International Journal of
Molecular Sciences

MDPI

Supplementary Table S1. DEGs of the p38 MAPK SP in the retina of Wistar and OXYS rats depending on age of the rats.

Gene symbol	Gene name	log2	p value	p_{adj}
Wistar 20 d. - Wistar 3 mo.				
Camk2b	*calcium/calmodulin-dependent protein kinase II beta*	0.334	1.20×10^{-05}	0.001
Cdon	*cell adhesion associated, oncogene regulated*	0.620	4.81×10^{-08}	1.12×10^{-06}
Map3k10	*mitogen activated protein kinase kinase kinase 10*	0.577	1.07×10^{-08}	2.96×10^{-07}
Map3k4	*mitogen activated protein kinase kinase kinase 4*	0,218	0.004	0.017
Spag9	*sperm associated antigen 9*	0.267	8.91×10^{-06}	0.0001
Taok1	*TAO kinase 1*	0.300	0.001	0.002
Taok3	*TAO kinase 3*	0.631	4.95×10^{-06}	6.49×10^{-05}
Cdc42	*cell division cycle 42*	-0.454	0.0001	0.001
Gadd45b	*growth arrest and DNA-damage-inducible, beta*	-0.600	2.96×10^{-05}	0.0003
Irf1	*interferon regulatory factor 1*	-1.281	5.56×10^{-09}	1.66×10^{-07}
Map3k1	*mitogen-activated protein kinase kinase kinase 1*	-0.609	2.40×10^{-08}	6.03×10^{-07}
Map3k11	*mitogen-activated protein kinase kinase kinase 11*	-1.087	0.001	0.004
Map3k5	*mitogen-activated protein kinase kinase kinase 5*	-0.397	0.005	0.020
Map3k8	*mitogen-activated protein kinase kinase kinase 8*	-0.990	0.003	0.012
Mapk13	*mitogen activated protein kinase 13*	-1.308	8.56×10^{-11}	3.96×10^{-09}
Tab1	*TGF-beta activated kinase 1/MAP3K7 binding protein 1*	-0.226	0.004	0.017
Txn1	*thioredoxin 1*	-1.613	1.37×10^{-15}	1.58×10^{-13}
Wistar 3 mo. - Wistar 18 mo.				
Cdon	*cell adhesion associated, oncogene regulated*	0.305	0.016	0.278
Tab1	*TGF-beta activated kinase 1/MAP3K7 binding protein 1*	0.201	0.023	0.335
Camk2b	*calcium/calmodulin-dependent protein kinase II beta*	-0.208	0.008	0.193
Gadd45b	*growth arrest and DNA-damage-inducible, beta*	-0.386	0.009	0.211
Map3k6	*mitogen-activated protein kinase kinase kinase 6*	-0.631	0.001	0.036
Mapk13	*mitogen activated protein kinase 13*	-0.596	0.003	0.117
Mapk14	*mitogen activated protein kinase 14*	-0.192	0.008	0.192
Mknk2	*MAP kinase-interacting serine/threonine kinase 2*	-0.384	0.037	0.418
OXYS 20 d - OXYS 3 mo.				
Camk2b	*calcium/calmodulin-dependent protein kinase II beta*	0.678	4.03×10^{-06}	4.42×10^{-05}
Ccm2	*CCM2 scaffold protein*	0.425	0.001	0.004
Cdon	*cell adhesion associated, oncogene regulated*	0.584	4.65×10^{-07}	6.51×10^{-06}
Dusp16	*dual specificity phosphatase 16*	0.234	0.032	0.089
Gadd45g	*growth arrest and DNA-damage-inducible, gamma*	0.517	0.004	0.015
Map2k6	*mitogen-activated protein kinase kinase 6*	0.300	0.034	0.093
Map3k10	*mitogen activated protein kinase kinase kinase 10*	0.510	3.76×10^{-07}	5.37×10^{-06}
Map3k3	*mitogen activated protein kinase kinase kinase 3*	0.296	0.001	0.002
Map3k4	*mitogen activated protein kinase kinase kinase 4*	0.330	1.47×10^{-05}	0.001
Spag9	*sperm associated antigen 9*	0.284	2.51×10^{-06}	2.90×10^{-05}
Taok3	*TAO kinase 3*	0.386	0.005	0.020
Adm	*adrenomedullin*	0.417	1.98×10^{-08}	3.84×10^{-07}
Bnip2	*BCL2 interacting protein 2*	-0.166	0.006	0.022
Calm2	*calmodulin 2*	-0.207	0.001	0.004
Cdc42	*cell division cycle 42*	-0.640	7.13×10^{-08}	1.21×10^{-06}
Gadd45b	*growth arrest and DNA-damage-inducible, beta*	-0.666	3.72×10^{-06}	4.11×10^{-05}
Map3k1	*mitogen activated protein kinase kinase kinase 1*	-0.731	5.08×10^{-11}	1.69×10^{-09}

