

Gene Cluster ID															Atp6v0a-1																																
Protein Cluster ID															ATP6V0A-1																																
Drosophila melanogaster gene															Vha100-1 (CG1709)																																
FlyBase ID															FBgn0028671																																
Predicted function															ATPase, H+ transporting, lysosomal V0 subunit a1																																
Atp6v0a-1 gene structure comparisons:																																															
Key: UTR region. CDS region , alternatively spliced exons INTRON																																															
Order	Species	Atp6v0a1 orthologs	5' exon	intron	5'exon	intron	exon	intron	exon	intron	exon	intron	exon	intron	exon	intron	exon	intron	exon	intron	exon	intron	exon	intron	exon	intron	exon	intron	exon	intron	exon3'	Extended CLEAR region	Position	bps from TSS													
Diptera (Drosophilidae)	Drosophila_melanogaster	DmelVha100-1	129	414	23	117	300	177	73	129	767	92 (158)	431	101+595+42	450	127	86	1156										ND	218	376	211	65	172	60	103	294	ND										
	Diptera (Muscidae)	Musca_domestica	MdomVha100-1				117	62	177	63	129	3674	95	4023	ND	ND	127	62	1159										58	218	305	205	1085	172	65	112		ND									
Diptera (Tephritidae)	Ceratitis_capitata	CcapVha100-1				117	96	177	65	129	3674	95	4084	ND	ND	127	2346	1159										106	218	586	223	106	172	63	112		ND										
Diptera (Glossinidae)	Glossina_morsitans	GmorVAtp6v0a1			40	117	64	177	52	129	3802	92	548	98+ND+ND	2108	127	57	1159										54	218	1184	208	729	172	60	112		ND										
Diptera (Psychodidae)	Lutzomyia_longipalpis	LlonVAtp6v0a1				117	79	177	172	129	ND	ND	ND	ND	ND	127	63	1902?																			ND										
	Phlebotomus_papatasi	PpapVAtp6v0a1				117	70	177	62	129	ND	ND	ND	ND	ND	127	ND	1890																			ND										
Diptera (Culicidae)	Anopheles_gambiae	AgamVAtp6v0a1 AGAP003711	76	905	63	117	96	306			1909 (1858)	101 (152)	1969	95+438+42	1618	127	71	1380										79	250	88	172	95	103	614	gcctgcctgcTCATGTGAgtcggaatc	5'	617										
	Anopheles_arabiensis	AaraVAtp6v0a1				117	106	306			1913 (1862)	101 (152)	1997	95+432+42	1623	127	71	1380										79	250	87	172	95	103		gcctgcctgcTCATGTGAgtcggaagc	5'	> -467										
	Anopheles_quadrimaculatus	AqanVAtp6v0a1				117	98	306			1919 (1868)	101 (152)	1985	95+435+42	1633	127	71	1380										79	250	87	172	95	103		gcctgcctgcTCATGTGAgtcggaatc	5'	> -471										
	Anopheles_christyi	AchrVAtp6v0a1				117	95	306			1855 (1804)	101 (152)	1922	95+422+42	1567	127	87	1380										82	259	67	172	72	103		gcctgcctgcTCATGTGAgttgcaatc	5'	> -411 > -370										
	Anopheles_epitropicus	AepiVAtp6v0a1				117	94	306			2040 (1997)	101 (152)	2041	95+411+42	1665	127	88	1380										68	256	76	172	103	103		tgctcttaccTCATGTGAgtcgagaaat	5'	> -461										
	Anopheles_minimus	AminVAtp6v0a1				117	69	306			2304 (2253)	101 (152)	1830	95+429+42	1359	127	68	1380										89	256	94	172	84	103		gcctgagccacTCATGTGAgttgaatc	5'	> -406										
	Anopheles_funestus	AfunVAtp6v0a1				117	70	306			2268 (2217)	101 (152)	1818	95+432+42	1525	127	75	1377										77	256	80	172	89	103		gcctgcctgcTCATGTGAgttgaatc	5'	> -408										
