

Gene Cluster ID	Atp6v0d		
Drosophila melanogaster gene	VhaAC39-1 (CG2934)		
FlyBase ID	FBgn0028665		
Predicted function	ATPase, H+ transporting, lysosomal 38kDa, V0 subunit d		
Atp6v0d CLEAR element conservation:			
	<u>5' / 5' UTR</u>	<u>intron1</u>	<u>intron1</u>
Dmel\	AAGAGTTGAAAA TCATATGA CTTGTCGATCGA	CACGCCCTGGG TCACATGA CCAGCGATAACA	
Mdom\	CAACTGCTATA GTCAATGA CAGTCGATAAAG	TACAGGGGCAAG TCATGTGA CATTTGTATGTG	
Ccap\	TACCAATGACAG TCATGTGA TGACTTATGACA	GGGTGGTGTGG TCATGTGA CACACCATTAAA	
Gmor\	ACTCTGAGAGAG TCATATGA CAGTAAGAATGA	ACAAGGGCCTGG TCATGTGA TGCGTACTATGT	TAGTAATAATTT TCATATGA ATGTATGTATGA
Ppap\	CTCAACTACGG TCATATGA CATTTTGATAAT	TTGAGAAATTAT TCACGTGA TCTTGATTAAAC	-----
Llon\	-----	TTTTTGATTAT TCACATGA TTACAGGTTTC	AAACTCTTGGAAT TCATATGA CCACGGAAATT
Agam\	AAAAGTAGGTAGTCATATGATGCGTTTTTGCC	GTGTAAAGGCGGT TCATATGACC AGCCTTCAGC	
Aara\	AAAAGTAGGTAGTCATATGATGCGTTTTTGCC	GTGTAAAGGCGGT TCATATGACC AGCCATCAGC	
Aqan\	AAAAGTAGGCAGTCATATGATGCGTTTTTGCC	GTGTAAAGGCGGT TCATATGACC AGCCATCAGC	
Achr\	AAAAATAGGTAGTCATATGATGCGTTTTTGCC	AGTAAAGGCGGGT TCATATGACC TGCCCTCAAA	
Aepi\	GCAAAATTGTAGTCATATGATGCGTTTTTGCC	GGTATTGACGGGT TCATATGACC TGCCCTCGGT	
Amin\	ACACAATTGTAGTCATATGATGCGTTTAGCT	ACGGCAGGCGGT TCATATGACC TGCTCAATAC	
Afun\	CAAAAATTGTAGTCATATGATGCGTTTACCT	ACGGCAGGCAGGT TCATATGACC TGCTCAACAC	
Aste\	ACAAAATTGTAGTCATATGATACATTTTGCCC	CGGGTAGGCGGT TCATATGACC TACTCAACCG	
Adir\		ACATAAGGCAGGT TCATGTGACC CCTTTGCATG	
Aalb\	AAGACTGAGTAGTCATATGATGCACATTCTGC	TCACCCACCGGGT TCATATGACC GATCTTTTCA	
Adar\	AGTCAGGGGTAGTCATATGATGCGCTTTCAGC	TCACATACTGGGT TCATATGACC CGCTTTTCA	
Aaeg\	TCCGAGTTCGAGTCATATGACACTTTTCAGAG	CATCTTGGTTGAT TCATATGACC TATCACACG	
Cqui\	CCCATGCGCGAGTCATATGACACTTTTCAGAG	CGATTTGGTTGAT TCATATGACC TATCATATA	
Mdes\	TTCGCATTGTTA TCACATGA ATTGTCAATGTT	TGTTGTTGTTAT TCATATGA TGAAAAGTGAC	
Bmor\	TCTATGTTACAT TCATATGATCAAT TTTCTTT		
Msex\	TCTATGATCGCAT TCATATGATCAAT GCAACTC		
Dple\	TCTATGGAGCTAT TCATATGATCAAT GATCTAC		
Hmel\	TCTATGGAGTTAT TCATATGATCAAT GATCTAT		
Pxyl\	TCTATGGTCAA TCATATGATCAAT GAATGAT		
Tcas\	ctg TCACATGA ttgtcactaa TCATATGA caa		
Dpon\	caa TCACATGA t..gtcaaaa TCATATGA cgc		
Amel\	CTCACAAGATAG TCATATGATCGAC ACGAAAA		
Aflo\	CTCATAAGATAG TCATATGATCGAC ACGAAAA		
Bter\	CTCGCTAGATGG TCATATGATCGAC ACGAAAA		
Bimp\	CTCGCTAGATGG TCATATGATCGAC ACGAAAA		
Mrot\	CTCACTGTACGG TCATATGATCGAC ACGAAAA		
Ngir\	GTTAGACTTTAG TCATATGATCGACT CCTGAC		
Nvit\	GTTAGACTTTAG TCATATGATCGACT CCTGAC		
Nlon\	GTTAGACTTTAG TCATATGATCGACT CCTGAC		
Aech\	ATGACATGACAG TCATATGATTTT TAGAAGAGG		
Acep\	GTGACATGACAG TCATATGATTTT TAGAAGAGG		
Sinv\	CGGCTAGCTCG TCATATGATTTT TGTGAAAA		

