

Gene Cluster ID	Atp6v1D
Drosophila melanogaster gene	Vha36-1 (CG8186)
FlyBase ID	FBgn0022097
Predicted function	ATPase, H⁺ transporting, V1 subunit D
Protein size	246 amino acids
Cytogenetic map	2R:52A10-52A10
Gene sequence location	2R:11428922..11430003 [+]
Dmel CLEAR sequence	TCATCTGA; TCATATGA
CLEAR sequence location	2R:11430063..11430070; 2R:11430114..11430121
Drosophila ATP6v1D paralogs	Vha36-2 ; Vha36-3
FlyBase Vha36-1 gene model & CLEAR element (red) position:	



Atp6v1D gene structure comparison:

Key: UTR region, CDS region

Species	Atp6v1D orthologs	5'exon3'		Extended CLEAR region	Position	bps from TSS
<i>Drosophila_melanogaster</i>	Dmel\Vha36-1	120	741	221	ttgcaaaaagggTCATCTGActgttttatac acaattgcacagTCACATGAcagcaaacatat	3' 3' 1142 1193
<i>Drosophila_simulans</i>	Dsim\GD11125*	99	741	180	ttgtaaaaagggTCATCTGActgttttatac acaatagcacagTCACATGAcagcaaacatat	3' 3' 1122 1173
<i>Drosophila_sechellia</i>	Dsec\GM21623*	97	741	178	ttgtaaaaagggTCATCTGActgttttatac acaatagcacagTCACATGAcagcaaacatat	3' 3' 1119 1170
<i>Drosophila_yakuba</i>	Dyak\GE11717		741		ttgcaaaaagggTCATCTGActtattttatac acaatcacacagTCACATGAcagcaaacatat	3' 3' >1023 >1073
<i>Drosophila_erecta</i>	Dere\GG20533		741		ttgcaaaaagggTCATCTGActtattttatac accatcacacagTCACATGAcagcaaacatat	3' 3' >1022 >1073
<i>Drosophila_biarmipes</i>	Dbia\Vha36-1		741		ttgcaagaagggTCATCTGActgttttatac acaatgacgaggTCACATGAcagcaaacatat	3' 3' >1050 >1101
<i>Drosophila_suzukii</i>	Dsuz\Vha36-1		741		ttgcaaaaagggTCATCTGActgttttatac acaatgacgaggTCACATGAcagcaaacatat	3' 3' >1037 >1088
<i>Drosophila_takahashii</i>	Dtak\Vha36-1		741		ttgcaaaaagggTCATCTGActgttttatac gcaatgacgaggTCACATGAcagcaaacatat	3' 3' >1039 >1090
<i>Drosophila_eugracilis</i>	Deug\Vha36-1		741		atgcaaaaagggTCATCTGActgttttatac acaatgacacagTCACATGAcagcaaacatat	3' 3' >1027 >1078
<i>Drosophila_elegans</i>	Dele\Vha36-1		741		ttgcaaaaagggTCATCTGActttttatac acaatgacgaggTCACATGAcagcgaacatat	3' 3' >1023 >1073
<i>Drosophila_rhopaloea</i>	Drho\Vha36-1		741		ttgcaaaaagggTCATCTGActgttttatac acaatgacgaggTCACATGAcagcaaacatat	3' 3' >1021 >1072
<i>Drosophila_ficusphila</i>	Dfic\Vha36-1		741		tggcaaaaagggTCATCTGActgttttatac aacaataatgcagTCACATGAcagcaaacatat	3' 3' >1022 >1071
<i>Drosophila_kikkawai</i>	Dkik\Vha36-1		741		attgcaaaaagggTCATCTGActgttttatac acaatgacgaggTCACATGAcagcgaacatat	3' 3' >1027 >1078
<i>Drosophila_bipectinata</i>	Dbip\Vha36-1		741		ttggaaaaaaggTCATCTGActgttttatac aaaaacattaggTCACATGAcagcaaacatat	3' 3' >1030 >1070
<i>Drosophila_ananassae</i>	Dana\GF11142	87	741		ttgaaaaaaaggTCATCTGActgttttatac aaaaacattaggTCACATGAcagcaaacatat	3' 3' 1116 1157
<i>Drosophila_pseudoobscura</i>	Dpse\GA20878	81	741		ttggaaaaaaggTCATCTGActgttttatac acaacgacacaggTCACATGActgcaaacatat	3' 3' 1078 1128
<i>Drosophila_persimilis</i>	Dper\GL20077		741		ttggaaaaaaggTCATCTGActgttttatac acaacgacacaggTCACATGActgcaaacatat	3' 3' >999 >1048
<i>Drosophila_miranda</i>	Dmir\Vha36-1		741		ttggaaaaaaggTCATCTGActgttttatac acaatgacacaggTCACATGActgcaaacatat	3' 3' >999 1048
<i>Drosophila_willistoni</i>	Dwil\GK23028	93	744	148	tgaaaaaattggTCATCTGActgtattttgc ttggcaatgcaaTCACATGActgcgaacatat	3' 3' 1147 1180