Map3k5	*mitogen activated protein kinase kinase kinase 5*	-0.322	0.029	0.082
Mapk12	*mitogen activated protein kinase 12*	-0.350	0.008	0.028
Mapk13	*mitogen activated protein kinase 13*	-0.840	2.59×10^{-05}	0.001
Mapkapk2	*mitogen-activated protein kinase-activated protein kinase 2*	-0.393	0.018	0.055
Rac1	*Rac family small GTPase 1*	-0.619	0.037	0.099
Traf2	*Tnf receptor-associated factor 2*	-0.223	0.045	0.116
Txn1	*thioredoxin 1*	-0.867	0.008	0.029
OXYS 3 mo. - OXYS 18 mo.				
Map3k5	*mitogen activated protein kinase kinase kinase 5*	-0.450	0.003	0.176
Map3k6	*mitogen activated protein kinase kinase kinase 6*	-0.422	0.027	0.420
Mapk14	*mitogen activated protein kinase 14*	-0.167	0.020	0.376
Dusp1	*dual specificity phosphatase 1*	0.430	0.023	0.394
Map3k3	*mitogen activated protein kinase kinase kinase 3*	0.203	0.025	0.414
Ppm1d	*protein phosphatase, Mg^{2+}/Mn^{2+}-dependent, 1D*	0.202	0.023	0.401
Taok3	*TAO kinase 3*	0.339	0.016	0.344

Supplementary Table S2. DEGs of the p38 MAPK SP in the retina of 20-day-old and 3- and 18-month-old OXYS rats compared to age-matched Wistar rats.

Gene symbol	Gene name	Age	Wistar	OXYS	log2	p value	p_{adj}
Ccm2	*CCM2 scaffold protein*	20 d.	388.6	461.8	0.243	0.037	0.208
Dusp1	*dual specificity phosphatase 1*	20 d.	396.2	517.2	0.360	0.048	0.241
Dusp10	*dual specificity phosphatase 10*	20 d.	134.8	165.0	0.286	0.008	0.079
Dusp16	*dual specificity phosphatase 16*	20 d.	275.0	359.0	0.377	0.001	0.003
Gadd45g	*growth arrest and DNA-damage-inducible. gamma*	20 d.	256.5	353.3	0.436	0.010	0.090
Mapk12	*mitogen-activated protein kinase 12*	20 d.	476.4	607.0	0.3382	0.008	0.078
Mapk13	*mitogen-activated protein kinase 13*	20 d.	80.6	128.5	0.617	0.002	0.026
Mapk14	*mitogen-activated protein kinase 14*	20 d.	955.3	1111.8	0.217	0.001	0.010
Tab1	*TGF-beta activated kinase 1/MAP3K7 binding protein 1*	20 d.	440.4	495.5	0.169	0.014	0.113
Traf2	*Tnf receptor-associated factor 2*	20 d.	238.9	277.2	0.211	0.039	0.212
Dlk1	*delta like non-canonical Notch ligand 1*	20 d.	184.9	51.49	-1.098	0.003	0.037
Map3k1	*mitogen-activated protein kinase kinase kinase 1*	20 d.	364.6	312.4	-0.218	0.039	0.212
Map3k5	*mitogen-activated protein kinase kinase kinase 5*	20 d.	209.0	151.4	-0.449	0.001	0.015
Taok1	*TAO kinase 1*	20 d.	2946.4	2453.2	-0.261	0.001	0.017
Mapk12	*mitogen-activated protein kinase 12*	3 mo.	598.8	779.6	0.368	0.006	0.114
Ppm1d	*protein phosphatase Mg^{2+}/Mn^{2+}-dependent 1D*	3 mo.	526.5	617.9	0.227	0.011	0.157
Taok3	*TAO kinase 3*	3 mo.	1000.7	1230.4	0.287	0.041	0.327
Irf1	*interferon regulatory factor 1*	3 mo.	482.7	239.1	-0.914	4.58×10^{-5}	0.003
Map3k5	*mitogen-activated protein kinase kinase kinase 5*	3 mo.	278.5	190.7	-0.524	0.001	0.024
Txn1	*thioredoxin 1*	3 mo.	2948.7	1191.8	-0.980	0.003	0.067
Dusp1	*dual specificity phosphatase 1*	18 mo.	553.2	402.9	-0.426	0.024	0.293
Irf1	*interferon regulatory factor 1*	18 mo.	440.8	258.3	-0.100	0.002	0.068
Map3k6	*mitogen-activated protein kinase kinase kinase 6*	18 mo.	162.0	122.6	-0.422	0.034	0.341
Mapkapk3	*mitogen-activated protein kinase-activated*	18 mo.	294.0	198.6	-0.214	0.044	0.384

	protein kinase 3						
Mknk2	*MAP kinase-interacting serine/threonine kinase 2*	18 mo.	1295.3	866.2	-0.131	0.003	0.095
Txn1	*thioredoxin 1*	18 mo.	1592.9	1191.8	-0.307	0.016	0.235