

Supplementary

**Table S1** The 38 differently expressed lncRNAs in OGD/R cells (*vs.* control cells) and in TAK-242+OGD/R cells (*vs.* OGD/R)

geneID	RBMEC_OGD-RPKM	RBMEC_NC-RPKM	log2 Ratio (RBMEC_NC/RBMEC_OGD-R)	Up-Down-Regulation(RBMEC_NC/RBMEC_OGD)	P-value	FDR	RBMEC_OGD-RPKM	RBMEC_OGD_inTLR4-RPKM	log2 Ratio (RBMEC_OGD_inTLR4/RBMEC_OGD)	Up-Down-Regulation (RBMEC_OGD_inTLR4/RBMEC_OGD-R)	P-value	FDR
AABR07006957.1	0.001	459.8774408	18.8108899	Up	1.69E-08	2.89E-07	0.001	615.2208002	19.23074476	Up	2.62E-11	5.50E-10
AABR07008256.1	0.001	367.5983121	18.48777062	Up	3.77E-05	0.000378314	0.001	575.0838634	19.13341283	Up	8.37E-08	1.14E-06
AABR07000411.1	0.001	117.1615011	16.83813906	Up	1.58E-06	1.99E-05	0.001	90.07921307	16.4589066	Up	3.20E-05	0.000284373
AABR07068285.1	208.652833	2303.675949	3.464761377	Up	2.16E-21	1.34E-19	208.652833	2981.091598	3.836664291	Up	5.97E-30	5.17E-28
AABR07062344.2	137.8422071	1091.007342	2.984571199	Up	4.17E-09	7.70E-08	137.8422071	904.4637679	2.714045004	Up	2.89E-07	3.40E-06
AABR07025385.1	217.4753085	951.8986821	2.129956413	Up	8.26E-13	2.01E-11	217.4753085	1114.452207	2.357411231	Up	8.61E-17	2.98E-15
Rn60_1_0430.2	404.8714128	1509.373909	1.898414555	Up	1.30E-06	1.67E-05	404.8714128	1838.909526	2.183314815	Up	3.37E-09	5.56E-08
Rn60_1_1359.1	339.2832302	810.8070592	1.256868526	Up	4.21E-05	0.000416838	339.2832302	1353.994805	1.996660175	Up	8.44E-14	2.34E-12
Rn60_20_0032.5	99.51823224	456.6242885	2.197974837	Up	1.68E-06	2.09E-05	99.51823224	388.3756099	1.964419838	Up	3.42E-05	0.000299687
Rn60_X_1141.3	289.6148181	880.3655038	1.603967196	Up	4.33E-07	6.17E-06	289.6148181	1103.419223	1.929773695	Up	8.09E-11	1.56E-09
AABR07035412.2	332.7975293	776.5095771	1.222358995	Up	6.77E-08	1.08E-06	332.7975293	1004.588978	1.593888724	Up	3.65E-14	1.05E-12
AABR07005569.1	642.3620236	1691.39452	1.396754701	Up	8.23E-06	8.92E-05	642.3620236	1884.969286	1.553082508	Up	2.61E-07	3.12E-06
AABR07049961.1	716.940132	2358.560245	1.717981896	Up	1.39E-19	6.76E-18	716.940132	1961.303735	1.451888417	Up	1.33E-13	3.17E-12
AABR07052502.1	4921.40516	15971.43789	1.698352005	Up	2.79E-41	2.72E-39	4921.40516	13172.97404	1.420438899	Up	1.47E-27	9.26E-26
AABR07015522.1	9422.424737	23333.89523	1.308256892	Up	4.62E-94	1.05E-91	9422.424737	24193.61994	1.360456375	Up	1.16E-105	2.68E-103
AABR07006889.1	508.058485	1049.017125	1.045971743	Up	5.78E-06	6.36E-05	508.058485	1278.504436	1.331390679	Up	9.04E-10	1.53E-08
AC125248.1	209.0756827	575.5872027	1.461009243	Up	1.58E-10	3.38E-09	209.0756827	492.3237707	1.235582125	Up	1.37E-07	1.72E-06
AC141169.2	188.0410882	464.3530707	1.304174241	Up	1.35E-07	2.05E-06	188.0410882	439.475481	1.224734743	Up	7.77E-07	8.83E-06