<i>Drosophila_albomicans</i>	Dalb\Vha36-1		741		gtgaaaaatggTCATCTGActttttataca atgcaaatgcagTCATGTGAcagcaacatatg	3' 3'	>1055 >1099
<i>Drosophila_mojavensis</i>	Dmoj\GI20255	65	741		ggagaaaatgggTCATCTGActagatttatac atgcaaatgcagTCATGTGAcagcaacatatg	3' 3'	1132 1177
<i>Drosophila_virilis</i>	Dvir\GJ20208	84	747		gaaaaaaatgggTCATCTGActacttttttac atgcaagtgcagTCATGTGAcagcaacatatg	3' 3'	1156 1201
<i>Drosophila_grimshawii</i>	Dgri\GH19969	76	741		atggaaaaaaggTCATCTGActtggttttatac atgcaaatgcagTCATGTGAcagtaaacata	3' 3'	1134 1179

Paralogs: Vha36-2 (CG13167)

Species	Vha36-2 orthologs		5'exon	intron	exon3'	
<i>Drosophila_melanogaster</i>	Dmel\Vha36-2	73	525	75	597	101
<i>Drosophila_simulans</i>	Dsim\GD10848		525	53	558	
<i>Drosophila_sechellia</i>	Dsec\GM21350		525	53	558	
<i>Drosophila_yakuba</i>	Dyak\GE12423		525	55	594	
<i>Drosophila_erecta</i>	Dere\GG20264		525	63	621	
<i>Drosophila_biarmipes</i>	Dbia\Vha36-2		525	443	597	
<i>Drosophila_suzukii</i>	Dsuz\Vha36-2		525	333	660	
<i>Drosophila_takahashii</i>	Dtak\Vha36-2		525	440	594	
<i>Drosophila_eugracilis</i>	Deug\Vha36-2		525	63	558	
<i>Drosophila_elegans</i>	Dele\Vha36-2		525	1706	564	
<i>Drosophila_rhopaloea</i>	Drho\Vha36-2		525	284	555	
<i>Drosophila_ficusphila</i>	Dfic\Vha36-2		525	233	465	
<i>Drosophila_kikkawai</i>	Dkik\Vha36-2		531	64	441	
<i>Drosophila_bipectinata</i>	Dbip\Vha36-2		1059			
<i>Drosophila_ananassae</i>	Dana\GF12834		1047			
<i>Drosophila_pseudoobscura</i>	Dpse\GA12092		1020			
<i>Drosophila_persimilis</i>	Dper\GL10813		1020			
<i>Drosophila_miranda</i>	Dmir\Vha36-2		1020			
<i>Drosophila_willistoni</i>	Dwil\GK22115		1077			
<i>Drosophila_albomicans</i>	Dalb\Vha36-2		1002			
<i>Drosophila_mojavensis</i>	Dmoj\GI18533		975			
<i>Drosophila_virilis</i>	Dvir\GJ21402		999			

<i>Drosophila_grimshawi</i>	Dgri\GH22755		1023							
Paralogs: Vha36-3 (CG8310)										
Species	Vha36-3 orthologs	5'exon	intron	exon	intron	exon	intron	exon3'		
<i>Drosophila_melanogaster</i>	Dmel\Vha36-3	83	41	60	118	55	364	61	227	45
<i>Drosophila_simulans</i>	Dsim\Vha36-3		41	60	118	64	364	58	227	
<i>Drosophila_sechellia</i>	Dsec\Vha36-3		ND	ND	118	64	364	56	227	
<i>Drosophila_yakuba</i>	Dyak\Vha36-3		41	65	118	65	>266	ND	ND	
<i>Drosophila_erecta</i>	Dere\GG12609		41	72	118	61	364	68	227	
<i>Drosophila_biarmipes</i>	Dbia\Vha36-3		41	76	118	66	364	119	227	
<i>Drosophila_suzukii</i>	Dsuz\Vha36-3		41	68	118	64	364	147	227	
<i>Drosophila_takahashii</i>	Dtak\Vha36-3		41	63	118	58	364	299	230	
<i>Drosophila_eugracilis</i>	Deug\Vha36-3		41	59	118	56	364	52	227	
<i>Drosophila_elegans</i>	Dele\Vha36-3		41	58	118	56	364	492	227	
<i>Drosophila_rhopaloea</i>	Drho\Vha36-3		41	65	118	59	364	316	227	
<i>Drosophila_ficusphila</i>	Dfic\Vha36-3		41	62	118	56	364	59	227	
<i>Drosophila_kikkawai</i>	Dkik\Vha36-3		41	66	118	58	364	74	230	
<i>Drosophila_bipectinata</i>	Dbip\Vha36-3		41	53	118	62	364	61	227	
<i>Drosophila_ananassae</i>	Dana\GF21946		41	58	118	57	364	57	227	
<i>Drosophila_pseudoobscura</i>	Dpse\GA20975		41	59	118	54	364	58	227	
<i>Drosophila_persimilis</i>	Dper\GL14446		41	59	118	54	364	58	227	
<i>Drosophila_miranda</i>	Dmir\Vha36-3		41	59	118	54	364	58	227	
<i>Drosophila_willistoni</i>	Dwi\GK24913		41	59	118	72	364	83	230	
<i>Drosophila_albomicans</i>	Dalb\Vha36-3		41	68	118	89	364	69	230	
<i>Drosophila_mojavensis</i>	Dmoj\GI15892		41	78	118	85	364	57	230	
<i>Drosophila_virilis</i>	Dvir\GJ16639		41	74	118	63	364	105	230	
<i>Drosophila_grimshawi</i>	Dgri\GH12748		41	129	118	71	364	95	230	