Pbar\ CTGCTCGTTAGTCATATGATTTTGAGAAAGG
 Cflo\ AGTCCATATGGTCATATGATTTTCACGAAAGG
 Lhum\ GGTTCATATGCTGTCATATGATCTTCGTGAAAA
 Hsal\ CCGTGCGCTCGGTCATATGATCTCGGTGAAA
 Lful\ CACATCCTCGAGTCATATGATCTGCTATCCCT

Rpro\ cagactgaattgTCATATGAatacacccctgcc
 Phum\ tcattaatgtatTCATATGAatcattaataaat
 Phum\ cactcttctctgTCATATGAcaacagattggg
 Dpul\ ccgtcccaagtGTCATGTGAttctgatccgtc
 Isca\ taactgccggagTCATATGAcaataacggccc
 Hsap\ gcccccttatggTCACGTGAaggcgttgcgcg
 Nvec\ ttctctgcgcggTCATGTGAttcttacatgta
 Tadh\ gtatctcgttgcTCACATGAtcctcttgtgag

Atp6v0d gene structure comparisons:

(Click on orthologs for genomic, mRNA and protein sequence informations)

Key: UTR region, CDS region

Order	Species	Atp6v0d orthologs	5'exon		intron	exon		intron	exon3'			Extended CLEAR region		Position	bps from TSS		
Diptera (Drosophilidae)	<i>Drosophila_melanogaster</i>	Dmel\Vha39-1	249	127	338	509		90	417		502	aagagttgaaaaTCATATGActgtcgcacga cacgccccctgggTCACATGAccagcgataaca		5'UTR intron1	47 437		
Diptera (Muscidae)	<i>Musca_domestica</i>	Mdom\Vha39-1		127	357	509		948	417			caactgctatagTCATATGAcagtcgataaag tacaggggcaagTCATGTGAcattgtatgtg		5'UTR? intron1	>-213 >223		
Diptera (Tephritidae)	<i>Ceratitis_capitata</i>	Ccap\Vha39-1	197	124	292	509		70	417		138	taccaatgacagTCATGTGAtgacttatgaca gggtggtgttggTCATGTGAcacaccattaaa		5'UTR? intron1	-33 425		
Diptera (Glossinidae)	<i>Glossina_morsitans</i>	Gmor\Vha39-1	199	127	213	509		58	417		158	actctgagagagTCATATGAcagtaagaatga acaagggcctggTCATGTGAtgcgtactatgt tagtaataattTCATATGAatgtatgtatga		5'UTR intron1 intron1	39 382 419		
Diptera (Psychodidae)	<i>Lutzomyia_longipalpis</i>	Llon\Atp6v0d	94	121	418	764 (509+255)					67	162	333	tttttgatttatTCACATGAttcacaggtttc aaactctggaaTCATATGAccacggaaaatt		5' 5'UTR	-617 12
	<i>Phlebotomus_papatasi</i>	Ppap\Atp6v0d		121	3295	764 (509+255)					ND	162		ctcaactacgggTCATATGAcattttgataat ttgagaaattatTCACGTGAtcttgattaacc		5' intron1	>-93 >552
-																	
Diptera (Culicidae)	<i>Anopheles_gambiae</i>	Agam\Atp6v0d AGAP000721	370	121	517	509		1037	417		219	aaaactaggtagTCATATGAtgcgtttttgcc gtgtaaaggcggTCATATGAccagccttcagc gcaaaatgTCATGTGAaTCACGTGAtatgcacc		5'UTR intron1 intron2	5 799 2033		
	<i>Anopheles_arabiensis</i>	Aara\Atp6v0d-1		121	500	509		1314	417			aaaactaggtagTCATATGAtgcgtttttgcc gtgtaaaggcggTCATATGAccagccatcagc gcgaaatgTCATGTGAaTCACGTGAtaatcacc		5'UTR? intron1 intron2	>-368 >438 >1603		
	<i>Anopheles_quadriannulatus</i>	Aqan\Atp6v0d-1		121	511	509		1305	417			aaaactaggcagTCATATGAtgcgtttttgcc gtgtaaaggcggTCATATGAccagccatcagc gcaaaatgTCATGTGAaTCACGTGAtaatcacc		5'UTR intron1 intron2	>-368 >451 >1617		
	<i>Anopheles_christyi</i>	Achr\Atp6v0d-1		121	495	509		450	417			aaaaataggtagTCATATGAtgcgtttttgcc agtaaaggcgggTCATATGAcctgccttcaaa		5'UTR intron1	>-317 >421		
	<i>Anopheles_epiroticus</i>	Aepi\Atp6v0d-1		121	1287	509		792	417			gcaaaattgtagTCATATGAtgcgtttttgcc ggtattgacgggTCATATGAcctgccttcggt		5'UTR intron1	>-326 >445		