	Anopheles_stephensi	AsteVAtp6v0a1				117	98	305*(A base deletion at 95)			2438 (2387)	101 (152)	ND	ND	ND	127	80	1377										118	250	71	172	88	103		attatcgcaccTCATGTGAgtatggtgta	5'	> -436										
	Anopheles_dirus	AdirVAtp6v0a1				117	99	306			1968 (1917)	101 (152)	1852	95+423+42	1449	127	81	1380										69	250	86	172	76	103			ND											
	Anopheles_nili	AnilVAtp6v0a1				117	66	306			ND	101 (152)	1669	95+417+42	ND	127	80	1380?										84	ND	ND	ND	ND	ND			ND											
	Anopheles_albimanus	AalbVAtp6v0a1				117	113	306			2060 (2009)	101 (152)	1998	95+368+42	1282	127	98	1380										82	247	95	172	117	103			ND											
	Anopheles_darlingi	AdarVAtp6v0a1				117	98	306			2127 (2076)	101 (152)	2011	95+416+42	1250	127	91	1380										89	247	79	172	115	103			ND											
	Aedes_aegypti	AaegVAtp6v0a1 AAEL003743	119	21603	73	117	61	306			8727 (8673)	101 (155)	10223	98+373+42	865	127	10180	1374										171	247	1170	172	63	103	423		ND											
Culex_pipiens_qui.	CquiVAtp6v0a1 CQ005774				117	68	306			4573 (4519)	101 (155)	1694	95+510+42	912	127	1676	1618												78	172	63	103			ND												
Diptera (Cecidomyiidae)	Mayetiola_destructor	MdesVAtp6v0a1			117	619	177	97	129	ND	ND	89 (155)	ND	ND	ND	127	77	390				91	984										89	223	634	172	96	103			ND						
Lepidoptera	Bombyx_mori	BmorVAtp6v0a1			183	117	2623	180	464	129	1376	86	18949	ND	ND	127	888	177	2018	213	219	151	433	140	885	237+487+113	1030	149?	ND	137?+ND+87	505	114+170+127	1170	133	1024	100	207	accgtaaatgaTCATGTGAactgattaaaaa	intron1	1783							
	Manduca sexta	MsexVAtp6v0a1			117	4147	180	997	129	892	86	17147	ND	ND	127	522	177	2679	213	495	151	539	140	231	237+369+113	329	149	321	137+449+87	552	114+495+127	460	133	436	100		actgtgaccagTCACATGAactgattaaaaca	intron1	>1612								
	Danaus_plexippus	DpleVAtp6v0a1			153	117	2089	180	794	129	626	86	698	89	5127	127	223	177	771	213	459	151	86	140	164	237+129+113	327	149	237	131+82+87	569	114+77+127	260	133	643	100		ttatcatcagaTCATGTGAgttgattataat	intron1	1463							
	Heliconius_melpomene	HmelVAtp6v0a1			117	3423	180	308	129	962	86	1001	89	ND	127	1367	177	ND	213	378	151	401	140	194	237+217+113	108	143	207	137+304+87	316	114+310+127	371	133	280	100		atcacagtaaaTCACATGAattgattataat	intron1	>1901								
	Plutella_rylostella	PxyVAtp6v0a1			145	117	1777	180	1025	129	1488	86	878	89	ND	127	821	177	1952	213	277	151	297	140	2945	237+368+113	403	143	426	137+316+87	584	114+408+127	458	133	2598	100	64										
Strepsiptera	Mengenilla_moldrzyki	MmolVAtp6v0a1				117	ND	177	ND	129	ND	ND	ND	ND	ND	127	48	390				459	291				540	350 (237+113)	1459	131	1723	239				989	217	848	172	3847	103			ND			
Coleoptera	Tribolium_castaneum	TcasVAtp6v0a1			139	117	99	177	51	129	3195	86 (110)	1907	ND	ND	127	48	177	52	504 (213+151+140)				46	350 (237+113)	48	128	402	230				70	202	243	172	48	103			ND						
	Dendroctonus_ponderosae	DponVAtp6v0a1			132	117	3290	177	55	129	4022	86 (110)	7037	ND	ND	127	472	177	54	213	53	291				84	205+52+148	59	128	745	236				51	229	70	172	61	103	134	ctgcacgttggTCACGTGAaccgcgaat	5'	-332			
