

Supplementary Table 2.

HFD enhances E2 activity

Accession Number	Gene Symbol	E2-Fold Change	E2+HFD-Fold Change	Database Source
NM_007769	Dmbt1	1.619962032	8.196089092	RefSeq
NM_028216	Psca	10.3942007	40.81881324	RefSeq
NM_023785	Ppbbp	12.83995434	48.4483625	RefSeq
NM_029796	Lrg1	1.943687115	7.303133822	RefSeq
NM_177024	Tmprss11bnl	5.133462513	18.78632108	RefSeq
NM_001083884	Lypd8	2.271071825	7.200559442	RefSeq
NM_007482	Arg1	6.189493406	18.96308348	RefSeq
NM_001164787	Sprr2a2	1.944216886	5.879014488	RefSeq
NM_007976	F5	2.461197616	7.321400605	RefSeq
NM_010739	Muc13	9.126427074	26.76602507	RefSeq
NM_007398	Ada	1.655709229	4.75739451	RefSeq
NM_029638	Abp1	3.236262016	8.522468331	RefSeq
NM_001004174	AA467197	4.805652511	12.58110441	RefSeq
NM_001082960	Itgam	2.504269509	6.516622091	RefSeq
NM_013515	Stom	2.95122398	7.42659549	RefSeq
NM_011469	Sprr2b	4.323737437	10.10583763	RefSeq
NM_001013753	Pcdh17	1.948449221	4.520685853	RefSeq
NM_021443	Ccl8	1.658130244	3.703316021	RefSeq
NM_009694	Apobec2	3.239162846	7.158538131	RefSeq
NM_181596	Retnlg	3.869195609	8.50615415	RefSeq
NM_020049	Slc6a14	4.38166519	9.476274567	RefSeq
NM_145561	Tmprss11d	2.547942552	5.509515033	RefSeq
NM_172880	Tmprss11e	1.741700023	3.754916085	RefSeq
NM_145423	Slc5a8	6.051437958	13.02825237	RefSeq
NM_001024945	Qsox1	1.886240215	4.029743467	RefSeq
NM_007807	Cybb	4.141844814	8.711545374	RefSeq
NM_027997	Serpina9	1.715464772	3.607190628	RefSeq
NM_011470	Sprr2d	6.592268482	13.76169879	RefSeq
NM_009995	Cyp21a1	1.510508271	3.133176407	RefSeq
NM_001164612	Atp13a4	1.671385664	3.452725561	RefSeq
NM_001128132	Cd200r3	1.836582983	3.72647436	RefSeq
NM_010266	Gda	2.179895535	4.353568229	RefSeq
NM_028882	Sema3d	1.889244819	3.766661358	RefSeq
NM_181579	Pof1b	1.522822808	3.006852989	RefSeq
NM_009474	Uox	3.945886385	7.726874683	RefSeq

NM_133776	Gpr110	2.119058256	4.121799514	RefSeq
NM_029008	4833403I15Rik	2.280956605	4.393062425	RefSeq
NM_011581	Thbs2	1.708516878	3.241163203	RefSeq
NM_001287172	Alpl	1.929091735	3.580365818	RefSeq
NM_013650	S100a8	19.85538825	35.4485571	RefSeq
NM_197986	Tmem140	1.68814452	2.970779099	RefSeq
NM_139148	Clca4	16.62021243	27.97109834	RefSeq
NM_001035122	Golm1	1.640040945	2.758113194	RefSeq
NM_010751	Mxd1	2.698531603	4.494047376	RefSeq
NM_027921	Slc16a14	2.324736444	3.752571776	RefSeq
NM_009114	S100a9	14.32322954	23.07779797	RefSeq
NM_028133	Egln3	3.024553821	4.83050381	RefSeq
NM_008396	Itga2	2.502635906	3.910337144	RefSeq
NM_133977	Trf	2.249969846	3.504163279	RefSeq
NM_008597	Mgp	2.074649205	3.224953443	RefSeq
NM_173007	Tspan12	1.909244675	2.962518165	RefSeq
NM_001033367	Nlrc4	1.724193271	2.63263832	RefSeq
NM_011082	Pigr	2.022295751	3.083629995	RefSeq
NM_019514	Astn2	0.473953606	0.312879925	RefSeq
NM_001081354	Maml1d1	0.372820303	0.238252402	RefSeq
NM_001005854	Gm609	0.495672257	0.150884446	RefSeq
NM_008630	Mt2	0.665630486	0.378636133	RefSeq