<i>Anopheles_minimus</i>	Amin\Atp6v0d-1		121	365	509	72	417		acacaattgtagTCATATGAtgcgttttagct acggcaggcgggTCATATGAcctgctcaatac	5'UTR intron1	>-370 >309
<i>Anopheles_funestus</i>	Afun\Atp6v0d-1		121	418	509	77	417		caaaaattgtagTCATATGAtgcgttttacct acggcaggcaggTCATATGAcctgctcaacac	5'UTR intron1	>-378 >304
<i>Anopheles_stephensi</i>	Aste\Atp6v0d-1		121	413	509	79	>392		acaaaattgtagTCATATGAtacatttggccc cgggtaggcgggTCATATGAcctactcaaccg	5'UTR intron1	>-436 >372
<i>Anopheles_dirus</i>	Adir\Atp6v0d-1		121	314	509	62	417		acataaggcaggTCATGTGAcccttttgcattg	5'UTR? intron1	>293
<i>Anopheles_nili</i>	Anil\Atp6v0d-1										
<i>Anopheles_albimanus</i>	Aalb\Atp6v0d-1		121	467	509	73	417		aagactgagtagTCATATGAtgcacattctgc tcaccaccgggTCATATGAccgatcttttca	5'UTR? intron1	>-254 >385
<i>Anopheles_darlingi</i>	Adar\Atp6v0d-1		121	633	509	92	417	421	agtcaggggtagTCATATGAtgcgtttcagc tcacatactgggTCATATGAccgtcttttca	5'UTR? intron1	>-244 >450
<i>Aedes_aegypti</i>	Aaeg\Atp6v0d AAEL011025*	143	121	ND	509	337	417 (255 + 162)	445	tccgagtgcgagTCATATGAcacttttcagag catcttggttgaTCATATGAccttatcacacg	5' intron1	-20 409
<i>Culex_pipiens_qui.</i>	Cqui\Atp6v0d CPU009947		121	ND	926 (509+417)			110	cccatgcgcgagTCATATGAcacttttcagag cgatttggttgaTCATATGAccttatcatata	5' intron1	>-154 >255
<i>Anopheles_gambiae</i>	Agam\Atp6v0d-2 AGAP013199		1044						ND		
<i>Anopheles_arabiensis</i>	Aara\Atp6v0d-2		1044						ND		
<i>Anopheles_quadriannulatus</i>	Aqan\Atp6v0d-2		1044						ND		
<i>Anopheles_christyi</i>	Achr\Atp6v0d-2		1044						ND		
<i>Anopheles_epiroticus</i>	Aepi\Atp6v0d-2		1044						ND		
<i>Anopheles_minimus</i>	Amin\Atp6v0d-2		1044						ND		
<i>Anopheles_funestus</i>	Afun\Atp6v0d-2		1044						ND		
<i>Anopheles_stephensi</i>	Aste\Atp6v0d-2		1044						ND		
<i>Anopheles_dirus</i>	Adir\Atp6v0d-2		1044						ND		
<i>Anopheles_nili</i>	Anil\Atp6v0d-2		1044						ND		
<i>Anopheles_albimanus</i>	Aalb\Atp6v0d-2		1068						ND		
<i>Anopheles_darlingi</i>	Adar\Atp6v0d-2		1071						ND		