Hymenoptera	Apis_mellifera	AmelVAtp6v0a1			199	117	365	306			ND	86 (113)	ND	101	ND	127	126	177	ND	213	78	769										158	230	632	220	173	172	ND	103			ttccaaactgaTCATATGAactaattgaat	5'	-339			
	Apis_florea	AfloVAtp6v0a1				117	1100	306?			13453	86 (113)	9185	101	6221	127	78	177	ND	213	71	769										141	230	691	220	174	172	285	103			ttccaaactgaTCATATGAactaattgaat	5'	> -538			
	Bombus_terrestris	BterVAtp6v0a1 LOC100644609			286	117	2099	306			ND	86 (113)	6891	101	2531	127	101	177	360	213	77	769										75	233	96	217	81	172	144	103	526			ttccaaactgaTCATATGAaccacaaggagt	5'	-401		
	Bombus_impatiens	BimpVAtp6v0a1				117	2090	306			7195	86 (113)	6896	101	2574	127	102	177	404	213	79	769										75	233	94	217	81	172	144	103			ttccaaactgaTCATATGAaccacaaggagt	5'	> -678			

	Megachile_rotundata	MrotAtp6v0a1				117	1596	306	4878	86 (113)	3368	101	2172	127	83	177	80	213	70	769	68	233	79	217	85	172	87	103		tcataagttTCATATGAacagtatca	5'	> 697								
	Acromyrmex_echinator	AechAtp6v0a1				117	161	306	7790	86 (113)	12487	101	3250	127	175	177	372	213	91	1379							212	103		tttcgactggaTCATGTGAacatgcgatg	5'	> 979								
	Atta_cephalotes	AcepAtp6v0a1				117	156	306	9745	86 (113)	12045	101	3471	127	175	177	341	213	97	1379							211	103		tgaacattggaTCACATGAacattgcgatg	5'	> 1615								
	Solenopsis_invicta	SinvAtp6v0a1				117	963	306	6761	86 (113)	9313	101	3098	127	910	177	207	213	97	1418							860	103		tttttaactaTCAATTGAacatgcgatta caatgagatgaTCAGTTGAgaataaaaa	5' 5'	> 355 > 289								
	Pogonomyrmex_barbatus	PharAtp6v0a1				117	128	306	4123	86 (113)	5708	101	1762	127	215	177	147	213	74	1382							232	103		tttcagacggaTCATGTGAattgcagaca atttttagaTCACGTGAacactgacct	5' 5'	> 791 > 413								
	Camponotus_floridanus	CfloAtp6v0a1				117	189	306	3265	86 (113)	5672	101	1449	127	143	177	342	213	77	1379							258	103		ND										
	Linepithema_humile	LhumAtp6v0a1				117	178	306	3393	86 (113)	4984	101	1620	127	256	177	102	213	93	1394							706	103		caagaagcggaTCACGTGAacattgcgat	5'	> 175								
	Harpegnathos_saltator	HsalAtp6v0a1				117	346	306	3199	86 (113)	4614	101	1649	127	246	177	160	213	92	1388							332	103		ectcgctaccaTCACGTGAacgtcgctcg	5'	> 206								
	Nasonia_vitripennis	NvirAtp6v0a1			391	117	604	306	2338	86 (113)	3271	101	3316	127	248	390		80	778	65	224	356	208	80	172	82	112	660		ttttctcggaTCATATGAacctttgac	5'	267								
Nasonia_giraulti	NgirAtp6v0a1				117	604	306	2350	86 (113)	3222	101	3317	127	249	390		80	778	65	224	355	208	80	172	82	112			ttttctcggaTCATATGAacctttgac	5'	> 658									
Nasonia_longicornis	NlonAtp6v0a1				117	602	306	2366	86 (113)	3248	101	3338	127	248	390		80	778	65	224	355	208	80	172	82	112			ttttctcggaTCATATGAacctttgac	5'	> 658									
Odonata	Ladona_fulva	LfulAtp6v0a1				117	150	177	1488	129	2642	86	ND	ND	ND	ND	ND	111	213	598	151	572	140	114	237+256+110	1594	125	80	116+354+108	763	259	162	172	ND	103		taactcgatTCATATGAacgactgagtc	5'	> 76	
		LfulAtp6v0a2				114	509	177	4068	129	465	86	812				127	372	177	ND	213	1289	151	127	140	1882	243+ND+113	122	125	131	116+ND+ND	5688	226	409	172	868	97		ND	
