Supplementary Table 1. Published associations of *AGTRAP-PLOD1* locus with human blood pressure and renal function.

SNP	Minor Allele	MAF	Population	Gene	Position	Function	ΔSBP (*P*)	ΔDBP (*P*)	Study[†]
rs4846049	T	0.38	CEU	*MTHFR*	11,772,952	3' UTR	-0.6 ± 0.1 ($1.5x10^{-8}$)	-0.4 ± 0.1 ($3x10^{-10}$)	Johnson et al (22100073)
rs1801131[¥]	G	0.12	YRI	*MTHFR*	11,777,063	Exon (A1298C)	lowered GFR (<0.05); BP not tested		Fung et al (21613384)
rs1801133	A	0.44	CHB/JPT	*MTHFR*	11,778,965	Exon (C677T)	+2.5 (NS)	+2.1 (<0.01)	Jiang et al (15226090)
rs17037388	G	0.17	CEU	*MTHFR*	11,780,873	Intron	-1.6 ± 0.5 ($4x10^{-4}$)	-1.3 ± 0.3 ($9.1x10^{-6}$)	Tomaszewski et al (21060006)
rs17037390	A	0.17	CEU	*MTHFR*	11,783,430	Intron	-1.6 ± 0.5 ($6x10^{-4}$)	-1.3 ± 0.3 ($1.2x10^{-5}$)	Tomaszewski et al (21060006)
rs17367504	G	0.17	CEU	*MTHFR*	11,785,365	Intron	-1.7 ± 0.5 ($3x10^{-4}$)	-1.3 ± 0.3 ($1.8x10^{-5}$)	Tomaszewski et al (21060006)
rs17367504	G	0.17	CEU	*MTHFR*	11,785,365	Intron	-0.9 ± 0.1 ($2x10^{-13}$)	-0.5 ± 0.1 ($3x10^{-5}$)	Newton-Cheh et al (19430483)
rs17367504	G	0.10	CHB/JPT	*MTHFR*	11,785,365	Intron	-1.5 ± 0.9 (0.1)	-1.0 ± 0.5 (<0.05)	Liu et al (20852445)
rs13306561	G	0.17	CEU	*MTHFR*	11,788,391	Intron	-1.6 ± 0.5 ($6x10^{-4}$)	-1.2 ± 0.3 ($3.0x10^{-5}$)	Tomaszewski et al (21060006)
rs13306560	T	0.05	CEU	*MTHFR/CLCN6*	11,788,770	Promoter	-3.3 ± 0.7 ($6.1x10^{-6}$)	-2.6 ± 0.5 ($1.2x10^{-8}$)	Tomaszewski et al (21060006)
rs7537765	G	0.17	CEU	*CLCN6*	11,809,890	Intron	Associated with HTN ($1.5x10^{-4}$)		Levy et al (19430479)
rs198358	C	0.27	CEU	*NPPA*	11,826,663	3' Intergenic	-0.05 ± 0.01 ($6x10^{-5}$)	-0.05 ± 0.01 ($5x10^{-5}$)	Newton-Cheh et al (19219041)
rs5068	G	0.07	CEU	*NPPA*	11,828,561	3' UTR	-0.08 ± 0.02 ($2x10^{-6}$)	-0.08 ± 0.02 ($1x10^{-6}$)	Newton-Cheh et al (19219041)
rs5063	T	0.09	CHB/JPT	*NPPA*	11,830,235	Exon (Val7Met)	-0.9 ± 1.5 (NS)	-2.5 ± 1.0 (0.012)	Zhang et al (16368448)
rs13305986	G	0.02	CHB/JPT	*NPPA*	11,831,092	5' UTR	Associated with HTN (<0.05)		Kato et al (10677382)
rs198388	T	0.17	CHB/JPT	*NPPB*	11,839,927	3' Intergenic	Associated with HTN (<0.05)		Min et al (21200085)
rs11801879	C	0.07	CEU	*NPPB*	11,851,406	3' Intergenic	-2.1 ± 0.6 ($4x10^{-4}$)	-1.8 ± 0.4 ($7.7x10^{-6}$)	Tomaszewski et al (21060006)