Diptera
(Cecidomyiidae)

<i>Mayetiola destructor</i>	Mdes\Atp6v0d		121	332	509	76	255	81	162		ttegcattgtagTCACATGAattgcaatggt tggttggttagTCATATGAtgaaaaagtgc	5' intron1	>-171 >310
<i>Bombyx mori</i>	Bmor\Atp6v0d		121	786	509	213	255	262	162		tctatgttcacaTCATATGAtcaattttctt	5'	>-117
<i>Manduca sexta</i>	Msex\Atp6v0d		121	272	509	75	255	335	162		tctatgatcgcaTCATATGAtcaatgcaactc	5'	>-126
<i>Danaus plexippus</i>	Dple\Atp6v0d	110	121	176	509	86	255	82	162	59	tctatggagctaTCATATGAtcaatgatctac	5'UTR	5
<i>Heliconius melpomene</i>	Hmel\Atp6v0d		121	157	509	408	255	332	162		tctatggagttagTCATATGAtcaatgatctat	5'	>-97

	<i>Plutella_xylostella</i>	Pxy\Atp6v0d	129	121	102	509					78	255			141	162	334	tctatggtcaaaTCATATGAtcaatgaatgat	5'UTR	26
Strepsiptera	<i>Mengenilla_moldrzyki</i>	Mmol\Atp6v0d		121	ND	509?					ND	408						ND		
Coleoptera	<i>Tribolium_castaneum</i>	Tcas\Atp6v0d LOC663777	73	121	50	509 (351+158)					43	255(177+178)			54	162	192	TCACATGAttgactactaaTCATATGAcatttagttg	5'/5'UTR	-4/6
	<i>Dendroctonus_ponderosae</i>	Dpon\Atp6v0d	73	121	801	926 (351+158+177+78+162)											267	tgcacatgacaaTCACATGAtctccaaggat ggattgtcaaaaTCATATGAcgtcgggcggag	5' 5'UTR	-9 13
Hymenoptera	<i>Apis_mellifera</i>	Amel\Atp6v0d GB12698	112	121	121	351	125	158	94	177	155	78	102	162	411			ctcacaagatagTCATATGAtcgacacgaaaa	5'UTR	20
	<i>Apis_florea</i>	Aflo\Atp6v0d		121	126	351	119	158	115	177	133	78	97	162				ctcataagatagTCATATGAtcgacacgaaaa	5'	>-84
	<i>Bombus_terrestris</i>	Bter\Atp6v0d		121	126	351	129	158	209	177	118	78	76	162				ctcgctagatggTCATATGAtcgacacgaaaa	5'	>-84
	<i>Bombus_impatiens</i>	Bimp\Atp6v0d		121	126	351	142	158	209	177	118	78	77	162				ctcgctagatggTCATATGAtcgacacgaaaa	5'	>-84
	<i>Megachile_rotundata</i>	Mrot\Atp6v0d		121	90	351	123	158	77	177	79	78	77	162				ctcactgtacggTCATATGAtcgacacgaaaa	5'	>-92
	<i>Acromyrmex_echinator</i>	Aech\Atp6v0d		121	258	351	145	158	76	177	1075	78	190	162				atgacatgacagTCATATGAttttagaagagg	5'	>-81
	<i>Atta_cephalotes</i>	Acep\Atp6v0d		121	249	351	132	158	73	177	1121	78	ND	162				gtgacatgacagTCATATGAttttagaagagg	5'	>-81
	<i>Solenopsis_invicta</i>	Sinv\Atp6v0d	76	121	389	351	2226	158	281	177	ND	78	136	162				cggctagctcggTCATATGAttttgggaaaa	5'	>-86
