGGAGCGA