Supplemental data

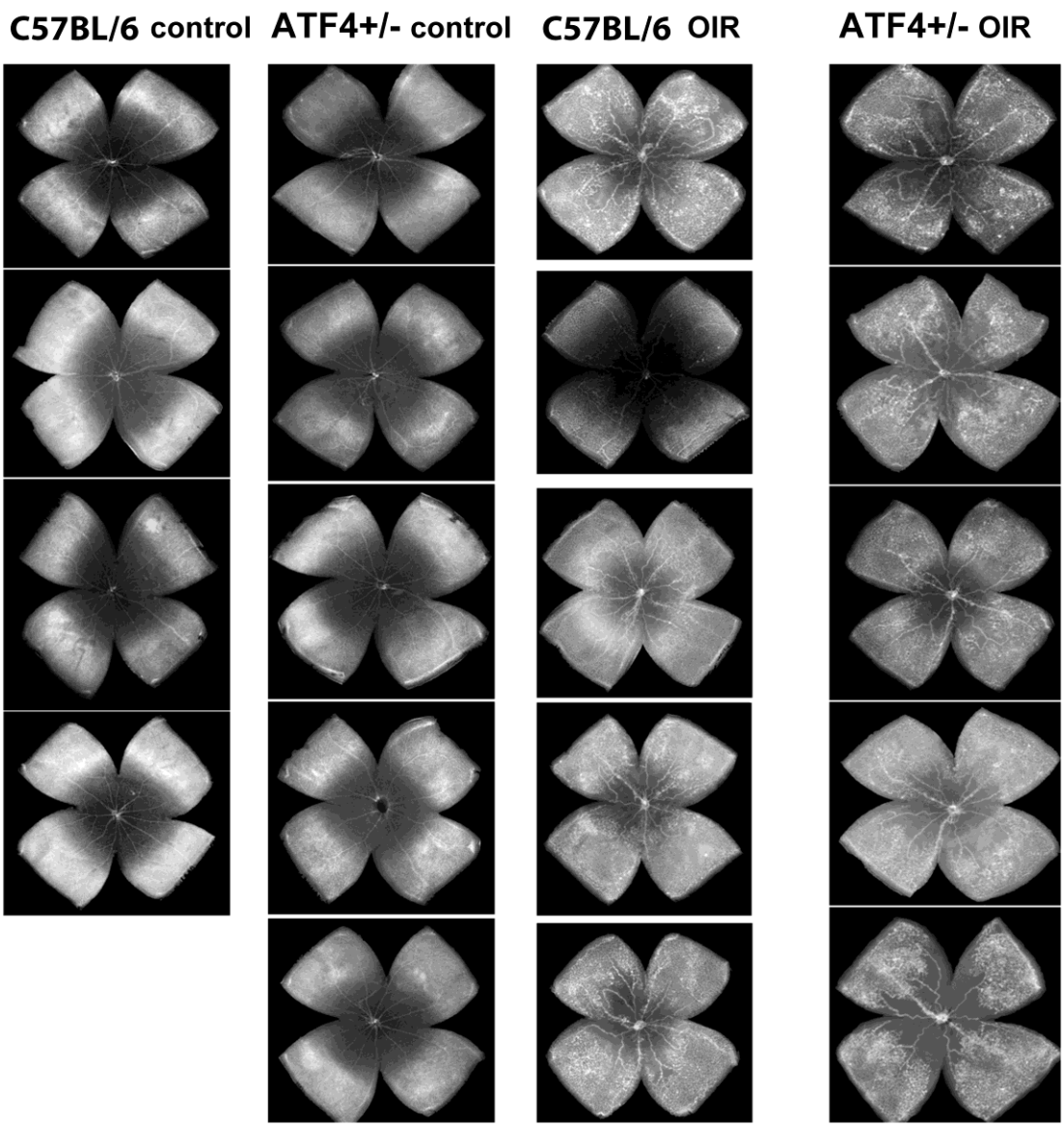