	<i>Camponotus_floridanus</i>	Cflo\Atp6v0d		121	789	351	524	158	86	177	141	78	140	162				agtccattattgTCATATGAttttcacgaagg	5'	>-105
	<i>Harpegnathos_saltator</i>	Hsal\Atp6v0d		121	242	351	310	158	76	177	119	78	110	162				ccgtgcgctcggTCATATGAtctcggtgaaaa	5'	>-95
	<i>Pogonomyrmex_barbatus</i>	Pbar\Atp6v0d		121	263	351	117	158	67	177	135	78	163	162				ctgctcgtttagTCATATGAttttgagaaagg	5'	>-84
	<i>Linepithema_humile</i>	Lhum\Atp6v0d		121	239	351	102	158	102	255(177+178)			110	162				ggtcatatcgtcTCATATGAtcttcgtgaaaa	5'	>-81
	<i>Nasonia_vitripennis</i>	Nvit\Atp6v0d NV13431		121	82	351	90	158	80	177	89	78	89	162	433			gttagacttttagTCATATGAtcgactcctgac	5'UTR?	>-151
	<i>Nasonia_giraulti</i>	Ngir\Atp6v0d		121	82	351	90	158	88	177	88	78	89	162				gttagacttttagTCATATGAtcgactcctgac	5'UTR?	>-151
	<i>Nasonia_longicornis</i>	Nlon\Atp6v0d		121	82	351(172+179)	90	158	80	177	88	78	89	162				gttagacttttagTCATATGAtcgactcctgac	5'UTR?	>-151
Hemiptera	<i>Acyrtosiphon_pisum</i>	Apis\Atp6v0d ACYPI003170	197+16	786							85	270						ND		
	<i>Rhodnius_prolixus</i>	Rpro\Atp6v0d		121	116	172	1506	179	81	158	143	177	520	78	233	162		cagactgaattgTCATATGAatacacctgcc	5'	>-740
Phthiraptera	<i>Pediculus_humanus</i>	Phum\Atp6v0d PHUM410380		121	100	172	67	179	177	158	90	177	80	78	86	>144		tcattaatgtatTCATATGAatcattaaaaat cactcttctagTCATATGAcaacagattggg	5' 5'	>-228 >-71
Odonata	<i>Ladona_fulva</i>	Lful\Atp6v0d		121	72	172	79	179	111	158	477	177	1429	78	84	162		cacatcctcgagTCATATGAtctgctatccct	5'	>-95
Crustacea	<i>Daphnia_pulex</i>	Dpul\Atp6v0d		121	64	172	76	337 (179 + 158)			65	177	59	78	60	162	167	ccgtccaagtgtTCATGTGAttctgatccgtc	5'	>-108
Ixodida	<i>Ixodes_scapularis</i>	Iscap\Atp6v0d ISCW002101	53	121	ND	172	3991	179	127	158(80+78)	814	177	74	78	1886	162		taactgccggagTCATATGAtcaatagcgccc	5'UTR	29

	<i>Homo_sapiens</i>	ATP6V0D1	100	130	27241	172	8837	179	1349	80	3747	78	126	177	100	78	103	162		gcccccttatggTCACGTGAggcgttgcgcg	5'	-23
Cnidaria	<i>Nematostella_vectensis</i>	v1g128006		130	2206	172	456	179	880	80	357	78	513	177	1100	78	385	162		ttctcgccggTCATGTGAttcctacatgta	5'	>-81
Placozoa	<i>Trichoplax_adhaerens</i>	TRIADDRAFT_37067		127	287	172	126	179	122	80	211	78	144	177	79	78	79	162	712	atctcgttgcTCACATGAtcctcttgtgagtc	5'	>-324