

**Table S1** Characteristics of mitogenomes of 33 Tenebrionidae species.

Famliy	Subfamliy	Species	GenBank accession number	Genome Size (bp)
Tenebrionidae	Lagriinae	<i>Adelium</i> sp	NC_013554	16449
Tenebrionidae	Alphitobius	<i>Alphitobius diaperinus</i>	NC_049092	15511
Tenebrionidae	unclassified Tenebrioninae.	<i>Amarygmini</i> sp	MH789725	15942
Tenebrionidae	Pimeliinae	<i>Asbolus verrucosus</i>	NC_027256	15828
Tenebrionidae	Blaptinae	<i>Blaps rhynchoptera</i>	NC_047449	16149
Tenebrionidae	Lagriinae	<i>Cerogria popularis</i>	NC_061196	16175
Tenebrionidae	Blaptinae	<i>Gonocephalum</i> sp	NC_053250	15836
Tenebrionidae	Pimeliinae	<i>Machla setosa</i>	MZ342779	16081
Tenebrionidae	Stenochiinae	<i>Morphostenophanes sinicus</i>	MW853764	15662
Tenebrionidae	Stenochiinae	<i>Morphostenophanes yunnanus</i>	MZ298928	15690
Tenebrionidae	Tenebrioninae	<i>Nalassus laevioctostriatus</i>	KT876905	15529
Tenebrionidae	Blaptinae	<i>Opatrum sabulosum</i>	NC_057274	16079
Tenebrionidae	Pimeliinae	<i>Pelecyporus contortus</i>	MZ342780	16244
Tenebrionidae	Pimeliinae	<i>Pelecyporus foveolatus</i>	MZ342781	16218
Tenebrionidae	Pimeliinae	<i>Philolithus aegrotus</i>	MZ342784	16268
Tenebrionidae	Pimeliinae	<i>Philolithus</i> sp1	MZ342776	15927
Tenebrionidae	Pimeliinae	<i>Philolithus</i> sp2	MZ342777	15926
Tenebrionidae	Diaperinae	<i>Platydema</i> sp	JX412842	16028
Tenebrionidae	Stenochiinae	<i>Promethis valgipes</i>	NC_054362	15801
Tenebrionidae	Pimeliinae	<i>Stenomorpha consobrina</i>	MZ342785	16243
Tenebrionidae	Pimeliinae	<i>Stenomorpha obovata</i>	MZ342786	16223
Tenebrionidae	Stenochiinae	<i>Strongylium suspicax</i>	JX412780	12561

Tenebrionidae	Tenebrioninae	<i>Tenebrio molitor</i>	NC_024633	15785
Tenebrionidae	Tenebrioninae	<i>Tenebrio obscurus</i>	NC_037196	15771
Tenebrionidae	Tenebrionidae incertae sedis	<i>Tribolium audax</i>	NC_024600	15925
Tenebrionidae	Tenebrionidae incertae sedis	<i>Tribolium castaneum</i>	NC_003081	15881
Tenebrionidae	Tenebrionidae incertae sedis	<i>Tribolium confusum</i>	NC_026702	15813
Tenebrionidae	Tenebrioninae	<i>Uloma</i> sp	KT876915	15909
Tenebrionidae	Diaperinae	<i>Ulomoides dermestoides</i>	NC_025332	15434
Tenebrionidae	Tenebrioninae	<i>Zophobas atratus</i>	NC_041101	15494
<b>Tenebrionidae</b>	<b>Tenebrioninae</b>	<b><i>Melanesthes exilidentata</i></b>	<b>OQ_534869</b>	<b>15804</b>
<b>Tenebrionidae</b>	<b>Pimeliinae</b>	<b><i>Anatolica potanini</i></b>	<b>OQ_511732</b>	<b>15809</b>
<b>Tenebrionidae</b>	<b>Tenebrioninae</b>	<b><i>Myladina unguiculina</i></b>	<b>OQ_536315</b>	<b>15542</b>