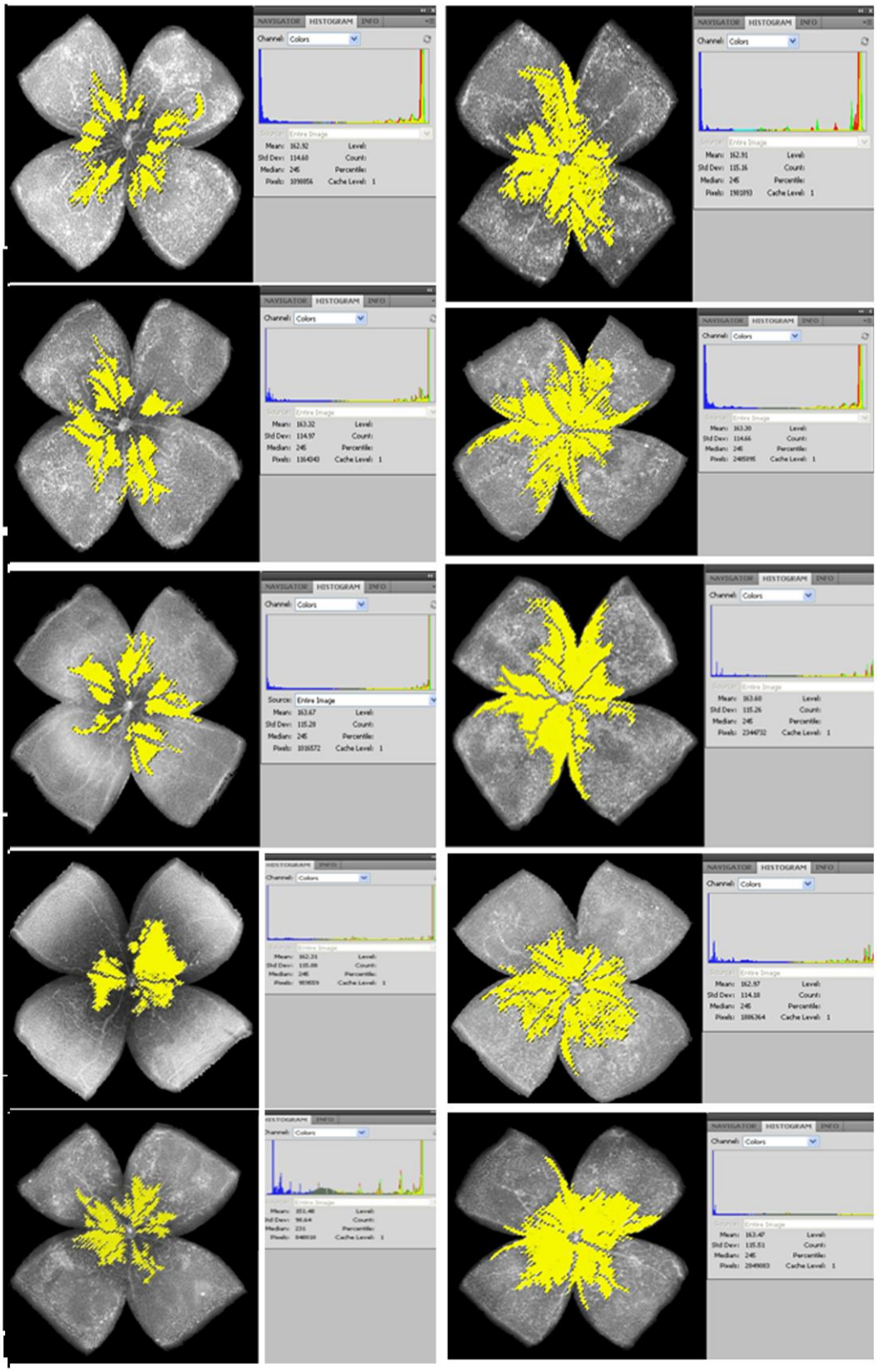