AABR07001555.1	3288.455587	7322.398551	1.154906115	Up	5.50E-08	9.16E-07	3288.455587	7301.680888	1.150818433	Up	4.37E-08	6.18E-07
Rn60_20_0056.5	2637.798599	5471.627017	1.052635474	Up	1.24E-07	1.93E-06	2637.798599	5722.855241	1.117400698	Up	9.40E-09	1.45E-07
AC130862.4	700.7585712	100.4788824	-2.802025163	Down	7.87E-05	0.000726505	700.7585712	46.35170375	-3.918223211	Down	2.27E-06	2.50E-05
LOC102549726	3477.195238	862.4098404	-2.011478529	Down	1.46E-17	5.53E-16	3477.195238	430.9895261	-3.012199359	Down	7.64E-29	5.88E-27
AABR07025303.1	219.7508349	46.43456073	-2.242597755	Down	0.00015605	0.001332279	219.7508349	36.7210807	-2.581188224	Down	2.56E-05	0.000233182
AABR07069473.1	532.2640739	67.83924541	-2.971950165	Down	1.53E-05	0.000157996	532.2640739	93.88434263	-2.503185712	Down	5.73E-05	0.000484375
AABR07051249.1	363.6442977	127.4568938	-1.512518546	Down	7.47E-05	0.00069878	363.6442977	69.48721472	-2.387708495	Down	3.06E-08	4.51E-07
AABR07002969.1	3680.050728	676.4965402	-2.443571192	Down	5.10E-16	1.51E-14	3680.050728	773.9415575	-2.24942912	Down	4.05E-15	1.28E-13
AABR07027407.1	23106.87538	6520.255492	-1.825321783	Down	2.26E-56	3.85E-54	23106.87538	5036.392412	-2.197859584	Down	6.46E-75	1.12E-72
AABR07021465.2	197307.3352	65019.18376	-1.601507242	Down	0	0	197307.3352	47101.47549	-2.066600432	Down	0	0
AABR07060318.1	654.4913817	58.39233295	-3.486523338	Down	9.70E-14	2.55E-12	654.4913817	177.0135554	-1.886514352	Down	1.16E-07	1.52E-06
AABR07057683.1	7080.1043	2175.400639	-1.70248949	Down	1.64E-17	5.91E-16	7080.1043	1953.537492	-1.857681669	Down	2.49E-20	1.08E-18
AABR07026032.1	2178.802597	312.4095214	-2.802025163	Down	1.59E-35	1.36E-33	2178.802597	650.3740863	-1.744193811	Down	1.16E-20	5.73E-19
AABR07059239.1	2073.360918	672.1354363	-1.625147401	Down	2.35E-06	2.76E-05	2073.360918	739.3771773	-1.487588857	Down	6.68E-06	6.71E-05
AABR07021998.1	10720.88371	4474.417859	-1.260651931	Down	1.18E-17	4.73E-16	10720.88371	4254.799693	-1.333260711	Down	8.82E-20	3.60E-18
AC141521.2	2961.708691	1347.033534	-1.13664398	Down	1.25E-20	7.13E-19	2961.708691	1262.759032	-1.229850385	Down	5.48E-24	2.92E-22
AABR07024833.1	3845.604983	1753.867917	-1.132670475	Down	1.73E-06	2.11E-05	3845.604983	1642.663673	-1.227173452	Down	2.05E-07	2.54E-06
AC127076.2	2802.120479	992.0605001	-1.498018976	Down	8.30E-17	2.84E-15	2802.120479	1217.336661	-1.202790779	Down	9.99E-13	2.23E-11
AABR07058955.2	1168.635738	459.0845487	-1.347993532	Down	2.52E-07	3.74E-06	1168.635738	525.2127535	-1.15385146	Down	3.55E-06	3.72E-05
AABR07066020.1	643.263633	252.9872097	-1.34634568	Down	4.54E-07	6.33E-06	643.263633	296.6252142	-1.116768891	Down	9.82E-06	9.45E-05

