Analysis of cardiovascular disease-related NF-κB-regulated genes and microRNAs in TNFα-treated primary mouse vascular endothelial cells[*#]

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For identification of NF-κB-regulated genes, the pMVECs were treated by 30 ng/ml TNFα to activate NF-κB. 30 nM *Rela* siRNA was used to repress NF-κB activity that was activated by TNFα. The NF-κB activity in pMVECs were assessed by qPCR assay to detect the expressions of *Rela* and two well-known NF-κB-regulated genes, *Cxcl10* and *Vcam1*. The RNA samples from the qualified pMVECs with different NF-κB activity were analyzed with Genechip assay. As a result, 175 genes were markedly regulated in the TNFα-treated pMVECs in comparison with control cells (fold change≥1.5). Among these genes, as shown in Table S1, the expressions of 45 TNFα-increased and 32 TNFα-inhibited genes were markedly antagonized by *Rela* siRNA (fold change≥1.2).

Table S1   NF-κB-regulated genes in the TNFα-treated pMVECs

	Gene	Fold change		Gene	Fold change	
		T vs. C	T vs. S		T vs. C	T vs. S
Upregulation	*Fosb*	1.547	-2.998	*Snord71*	2.488	-1.517
	Nr4a1	1.873	-2.743	*Snord2*	1.594	-1.511
	Ppan	1.934	-2.323	*Tmem200b*	1.742	-1.502
	Fos	1.959	-2.302	*Olfr480*	1.498	-1.498
	Olfr1047	1.841	-2.123	*Tnf*	1.913	-1.496
	Dkk2	1.641	-1.958	*Spry1*	2.151	-1.467
	Egr1	2.627	-1.933	*Cldn1*	1.561	-1.459

	H2-T10	2.314	-1.874	Btg2	1.612	-1.383
	Spon1	1.822	-1.822	Dgkg	1.753	-1.424
	Vmn1r94	1.568	-1.714	Map1lc3b	1.881	-1.407
	Jun	1.597	-1.707	Antxr1	1.548	-1.381
	Snora30	1.814	-1.672	Ccl3	1.633	-1.373
	Angpt2	1.657	-1.657	Syt8	1.675	-1.371
	Gstp1	1.645	-1.645	Bmp4	1.556	-1.556
	Xdh	1.579	-1.579	Zfp36	2.105	-1.541
	Olfr490	1.652	-1.562	Clca6	1.500	-1.523
	Oog1	1.560	-1.560	Oas1e	1.610	-1.262
	Tcf23	1.647	-1.524	Dusp8	1.584	-1.261
	Itpr3	1.505	-1.520	Ier3	1.586	-1.254
	Snord53	1.545	-1.329	Olfr1109	1.739	-1.241
	Nfkbia	2.063	-1.321	Cox7b	1.573	-1.222
	9930111J21Rik1	1.668	-1.227	3000002C10Rik	1.499	-1.453
	1700084J12Rik	1.567	-1.392			

Downregulation	Olfr775	-1.574	1.230	Sprr1a	-2.428	1.391
	Alms1-ps2	-1.528	1.230	Cd200	-1.507	1.482
	Olfr1463	-1.842	1.230	Krt18	-1.691	1.488
	Il11ra1	-1.925	1.253	Ahcy	-2.362	1.494
	Unc93a	-1.990	1.256	H2-M10.5	-1.496	1.496
	Myom1	-1.719	1.261	Wisp1	-1.500	1.632
	Fem1a	-1.803	1.276	Cadm4	-1.586	1.692
	Snrpd2	-1.716	1.282	Klk1b24	-1.708	1.708
	Apol7b	-1.522	1.314	Defb35	-1.932	1.742
	Grhl2	-1.745	1.335	Ptpla	-1.565	1.971
	Sult2a2	-1.572	1.384	Rpl23	-1.946	2.061
	Usmg5	-1.638	2.246	Srpx2	-1.952	2.311
	2010005H15Rik	-1.542	1.315	Gm10139	-2.049	1.685
	4930570D08Rik	-1.913	4.062	Gm4871	-1.681	2.069
	1700010D01Rik	-1.546	1.546	Gm5848	-2.202	1.525
	2210418O10Rik	-1.511	1.246	Gm17758	-1.518	1.700

Note: C, control pMVECs. T, TNFα-treated pMVECs. S, siRNA-interfered pMVECs