[†]PMID is given in parentheses

[¥] showed additive decline in GFR (*P* <0.01) with rs1801133

Supplementary Table 2. Custom Zinc Finger Nucleases, Sequencing Primers, and Strain Designations

Strain Designation	Gene ID	Target Sequence (5' to 3')*	Forward Primer (5' to 3')	Reverse Primer (5' 5o 3')	Description of Mutation
SS-Agtrap^{em8Mcwi}	*Agtrap*	ATCCTGGCCCTGGGTgtgtggGCTGTGGCCCAGCGG	CTGTGGCTAAGACCCTGGAG	AGAGGTGGGTCGCTGTGTAG	100-bp mutation deleting part of exon 3 and the splice acceptor
SS-Clcn6^{em2Mcwi}	*Clcn6*	GTCCCTGGTGACGACtgtggtGGTGTTTGTGGCCTCCATG	TCCTGATTCTGTTTGGGCTT	AAAAGATGGCAGGCAAGTGT	15bp deletion in exon 12
SS-Mthfr^{em1Mcwi}	*Mthfr*	CCCCAGCCCCCGATCtgaggGCAGCAGCAGTGGCA	GGAGTGGTTGCCACTAGAGC	CCGACCCCCATTATTAACCT	28bp frameshift deletion in exon 2
SS-Nppa^{em4Mcwi}	*Nppa*	GCCTCCGCAGGCCCTGAGCgagcagACCGATGAAGCGGGG	ATACAGTGCGGTGTCCAACA	AGCCCTCAGTTTGCTTTTCA	22bp frameshift deletion in exon 2
SS-Nppb^{em4Mcwi}	*Nppb*	TTCCCAATTCGTCACAgaagctGCTGGAGCTGATAAG	GGTCTGCATAGGGAGATGGA	GTCTGAGAGCAAACCAAGGG	138bp deletion of part of intron 1 and exon 2
SS-Plod1^{em1Mcwi}	*Plod1*	CATCGCTGCCGAATCttccagAACCTGGATGGAGCCTTG	ATGTGGCAGGCTGAGCTAGT	GGGCCACTTGGTTATTGAAA	10bp frameshift deletion in exon 4

Supplementary Table 3. Functional predictions for human *AGTRAP-PLOD1* haplotype blocks

Haplotype Block 1

Lead SNP	Proxy SNP (gene)	Chromosome	Coordinate_HG18	Distance to Lead SNP	r^2	RegulomeDB Score	eSNP
rs5063	**rs5063 (*NPPA*)**‡	chr1	11830235	0	1	1f	*MTHFR, CLCN6*
rs5063	rs61757273	chr1	11832323	2088	0.737	5	
rs5063	rs7552330	chr1	11826679	3556	0.618	No Data	
rs5063	rs2272803	chr1	11821376	8859	1	2b	
rs5063	rs2075539	chr1	11820345	9890	1	1f	*MTHFR, CLCN6*
rs5063	rs41275500	chr1	11819669	10566	1	5	
rs5063	rs79811212	chr1	11814681	15554	1	No Data	
rs5063	rs58120150	chr1	11847831	17596	0.618	No Data	
rs5063	rs41275484	chr1	11811812	18423	1	No Data	
rs5063	rs77003042	chr1	11849334	19099	0.609	No Data	
rs5063	rs74714707	chr1	11849345	19110	0.609	No Data	
rs5063	rs75540316	chr1	11849485	19250	0.737	6	
rs5063	rs77072136	chr1	11810648	19587	1	No Data	
rs5063	rs79653311	chr1	11850465	20230	0.609	5	
rs5063	rs77012921	chr1	11852348	22113	0.609	6	
rs5063	rs2076003	chr1	11806734	23501	1	6	
rs5063	rs75030554	chr1	11854032	23797	0.609	6	
rs5063	rs116525098	chr1	11854359	24124	0.609	6	
rs5063	rs79837245	chr1	11855434	25199	0.609	5	
rs5063	rs75747410	chr1	11804314	25921	1	4	
rs5063	rs3737965	chr1	11789038	41197	1	2b	
rs5063	rs17037397	chr1	11784750	45485	0.867	5	
rs5063	**rs2274976 (*MTHFR*)**	chr1	11773514	56721	0.867	4	
rs5063	rs3737967	chr1	11770036	60199	0.867	2b	
rs5063	rs114941496	chr1	11748672	81563	0.737	2b	