RBMEC: Rat brain microvascular endothelial cells; RBMEC\_NC indicates control group; RBMEC\_OGD-R indicates OGD/R group; RBMEC\_OGD\_inTLR4 indicates TAK-242+OGD/R group. FDR, false discovery rate.

**Table S2** Information of twelve lncRNA-encoded proteins

Protein	Protein Sequence
ORF10_Rn60_13_0829.4:50:394	MMACKHCSDIFSKEGAGKPVASREDQGLEADDEKDSLKKQLREMELELAQTKLQLVEAKCKIQELEHQRGALMNEIQAAKNSWFSKTLNSIKTATGTQPLQPPQAPQPPKEST
ORF148_AABR07006894.1:5153:4980	MFLLAICFLRGHLTSSWFLYSCLGVLGELVRVPGQVNRDRIPVQLLKLGEGRGASPV
ORF45_AABR07019085.1:65:3250	MLRKILSEGVDHCMVKLDNDPQGYLSQPLSLLSVLQECHNTFTACFHSFYPTPALQWACLCDLLNCLDQDIQEANFKTSSSRLLAAVMSALCHTSVKLTSLFPIAYDGEVLLRSIVKQVSTENESTLVHRFPLLVGHMEKLSQSEENIS GMTSFREVLEKMLVIVLVPVRNSLRRESELFSHLSVNTCGLLASIVSELTASALGSEVDGLNSLHVKASANRFTKTSQGRSWNTGNGSPDAICFAVDKPGIVVGFVSVYGGGGIHEYELEVLVDDSEHSGDSTHSHRWTSLELVKGTY TTDDSPSDIAEIRLDKVVPLKENVKYAVRLRNYGSRRTANGDGGMTTVQCPDGVTFSTCSLSSNGTNQTRGQIPQILYRSEFDGDLQSQLVSKANEEDKNCRALS SVSTVRAAKDLLHRALAVDADDIPELLSSSSLFSMLLPLII AYIGPVAAPKVAVEVFGVLVQQLPSVAVLNQKYAPPFNPQSTDDSTTGNQPEQGLSACTTSNHAVIESEHPYKACVMHYKVTFFPECVRWMTIEFDPQCGTAQSEDLRLLTPVRTIQNAGYGAKVTSAHENLNSWIELKKYSGSS GWPTMVLVLPGNEALFSLETASDYVKKDKASFYGFKCFAGYEFSPGPDEGVIQLEKELANLGGVCAALMKKDLALPIGNELEEDLEILEEAAALQVCKTHSGILGKGLALSHSPTILEALEGNLPLIQSNEQSFLDDFIACVPGSSGG RLARWLQPDYADPQKTSLLLNKDDIRCGWPTTITVQTKDQYGDVHVHPNMKVEVKAVPVSQKTSLQQEQVKKSQRVPGSPAAAAAASCTTDMTFGGGLASPKLDVSYEPMIVKEARYIAITMMKVYENYSFEELRFASPTPKRPSNML IRVNDGTYCANWTPGAIGLYTVHVTIDGIEIDAGLEVKVKDPPKGMIPPGTQLVQPKADPQPNKIRKFKVAKDSAGLRIRSHPSLQSEQIGIVKVNVTITFIDEIHNDGQVWLRNLNEETIRKYVPMNGYTEAWCLSFNQHLGKSLLPVDVSRWILKAS
ORF50_AABR07025303.1:883:824	MFPRRSCLLLLRLFNFMVR
ORF8_AABR07049961.1:22:525	MYHHSWLTLYDLHVQAQQGKIAAEEDVGEDSQFMMLAKKVTAKALQKNASRAVAVQESKSVLSNPFETIRAGGAHQKLTGSLLNQPKAVLQKLATLSDLNPSAPRNSRNFVHTLSPTKAETAKSSSKPQVRRRGPSSMMSPSPKRLKT NDSSPGPKRSIFRYLES
ORF20_AABR07037943.1:929:1615	MFAGEEASESLMNLSPFDMKSLHHLISGKEFGVERSVRPIHSSMSSPAISIHEVGHTGVTKTERSGISRRLRSEMQRSTPSSPTGTSSTDSGGHHLGWGEQQGQWLRRRRLDGAINRVPVGFYQRVWKILQKCHGLSIDGYVLPSSTT QEMTPCEIKFAVHVESVLNRSVQPEYRQLLVEAIMVLTLLSDTEMDSIGGIIHVDQIVQLANQLFLQDQVGTGPMAGX
ORF6_AABR07066020.1:568:329	MVSDAQVRGPQRKVAHLRVVHTQGLDFVWKQDADEKHLVFLKGGQKAIIDAAEDLQELSNAIVMLSLINEPKGRRPS
ORF18_AABR07015040.1:701:486	MSSRQLFNTRPVLNSGGCTSRCCSLGGALSQPAGYCDCVFSAILGSAACRRIPFQRDGPQGLRSDLQKRA
ORF10_AC127076.2:73:480	MAFFFFFFFFPGRPGCVLAVGWVEKVPQRAAVVGLCGAASGRRRRRQRGGEQPRARSRAEEAPAGTGGGSTMAIRKKSNNKPPVLSHEFVLQNHADIVSCLAMLFLGLMFEITAKGAIIFVALQYNVTRPATGEY
ORF10_AABR07027870.2:106:402	MENLDEMDNFLNRYQVPKLNQDQINHLNSSITPKIEAVIRSLPTKKSPGSDGFSAEFYQTFKEEIVTILLKLLYKIETEGKLPNYFYEATVTLISNP
ORF63_AABR07033564.1:1925:2047	MLSLLFLSLVSTLSRLLLETFCSLTFLVPWRKKGFRKQP
ORF95_Rn60_10_0635.1:1957:1892	MSHLSKGLLFLSRIFDSELKS