HFD represses E2 activity

Accession Number	Gene Symbol	E2-Fold Change	E2+HFD-Fold Change	Database Source
NM_001145799	Ctla2a	6.926934746	3.802698786	RefSeq
NM_009475	Prap1	4.64400921	2.539873539	RefSeq
NM_001204203	Spp1	8.280947887	3.386378733	RefSeq
BC120655	Mmp7	7.288786623	2.923168515	GenBank
NM_011198	Ptgs2	9.343293902	3.622842281	RefSeq
NM_027890	Susd2	0.361822304	0.573922033	RefSeq

E2 enhances HFD activity

Accession Number	Gene Symbol	HFD-Fold Change	E2+HFD-Fold Change	Database Source
NM_028216	Psca	1.724691907	40.81881324	RefSeq
NM_023785	Ppbp	2.102511464	48.4483625	RefSeq
NM_013650	S100a8	1.897880295	35.4485571	RefSeq
NM_009114	S100a9	1.677371211	23.07779797	RefSeq
NM_139148	Clca4	3.099937224	27.97109834	RefSeq
NM_008392	Irg1	1.560638432	13.15334655	RefSeq
NM_153511	Il1f9	2.560953398	19.21836013	RefSeq
NM_010739	Muc13	3.91369049	26.76602507	RefSeq
NM_001004174	AA467197	2.028695025	12.58110441	RefSeq
NM_011470	Sprr2d	2.250105532	13.76169879	RefSeq
NM_011410	Slnf4	1.546061098	8.841574665	RefSeq
NM_145423	Slc5a8	2.30875593	13.02825237	RefSeq
NM_029796	Lrg1	1.515435728	7.303133822	RefSeq
NM_007976	F5	1.534460668	7.321400605	RefSeq
NM_030601	Clca2	1.579621964	7.421506135	RefSeq
NM_008147	Gp49a	2.091207664	9.197352705	RefSeq
NM_020049	Slc6a14	2.199658661	9.476274567	RefSeq
NM_007807	Cybb	2.024279263	8.711545374	RefSeq
NM_177024	Tmprss11bnl	4.408098108	18.78632108	RefSeq
NM_013532	Lilrb4	2.16048418	8.884672925	RefSeq
NM_013515	Stom	1.828386831	7.42659549	RefSeq
NM_020008	Clec7a	1.5749416	5.931998913	RefSeq
NM_001110517	Gm14446	2.202071022	7.992729881	RefSeq
NM_011337	Ccl3	1.539572706	5.383407618	RefSeq
NM_009474	Uox	2.219133817	7.726874683	RefSeq
NM_001164787	Sprr2a2	1.819717712	5.879014488	RefSeq
NM_011469	Sprr2b	3.181664395	10.10583763	RefSeq
NM_007651	Cd53	1.848735288	5.745873907	RefSeq
NM_007482	Arg1	6.314017824	18.96308348	RefSeq
NM_029638	Abp1	2.871451113	8.522468331	RefSeq
NM_010751	Mxd1	1.539634246	4.494047376	RefSeq
NM_001013753	Pcdh17	1.623699512	4.520685853	RefSeq
NM_010554	Il1a	5.26881552	13.90132345	RefSeq
NM_181596	Retnlg	3.365099119	8.50615415	RefSeq
NM_008396	Itga2	1.603843456	3.910337144	RefSeq
NM_030691	Igsf6	1.669640306	4.046627354	RefSeq
NM_001128132	Cd200r3	1.538395023	3.72647436	RefSeq