Haplotype block 2

Lead SNP	Proxy SNP (gene)	Chromosome	Coordinate_HG18	Distance	r^2	RegulomeDB Score	eSNP
rs11801879	rs11801879	chr1	11851406	0	1	5	
rs11801879	rs11804222	chr1	11859101	7695	0.656	4	
rs11801879	rs72864766	chr1	11860986	9580	0.803	5	

Haplotype block 3

Lead SNP	Proxy SNP (gene)	Chromosome	Coordinate_HG18	Distance	r^2	RegulomeDB Score	eSNP
rs5068	rs5068	chr1	11828561	0	1	4	*NPPA, NPPB*
rs5068	rs61764044	chr1	11828438	123	1	4	
rs5068	rs41275502	chr1	11824281	4280	0.881	2b	
rs5068	rs55741089	chr1	11821446	7115	1	4	
rs5068	rs55892892	chr1	11819443	9118	1	5	
rs5068	rs41275494	chr1	11816720	11841	1	5	
rs5068	rs72640260	chr1	11809391	19170	1	No Data	
rs5068	rs17376328	chr1	11799249	29312	1	No Data	
rs5068	rs45439601	chr1	11778671	49890	0.881	5	
rs5068	rs17375901	chr1	11775103	53458	0.764	5	
rs5068	rs41307757	chr1	11761813	66748	0.881	5	
rs5068	rs72640211	chr1	11761349	67212	0.649	5	

Haplotype block 4

Lead SNP	Proxy SNP (gene)	Chromosome	Coordinate_HG18	Distance	r^2	RegulomeDB Score	eSNP
rs198388	rs198388	chr1	11839927	0	1	1f	*MTOR*
rs198388	rs549596	chr1	11838682	1245	0.935	No Data	
rs198388	rs198379	chr1	11838054	1873	0.764	No Data	
rs198388	rs198389	chr1	11841858	1931	0.839	1f	*MTOR*
rs198388	rs3753581	chr1	11842776	2849	0.602	6	
rs198388	rs198375	chr1	11836344	3583	0.79	6	
rs198388	rs632793	chr1	11833264	6663	0.79	5	*NPPA, NPPB*
rs198388	rs6676300	chr1	11847887	7960	0.626	No Data	
rs198388	rs503040	chr1	11813282	26645	0.648	No Data	
rs198388	rs535107	chr1	11812055	27872	0.617	6	
rs198388	rs198401	chr1	11810971	28956	0.617	6	
rs198388	rs198399	chr1	11806216	33711	0.617	5	
rs198388	rs198391	chr1	11799004	40923	0.617	1f	*MTHFR*
rs198388	rs12404124	chr1	11796456	43471	0.617	6	
rs198388	rs4846054	chr1	11791817	48110	0.684	5	
rs198388	rs3737966	chr1	11770346	69581	0.65	4	
rs198388	rs11586659	chr1	11767756	72171	0.602	4	
rs198388	rs10864543	chr1	11766917	73010	0.628	5	
rs198388	rs4845882	chr1	11765754	74173	0.602	1f	*MTHFR*
rs198388	rs10864542	chr1	11764731	75196	0.602	5	
rs198388	rs2004445	chr1	11763953	75974	0.602	5	
rs198388	rs1889292	chr1	11763530	76397	0.602	5	
rs198388	rs6697244	chr1	11761435	78492	0.602	5	
rs198388	rs7538516	chr1	11759269	80658	0.602	6	
rs198388	rs11121828	chr1	11757041	82886	0.602	6	
rs198388	rs12734761	chr1	11756769	83158	0.602	6	
rs198388	rs12735869	chr1	11756750	83177	0.602	No Data	
rs198388	rs6540999	chr1	11755953	83974	0.602	6	
rs198388	rs10779764	chr1	11754898	85029	0.602	5	
rs198388	rs11121827	chr1	11754687	85240	0.602	4	