**Table S3** TLR4 regulated lncRNA-encoded proteins expression in control, OGD/R, and TAK-242+OGD/R group

geneID	RBMEC_OGD-R RPKM	RBMEC_NC-RPKM	RBMEC_OGD_inTLR4-RPKM	Protein Sequence
AABR07049961.1	716.940132	2358.560245	1961.303735	MYHHSWLTLYDLHVQAQQGKIAAEEEDVGEDSQFMMLAKKVTAKALQKNASRAVAVQESKS VLSNPFETIRAGGAHQLKTGSLLNQPKAVLQKLATLSDLNPSAPRNSRNFVFHTLSPTKAETA KSSSKPQVRRRGPSMMSPKRLKTNDSPPGPKRSIFRYLES
AABR07025303.1	219.7508349	46.43456073	36.7210807	MFPRRSCLLLLRLNFMVR
AC127076.2	2802.120479	992.0605001	1217.336661	MAFFFFFFFFPGRPGGCVLAVGWEVKPQRAAVVGLCGAASGRRRRRQGGEQPRARSRAEE APAGTGGGSTMAIRKKSNNKPPVLSHEFVLQNHADIVSCLAMLFLGLMFEITAKGAIIFVALQ YINVTRPATGEY
AABR07066020.1	643.263633	252.9872097	296.6252142	MVSDAQVRGPQRKVAHLRVVHTQGLDFVKWKQDADEKHLVFLKGGQKAIDDAEDLQELS NAIVMLSLINEPKGRRPS

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