Fig S1. Images of flat-mount retinas in C57BL/6 and ATF4+/- controls and C57BL/6 and ATF4+/- OIR mice.



C57BL/6 OIR

ATF4+/- OIR

Fig S2. Images of flat-mount retinas in P17 C57BL/6 and ATF4+/- control and OIR retinas were used to calculated formation of new blood vessels and avascular area using Adobe Photoshop CS3. Total surface area and area without vasculature (empty space) were also measured. Vasculature was calculated as a difference between total area and empty space. Ten sections from each group were examined. The average number of neovascularized area was compared with the control group using the Student's *t* test.

Day (P)	Gene	C57BL6	S.E.M.	ATF4+/-	S.E.M.	Fold change	Significance
12	Akt1	0.9843	0.01876	2.279	0.225	2.315351011	***
	Atf6	0.8924	0.06747	2.707	0.3597	3.033393097	***
	Bax	1.25	0.1392	3.001	0.3253	2.4008	**
	Ddit3	1.058	0.09318	0.9187	0.1421	0.868336484	NS
	eIF2a	1.239	0.1818	1.571	0.3374	1.267958031	NS
	Flt1	0.8463	0.09533	2.822	0.265	3.334514947	**
	Hif1a	0.9784	0.03267	4.576	0.1457	4.677023712	****
	Hspa5	0.6344	0.1828	1.704	0.2713	2.686002522	**
	Mapk3	0.9375	0.09289	3.4	0.1183	3.626666667	****
	Nfkb1	0.8511	0.09601	0.6592	0.1069	0.774527083	NS
	Pik3r1	0.9137	0.0565	4.07	0.8735	4.45441611	***
	Tgfb1	0.9486	0.1428	1.968	0.8937	2.074636306	NS
	Vegfa	0.9018	0.06015	3.395	0.9512	3.764692837	**
	Xbp1	0.8641	0.07016	0.7178	0.06394	0.830690892	NS
13	Akt1	0.6284	0.1864	1.058	0.2086	1.683640993	NS
	Atf6	0.7157	0.1423	2.331	0.295	3.256951237	***
	Bax	1.25	0.1392	1.533	0.2745	1.2264	NS
	Ddit3	1.196	0.1174	1.077	0.2972	0.900501672	NS
	eIF2a	0.9566	0.0675	1.309	0.2898	1.368388041	NS
	Flt1	0.8143	0.1333	2.952	0.486	3.625199558	***
	Hif1a	0.6654	0.1673	2.382	0.3585	3.579801623	***
	Hspa5	0.9575	0.04054	1.402	0.2186	1.464229765	NS
	Mapk3	0.6972	0.1514	1.105	0.1199	1.584911073	NS
	Nfkb1	1.098	0.1134	0.9627	0.2135	0.876775956	NS
	Pik3r1	0.7878	0.1085	2.421	0.5128	3.073115004	*
	Tgfb1	0.8972	0.115	0.7128	0.1857	0.79447169	NS
	Vegfa	0.7747	0.122	2.179	0.5634	2.812701691	NS
	Xbp1	0.7752	0.1237	0.5536	0.01691	0.714138287	NS
15	Akt1	1.011	0.006561	1.4	0.2053	1.384767557	NS
	Atf6	1.023	0.03977	1.202	0.1182	1.174975562	NS
	Bax	1.07	0.08329	1.328	0.3867	1.241121495	NS
	Ddit3	1.124	0.1998	0.9208	0.1899	0.819217082	NS
	eIF2a	1.239	0.1818	2.105	0.6221	1.698950767	NS
	Flt1	1.162	0.1173	2.294	0.2124	1.974182444	*
	Hif1a	1.035	0.08972	1.143	0.2522	1.104347826	NS
	Hspa5	0.9441	0.0787	0.4774	0.09389	0.505666773	NS
	Mapk3	1.018	0.09145	1.555	0.1814	1.527504912	*
	Nfkb1	1.026	0.02459	1.364	0.2038	1.329434698	NS
	Pik3r1	1.059	0.03781	1.515	0.265	1.430594901	NS
	Tgfb1	1.532	0.3527	3.049	0.4896	1.990208877	*
	Vegfa	0.9692	0.04117	0.9536	0.1382	0.983904251	NS
	Xbp1	0.8986	0.05515	1.509	0.3092	1.679278878	NS

Table S1. Relative gene expression in C57BL/6 and ATF4+/- naïve mice during retinal development at P12, P13 and P15.