Haplotype block 5

Lead SNP	Proxy SNP (gene)	Chromosome	Coordinate_HG18	Distance	RSquared	RegulomeDB Score	eSNP
rs1801133	**rs1801133 (*MTHFR*)**	chr1	11778965	0	1	4	

Haplotype block 6

Lead SNP	Proxy SNP (gene)	Chromosome	Coordinate_HG18	Distance	RSquared	RegulomeDB Score	eSNP
rs198358	rs198358	chr1	11826663	0	1	No Data	*NPPA, NPPB*

Haplotype block 7

Lead SNPs	Proxy SNP (gene)	Chromosome	Coordinate_HG18	Distance	r^2	RegulomeDB Score	eSNP
rs1801131, rs4846049	**rs1801131 (*MTHFR*)**	chr1	11777063	0	1	1f	*MTOR*
rs1801131, rs4846049	rs12121543	chr1	11777258	195	0.727	1f	*MTHFR, CLCN6*
rs1801131, rs4846049	rs1476413	chr1	11774887	2176	0.68	1f	*MTHFR*
rs1801131, rs4846049	rs3818762	chr1	11773590	3473	0.643	1f	*MTHFR*
rs1801131, rs4846049	rs4846049	chr1	11772952	4111	0.895	No Data	
rs1801131, rs4846049	rs1023252	chr1	11821620	44557	0.677	1f	*MTHFR, CLCN6*