Phthiraptera	Pediculus_humanus	PhumAtp6v0a1				117	1940	177	175	129	ND	86	ND	ND	ND	127	84	177	90	213	88	141	106	150	65	165+131+185	85	128	105	224	77	214	73	172	95	103		aaaataagtggaTCACATGAgaataataaa	intron1	>568
		PhumAtp6v0a2				117	101	177	107	129	315	95	546				127	83	177	73	213	68	151	83	140	68	237+85+113	103	125	71	224	88	226	79	172	78	97		aagttgtgTCACGTGAaataagatt	intron 5
Crustacea	Daphnia_pulex	DpulAtp6v0a1			136	114	161	306		813	86	1092	92	285	127	75	270+66+120	61	291	69	353	71	131	71	116+77+111	60	123+66+88	77	172	73	97	166		ND						
		DpulAtp6v0a2	ND		ND	114	116	231+82+79+117+76		232					65+72+62	61	270+93+120	401	285	68	222+81+146	66	131	76	146+66+111	505	198+139+88	79	175	64	94		ND							
Ixodida	Ixodes_scapularis	IscaAtp6v0a1	ND		ND	117	95	79+ND+98	462	129	ND	86	5004			127	3251	83+97+94	413	213	455	151	1930	140	422	137+1495+79	995	119	4996	223	1932	382		172	3023	97		agaaggggaTCATGTGAacatttcggctc	intron2	>392
		IscaAtp6v0a2	ND		ND	117	ND	79+ND+101	ND	129	ND	86	184			127	1850	83+ND+94+567+107+ND+55	ND	181	1965	140	2016	149+1374+82	ND	119	82	51+624+235+4884+111	ND	364	ND	175	ND			gggcgaattTCACGTGAcaaatctt	intron 1	> 1792		
Order	Species	Atp6v0a orthologs	5' exon	intron	5'exon	intron	exon	intron	exon	intron	exons	intron	exon	intron	exon	intron	exon	intron	exon	intron	exon	intron	exons	intron	exon	intron	exon	intron	exon3'	Extended CLEAR region	Position	bps from TSS								
	Homo_sapiens	ATP6V0A1	120	1884	47	117	5417	79+1502+98	1982	129	7420	104+720+127+2077+83	2288	94	4023	213	3119	151	3696	140	560	155+437+91	3207	119	1664	217+273+108+6215+108	6233	118	310	172	6566	94		GGATCAAATGACAA	5'UTR	303				
		ATP6V0A2			248	117	5940	79+3649+98	2205	138	1405	89+1497+127+6016+83	1522	94	1434	213	6513	151	265	137	259	188+97+91	2634	119	849	211+2324+120+1053+120	2017	118	2277	172	940	106	3723	ND						
		ATP6V0A3	104	2148	4	117	364	79+811+221		82		86+339+127+73+83	160	94	224	213	613	145	2330	140	74	158+77+91	906	119	83	214+368+126+173+105	70	118	232	178	76	79	81	ND						
Cnidaria	Nematostella_vectensis	PhumAtp6v0a1				96+89+21	159	79+77+98	2396	129	418	110+699+210	703	94	128	78	176	135	264	151	490	140	511	152+99+97	501	119	354	46+550+84+649+87+105+108+335+114	192	118	362	102+594+70	541	94	423	gcacagactgTCACGTGAacagagtggtg tctgtgtggaTCATGTGAacatggggat ttactctctTCACATGAattctatttaacaa	5' intron1 intron3	>-92 >274 >901		
Placozoa	Trichoplax_adhaerens	TadhAtp6v0a1				96	1159	79+228+98	259	129	185	116+91+127+192+83	140	94	87	78	75	135	115	151	106	140	77	140+105+88	83	119	93	46+82+84+173+87+98+117+151+126	94	118	108	172	75	106		ttgtgtgtgTCACATGAgtgttgcat tgaatgaagcaTCATGTGAacagattcata	5' 5'	>440 >-376		
		TadhAtp6v0a2				96+384+21	116	79+166+98	242	129	139	101+139+127+144+83	95	94	89	78	87	135	243	151	101	137	205	176+64+91	82	119	108	46+218+84+136+106+214+120+141+86	104	118	169	102+138+70	147	91		ccatgcagcaTCATGTGAaagaattcaat	5'	>-160		
		TadhAtp6v0a3				108+2785+21	449	79+453+98	129	129	215	107+94+127+95+83	77		172		86	135	116	151	87	137	155	140+92+88	132	119	146	46+81+84+73+84+75+114+75+84?	56	151	84	105+101+70	89	91						