Day (P)	Gene	C57BL6	S.E.M.	ATF4+/-	S.E.M.	Fold change	Significance
12	Akt1	1.905	0.07976	1.803	0.4411	0.946456693	NS
	Atf6	2.648	0.7651	1.363	0.07815	0.514728097	**
	Bax	0.8992	0.233	0.8483	0.07662	0.943394128	NS
	Ddit3	1.107	0.09392	1.156	0.1452	1.044263776	NS
	eIF2a	1.445	0.1773	1.247	0.1741	0.862975779	NS
	Flt1	4.294	0.233	1.935	0.07662	0.450628784	*
	Hif1a	3.749	1.285	1.628	0.205	0.434249133	*
	Hspa5	2.181	0.1144	1.132	0.09569	0.519027969	**
	Mapk3	2.158	0.5354	1.333	0.1865	0.617701576	NS
	Nfkb1	0.9324	0.03061	1.147	0.1169	1.23015873	NS
	Pik3r1	3.114	1.195	1.367	0.1269	0.438985228	NS
	Tgfb1	1.22	0.1379	1.025	0.2782	0.840163934	NS
	Vegfa	3.023	0.9608	1.165	0.1575	0.385378763	*
	Xbp1	0.8306	0.07399	0.7972	0.2297	0.959788105	NS
13	Akt1	0.8132	0.1155	1.435	0.3335	1.764633546	NS
	Atf6	0.9289	0.1004	0.9898	0.1834	1.065561417	NS
	Bax	0.8016	0.0305	1.049	0.2377	1.308632735	NS
	Ddit3	1.137	0.08254	1.283	0.2646	1.128408091	NS
	eIF2a	0.7346	0.04707	1.887	0.8174	2.568744895	NS
	Flt1	0.7422	0.103	1.45	0.2491	1.953651307	NS
	Hif1a	0.912	0.06928	1.191	0.3787	1.305921053	NS
	Hspa5	0.8153	0.0282	1.36	0.374	1.668097633	NS
	Mapk3	0.779	0.02878	1.197	0.3421	1.536585366	NS
	Nfkb1	0.4665	0.04878	0.9799	0.1855	2.100535906	NS
	Pik3r1	0.7444	0.08691	1.769	0.7953	2.376410532	NS
	Tgfb1	0.5493	0.1455	1.402	0.2799	2.552339341	NS
	Vegfa	1.677	0.1316	0.7408	0.1251	0.441741205	NS
	Xbp1	0.7141	0.02181	0.574	0.1382	0.80380899	NS
15	Akt1	0.7334	0.1313	1.067	0.3449	1.454867739	NS
	Atf6	0.8391	0.06379	0.8279	0.06592	0.986652366	NS
	Bax	0.8353	0.09996	1.032	0.1557	1.235484257	NS
	Ddit3	0.9266	0.1453	0.8229	0.07549	0.888085474	NS
	eIF2a	0.9722	0.1952	0.8483	0.1633	0.872557087	NS
	Flt1	1.03	0.2179	0.8483	0.1633	0.823592233	NS
	Hif1a	0.7129	0.1155	0.8276	0.1155	1.160892131	NS
	Hspa5	0.6611	0.1207	0.8521	0.04248	1.288912419	NS
	Mapk3	0.9155	0.06062	0.8815	0.1257	0.962861824	NS
	Nfkb1	0.89	0.09069	0.9519	0.2019	1.069550562	NS
	Pik3r1	0.9107	0.09415	0.7769	0.1295	0.853080048	NS
	Tgfb1	2.085	0.2257	0.8321	0.1474	0.399088729	**
	Vegfa	2.195	0.272	1.483	0.3702	0.675626424	NS
	Xbp1	0.5949	0.1325	0.9946	0.1995	1.671877626	NS

Table S2. Relative gene expression in C57BL/6 OIR and ATF4+/- OIR mice at P12, P13 and P15. Averaged RQs are shown to evaluate relative gene expression. RQs of naïve C57BL/6 (normoxia) were used as a reference at each time point. Relative gene expression was calculated as ratio of $RQ_{hypoxia}$ to $RQ_{normaxia}$ for each group.