Haplotype block 8

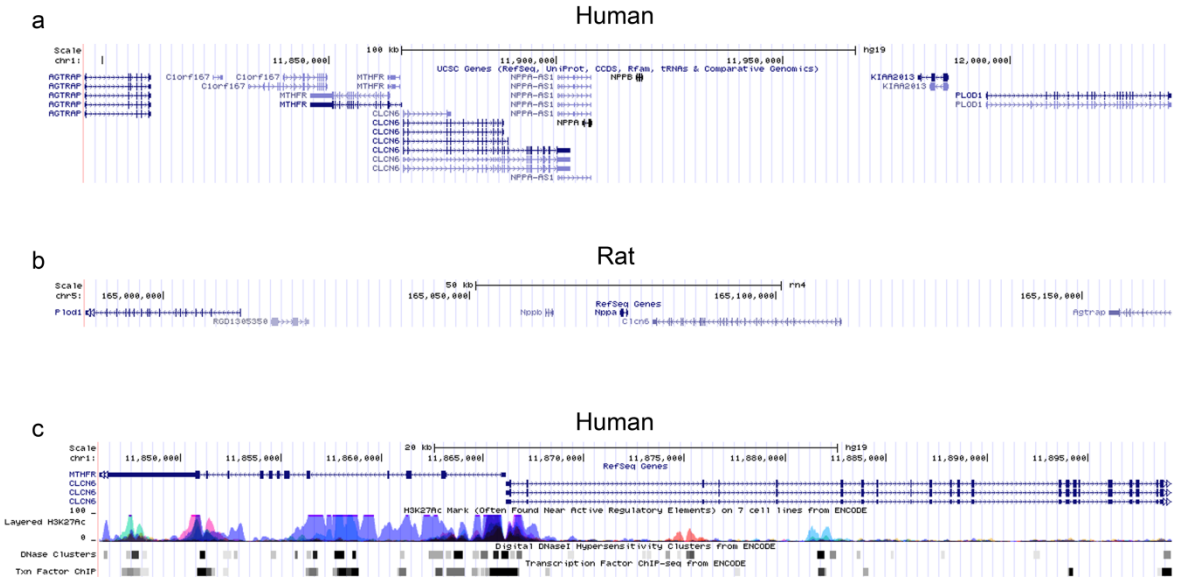
Lead SNPs	Proxy SNP (gene)	Chromosome	Coordinate_HG18	Distance	r^2	RegulomeDB Score	eSNP
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs17367504	chr1	11785365	0	1	4	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs2066470	chr1	11785644	279	0.685	4	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs17037396	chr1	11784634	731	0.685	6	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs3753588	chr1	11786491	1126	0.627	4	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs7553194	chr1	11786736	1371	0.627	5	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs3753584	chr1	11787173	1808	0.891	4	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs17037390	chr1	11783430	1935	1	4	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs35464336	chr1	11783394	1971	0.685	4	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs13306553	chr1	11782704	2661	0.685	No Data	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs3753582	chr1	11788129	2764	0.627	4	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs13306561	chr1	11788391	3026	0.891	4	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs3766747	chr1	11782288	3077	0.685	6	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs17421560	chr1	11780911	4454	0.685	5	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs17037388	chr1	11780623	4742	1	4	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs56221660	chr1	11790324	4959	0.627	No Data	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs55814225	chr1	11791098	5733	0.627	6	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs6697335	chr1	11791609	6244	0.636	6	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs114540413	chr1	11792203	6838	0.627	6	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs72640243	chr1	11792437	7072	0.627	No Data	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs72640244	chr1	11792440	7075	0.627	No Data	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs55851065	chr1	11792720	7355	0.627	6	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs17037425	chr1	11792970	7605	0.73	No Data	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs2066462	chr1	11777483	7882	0.685	5	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs12564002	chr1	11793318	7953	0.627	No Data	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs12565990	chr1	11793447	8082	0.627	No Data	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs116422234	chr1	11794315	8950	0.627	No Data	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs6699270	chr1	11794907	9542	0.627	6	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs6687229	chr1	11795243	9878	0.627	No Data	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs79448237	chr1	11795276	9911	0.627	No Data	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs72640249	chr1	11795571	10206	0.627	4	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs72640251	chr1	11795607	10242	0.627	4	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs72640253	chr1	11795642	10277	0.627	2b	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs17037427	chr1	11796003	10638	0.947	No Data	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs13306556	chr1	11774697	10668	0.685	No Data	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs17037429	chr1	11796374	11009	0.947	6	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs17376286	chr1	11796572	11207	0.627	6	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs17037432	chr1	11796741	11376	0.627	5	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs17037434	chr1	11796765	11400	0.627	5	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs17037435	chr1	11796776	11411	0.627	5	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs41275472	chr1	11798887	13522	0.947	No Data	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs72640257	chr1	11798982	13617	0.627	5	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs72640221	chr1	11771559	13806	0.685	3a	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs1537514	chr1	11770655	14710	0.685	4	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs1537515	chr1	11770489	14876	0.685	4	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs1537516	chr1	11770448	14917	0.685	4	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs3820192	chr1	11770359	15006	0.685	4	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs12564593	chr1	11801206	15841	0.627	6	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs2184227	chr1	11769329	16036	0.636	5	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs2076001	chr1	11801854	16489	0.627	6	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs2076002	chr1	11801947	16582	0.627	5	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs2050265	chr1	11802286	16921	0.947	5	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs2151654	chr1	11768111	17254	0.685	4	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs55867221	chr1	11767809	17556	0.685	2b	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs55890341	chr1	11767324	18041	0.685	5	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs6703535	chr1	11766506	18859	0.685	5	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs6665802	chr1	11766270	19095	0.685	5	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs6669371	chr1	11804729	19364	0.947	6	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs55994631	chr1	11805219	19854	0.627	6	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs12567136	chr1	11806318	20953	0.947	1f	*MTHFR*
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs56153133	chr1	11808234	22869	0.947	6	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs56001051	chr1	11761428	23937	0.685	5	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs2076004	chr1	11809400	24035	0.627	No Data	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs72640210	chr1	11761283	24082	0.636	2b	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs56260590	chr1	11761103	24262	0.685	5	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs55738118	chr1	11761038	24327	0.685	No Data	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs56313628	chr1	11760965	24400	0.685	No Data	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs7537765	chr1	11809890	24525	0.947	6	*NPPB*
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs41275478	chr1	11809903	24538	0.627	6	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs56190030	chr1	11809969	24604	0.947	No Data	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs72640208	chr1	11760344	25021	0.685	4	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs72640206	chr1	11760269	25096	0.685	5	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs6688187	chr1	11760060	25305	0.685	6	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs6541001	chr1	11759954	25411	0.636	6	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs41275458	chr1	11759257	26108	0.685	5	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs72638700	chr1	11758624	26741	0.685	6	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs41275456	chr1	11758143	27222	0.636	5	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs72638698	chr1	11758042	27323	0.685	No Data	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs41275488	chr1	11812791	27426	0.627	No Data	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs113980419	chr1	11757657	27708	0.685	No Data	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs72638696	chr1	11757296	28069	0.685	5	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs72638693	chr1	11756443	28922	0.685	No Data	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs2236796	chr1	11815202	29837	0.836	5	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs2236797	chr1	11815237	29872	0.627	5	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs72640262	chr1	11815876	30511	0.627	5	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs114951726	chr1	11753831	31534	0.636	No Data	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs72638682	chr1	11752756	32609	0.636	5	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs17037452	chr1	11818262	32897	0.947	No Data	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs55857306	chr1	11818382	33017	0.947	5	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs2075538	chr1	11819189	33824	0.627	1d	*MTHFR, CLCN6*
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs72640267	chr1	11819873	34508	0.627	5	
rs17367504, rs7537765, rs13306561, rs17037388, rs17037390	rs55788159	chr1	11820513	35148	0.627	5	