NM_028882	Sema3d	1.56265215	3.766661358	RefSeq
NM_021443	Ccl8	1.607563805	3.703316021	RefSeq
NM_001024945	Qsox1	1.760208912	4.029743467	RefSeq
NM_010266	Gda	1.955599127	4.353568229	RefSeq
NM_001145799	Ctla2a	1.728763279	3.802698786	RefSeq
NM_133977	Trf	1.642318188	3.504163279	RefSeq
NM_007769	Dmbt1	3.848675404	8.196089092	RefSeq
NM_008409	Itn2a	1.594613366	3.327723734	RefSeq
NM_134066	Akr1c18	2.231077559	4.654686489	RefSeq
NM_029499	Ms4a4c	1.545611785	3.223415877	RefSeq
NM_011662	Tyropb	1.811994195	3.775874986	RefSeq
NM_018857	Msln	1.721948506	3.554557567	RefSeq
NM_001164612	Atp13a4	1.67432199	3.452725561	RefSeq
NM_027997	Serpina9	1.755038485	3.607190628	RefSeq
NM_008597	Mgp	1.586801134	3.224953443	RefSeq
NM_001204203	Spp1	1.67787472	3.386378733	RefSeq
NM_009777	C1qb	1.728533623	3.481375264	RefSeq
NM_008620	Gbp4	1.569061246	3.155784447	RefSeq
NM_010185	Fcer1g	1.710331526	3.435435508	RefSeq
NM_205820	Tlr13	1.60238705	3.193197972	RefSeq
NM_197986	Tmem140	1.505437346	2.970779099	RefSeq
NM_019450	Il1f6	2.199678483	4.229327655	RefSeq
NM_011198	Ptgs2	1.887157718	3.622842281	RefSeq
NM_011581	Thbs2	1.71127229	3.241163203	RefSeq
NM_001252472	Cd84	1.6998699	3.105246938	RefSeq
NM_018881	Fmo2	1.507698894	2.704345853	RefSeq
NM_153505	Nckap1l	1.631300239	2.876035865	RefSeq
NM_013484	C2	1.585405258	2.779743953	RefSeq
NM_139198	Plac8	2.279143348	3.967664394	RefSeq
NM_145561	Tmprss11d	3.224534712	5.509515033	RefSeq
NM_181579	Pof1b	1.765517352	3.006852989	RefSeq
NM_010821	Mpeg1	2.702794829	4.562477149	RefSeq
NM_010745	Ly86	1.741541276	2.929385376	RefSeq
NM_133776	Gpr110	2.458363638	4.121799514	RefSeq
NM_007398	Ada	2.873691781	4.75739451	RefSeq
NM_028696	Nabp1	1.527199639	2.526034483	RefSeq
NM_008760	Ogn	1.678984215	2.74374613	RefSeq
NM_029419	Apol7a	1.61425631	2.629218424	RefSeq
NM_011082	Pigr	1.910508046	3.083629995	RefSeq
NM_001037859	Csf1r	1.585668288	2.471672049	RefSeq

NM_008013	Fgl2	1.541599134	2.379100692	RefSeq
NM_001082960	Itgam	4.235469792	6.516622091	RefSeq
NM_026588	Stx19	1.506873177	2.312910328	RefSeq
NM_009402	Pglyrp1	2.038635712	3.1251866	RefSeq
NM_001287172	Alpl	2.341205111	3.580365818	RefSeq
NM_001033367	Nlrc4	1.724431315	2.63263832	RefSeq
NM_008102	Gch1	1.855595604	2.828178804	RefSeq
NM_027921	Slc16a14	2.462731478	3.752571776	RefSeq
NM_010130	Emr1	2.056047127	3.111486529	RefSeq
NM_009995	Cyp21a1	2.074789058	3.133176407	RefSeq
NM_001005854	Gm609	0.589624346	0.150884446	RefSeq
NM_010570	Irs1	0.661794864	0.281664373	RefSeq
NM_001081354	Maml1	0.510919062	0.238252402	RefSeq
NM_029620	Pcolce2	0.64580835	0.315810345	RefSeq
NM_019514	Astn2	0.554440801	0.312879925	RefSeq
NM_172925	Klhl31	0.514292018	0.334257924	RefSeq

E2 represses HFD activity

Accession Number	Gene Symbol	HFD-Fold Change	E2+HFD-Fold Change	Database Source
NM_011978	Slc27a2	2.483391414	1.55583313	RefSeq
NM_009475	Prap1	5.110697968	2.539873539	RefSeq
NM_013737	Pla2g7	0.369271544	0.637961234	RefSeq