Haplotype block 9

Lead SNP	Proxy SNP (gene)	Chromosome	Coordinate_HG18	Distance	RSquared	RegulomeDB Score	eSNP
rs13306560	rs13306560	chr1	11788770	0	1	3a	
rs13306560	rs45594036	chr1	11788404	366	1	3a	
rs13306560	rs13306567	chr1	11783052	5718	1	No Data	
rs13306560	rs111847924	chr1	11782334	6436	1	No Data	
rs13306560	rs74683406	chr1	11782223	6547	1	No Data	
rs13306560	rs80038130	chr1	11782193	6577	1	No Data	
rs13306560	rs76161097	chr1	11795407	6637	1	5	
rs13306560	rs77078602	chr1	11781977	6793	1	No Data	
rs13306560	rs80307360	chr1	11781719	7051	1	6	
rs13306560	rs41452445	chr1	11781171	7599	0.85	2b	
rs13306560	rs45533333	chr1	11780990	7780	1	5	
rs13306560	rs45577533	chr1	11780163	8607	1	2b	
rs13306560	rs6541006	chr1	11780113	8657	1	6	
rs13306560	rs74866971	chr1	11799649	10879	1	6	
rs13306560	rs75367103	chr1	11799718	10948	1	No Data	
rs13306560	rs78642329	chr1	11800233	11463	1	5	
rs13306560	rs79904915	chr1	11800566	11796	1	No Data	
rs13306560	rs74983098	chr1	11800813	12043	1	No Data	
rs13306560	rs76148073	chr1	11801653	12883	0.826	No Data	
rs13306560	rs79171214	chr1	11801690	12920	1	No Data	
rs13306560	rs78366115	chr1	11802055	13285	1	5	
rs13306560	rs79296154	chr1	11805073	16303	1	5	
rs13306560	rs77204442	chr1	11806162	17392	1	5	
rs13306560	rs41275474	chr1	11807206	18436	1	5	
rs13306560	rs75049241	chr1	11809286	20516	1	5	
rs13306560	rs41275476	chr1	11809712	20942	1	No Data	
rs13306560	rs77327024	chr1	11811510	22740	1	No Data	
rs13306560	rs41275482	chr1	11811800	23030	1	No Data	
rs13306560	rs76219075	chr1	11812155	23385	1	No Data	
rs13306560	rs111370806	chr1	11812443	23673	1	No Data	
rs13306560	rs41275486	chr1	11812692	23922	1	No Data	
rs13306560	rs41275490	chr1	11812977	24207	1	No Data	
rs13306560	rs76033082	chr1	11814144	25374	1	6	
rs13306560	rs76335758	chr1	11814200	25430	1	6	
rs13306560	rs75545998	chr1	11814542	25772	1	No Data	
rs13306560	rs78436614	chr1	11814589	25819	1	No Data	
rs13306560	rs76288343	chr1	11815238	26468	1	5	
rs13306560	rs75297615	chr1	11815344	26574	1	No Data	
rs13306560	rs78054341	chr1	11815366	26596	1	5	
rs13306560	rs74771026	chr1	11816417	27647	1	No Data	
rs13306560	rs74053326	chr1	11818211	29441	0.655	6	
rs13306560	rs74053327	chr1	11818254	29484	1	No Data	
rs13306560	rs41275496	chr1	11818553	29783	1	5	
rs13306560	rs79025427	chr1	11820579	31809	1	5	
rs13306560	rs111479605	chr1	11822057	33287	1	No Data	
rs13306560	rs79429328	chr1	11822390	33620	1	5	
rs13306560	rs77785799	chr1	11822729	33959	1	5	
rs13306560	rs41275504	chr1	11824736	35966	1	3a	
rs13306560	rs41275506	chr1	11825602	36832	0.826	2a	
rs13306560	rs41275508	chr1	11826636	37866	1	No Data	
rs13306560	rs61764037	chr1	11826773	38003	1	6	

†Boldface text indicates a nonsynonymous SNP with the affected gene italicized and in parentheses

Supplementary Figure 1. UCSC genome browser views of *AGTRAP-PLOD1* locus in human and rat. (**a**) Human *AGTRAP-PLOD1* locus (Chr1: 11,796,142-12,035,599 bp). (**b**) Rat *Plod1-Agtrap* locus (Chr5: 164,987,252-165,164,570 bp). (**c**) Higher magnification screen shot of the human *MTHFR* and *CLCN6* promoters with the locations of CpG islands and predicted conserved transcription factor binding sites. Note that *MTHFR* and *CLCN6* transcripts are located on opposite strands.



Supplementary Figure 2. Analysis of wild-type (WT) and null transcripts by RT-PCR. Total RNA was isolated by Trizol extraction from the kidney (SS, SS-Agtrap^{em8Mcwi}, SS-Clcn6^{em2Mcwi}, and SS-Plod1^{em1Mcwi}) or heart (SS, SS-Mthfr^{em1Mcwi}, SS-Nppa^{em4Mcw}, and SS-Nppb^{em4Mcwi}) based on transcript abundance of target genes. Target gene expression was assessed using the following primer pairs: *Nppa* (5'-CCGAGACAGCAAACATCAGA-3' and 5'-CTTCATCGGTCTGCTCGC-3'), *Nppb* (5'-CACTTCTGCAGCATGGATCT-3' and 5'-TGTCTCTGAGCCATTTCCTCT-3'), *Mthfr* (5'-AGCAGCAGTGGCAGCGAG-3' and 5'-AGGTGACATCCACGAAGAGG-3'), *Agtrap* (5'-AGCGGGACTCTGTTGATGC-3' and 5'-TTCCTGAGAAGGTCCGAAGA-3'), *Plod1* (5'-GAGGCCAAGTATCCCACAGT-3' and 5'-AGGTTCTGGAAGATTCGGCA-3'), and *Clcn6* (5'-CTGCCTGGACTGCTGAACTT-3' and 5'-ACCACCACAGTCGTCACCA-3'). Primers detecting β-actin (5'-TGGGTCAGAAGGATTCCTATGT-3' and 5'-CAGCCTGGATAGCAACGTACA-3') were used as loading controls. The wild-type alleles are indicated by +/+. The null alleles are indicated by -/-. Note that the *Mthfr* heterozygotes are indicated by +/-. NTC indicates the no template control.