

Table S1. Organization of the *I. anguis* mitochondrial genome

Gene	Position (bp)	Size (bp)	Direction	Intergenic Nucleotides (IGN)	Anti- or Start/ Stop Codons	A+T%
<i>trnIle</i> (I)	F	1-66	66	-	GAT	62.12
<i>trnGln</i> (Q)	R	64-132	69	-3	TTG	69.57
<i>trnMet</i> (M)	F	133-201	69	0	CAT	62.32
<i>nad2</i>	F	202-1236	1035	0	ATG/TAA	68.02
<i>trnTrp</i> (W)	F	1235-1302	68	-2	TCA	70.59
<i>trnCys</i> (C)	R	1295-1362	68	-8	GCA	69.12
<i>trnTyr</i> (Y)	R	1365-1430	66	2	GTA	62.12
<i>cox1</i>	F	1423-2967	1545	-8	ATT/TAA	60.26
<i>trnLeu2</i> (UUR)	F	2963-3028	66	-5	TAA	65.15
<i>cox2</i>	F	3035-3722	688	6	ATG/T	61.92
<i>trnLys</i> (K)	F	3723-3792	70	0	CTT	62.86
<i>trnAsp</i> (D)	F	3793-3859	67	0	GTC	79.10
<i>atp8</i>	F	3860-4018	159	0	ATT/TAA	69.81
<i>atp6</i>	F	4012-4689	678	-7	ATG/TAA	64.16
<i>cox3</i>	F	4689-5477	789	-1	ATG/TAA	60.20
<i>trnGly</i> (G)	F	5479-5545	67	1	TCC	73.13
<i>nad3</i>	F	5552-5899	348	6	ATA/TAG	62.93
<i>trnAla</i> (A)	F	5898-5961	64	-2	TGC	67.19
<i>trnArg</i> (R)	F	5962-6025	64	0	TCG	56.25
<i>trnAsn</i> (N)	F	6026-6092	67	0	GTT	73.13
<i>trnSer1</i> (AGN)	F	6093-6160	68	0	GCT	64.71
<i>trnGlu</i> (E)	F	6161-6225	65	0	TTC	86.15
<i>trnPhe</i> (F)	R	6224-6288	65	-2	GAA	67.69
<i>nad5</i>	R	6289-8020	1732	0	GTG/T	67.67
<i>trnHis</i> (H)	R	8021-8088	68	0	GTG	64.71
<i>nad4</i>	R	8089-9429	1341	0	ATG/TAG	67.79
<i>nad4l</i>	R	9423-9719	297	-7	ATG/TAA	73.40
<i>trnThr</i> (T)	F	9722-9786	65	2	TGT	81.54
<i>trnPro</i> (P)	R	9787-9852	66	0	TGG	69.70
<i>nad6</i>	F	9854-10378	525	1	ATT/TAA	66.29
<i>Cytb</i>	F	10378-11514	1137	-1	ATG/TAG	61.30
<i>trnSer2</i> (UCN)	F	11513-11582	70	-2	TGA	74.29
<i>nad1</i>	R	11599-12543	945	16	ATA/TAG	65.93
<i>trnLeu1</i> (CUN)	R	12551-12616	66	7	TAG	71.21
<i>rrnL</i>	R	12616-13948	1333	-1	-	72.47
<i>trnVal</i> (V)	R	13946-14016	71	-3	TAC	66.20
<i>rrnS</i>	R	14016-14807	792	-1	-	69.07
CR		14808-16200		0	-	66.62

Table S2. A + T content of different components or positions among mitogenome of the family Capniidae

Species Name	Full genome	PCGs	First position	Second position	Third position
<i>Apterooperla tikumana</i>	66.51	65.73	65.42	66.11	65.68
<i>Mesocapnia arizonensis</i>	68.49	67.54	67.85	65.23	69.54
<i>Mesocapnia daxingana</i>	68.34	66.57	66.46	64.59	68.65
<i>Zwicknia bifrons</i>	68.89	68.03	67.22	69.57	67.29
<i>Capnia zijinshana</i>	68.47	68.27	65.41	66.17	73.24
<i>Isocapnia anguis</i>	66.19	64.78	63.96	65.08	65.27

Table S3. A + T content of different PCGs among mitogenome of the family Capniidae

Species Name	<i>atp6</i>	<i>atp8</i>	<i>cox1</i>	<i>cox2</i>	<i>cox3</i>	<i>cytb</i>	<i>nd1</i>	<i>nd2</i>	<i>nd3</i>	<i>nd4</i>	<i>nd4l</i>	<i>nd5</i>	<i>nd6</i>
<i>Apterooperla tikumana</i>	63.42	67.92	62.14	65.26	60.71	62.08	65.46	68.02	68.22	68.01	72.03	68.21	72
<i>Mesocapnia arizonensis</i>	66.37	69.81	63.7	67.15	62.99	64.38	67.51	69.28	68.36	69.72	74.07	70.38	71.24
<i>Mesocapnia daxingana</i>	67.11	68.55	61.69	66.28	61.6	62.53	67.51	68.7	69.21	68.83	73.74	69.4	69.33
<i>Zwicknia bifrons</i>	68.88	69.81	64.94	65.99	63.62	65.00	68.98	69.57	69.39	69.95	75.82	69.4	72.19
<i>Capnia zijinshana</i>	68.29	69.81	64.3	65.55	63.5	66.49	69.93	70.02	70.34	69.95	74.07	70.21	73.14
<i>Isocapnia anguis</i>	64.16	69.81	60.26	61.92	60.2	61.3	65.93	68.02	62.93	67.79	73.4	67.67	66.29
Average	66.37	69.28	62.83	65.35	62.10	63.63	67.55	68.93	68.07	69.04	73.85	69.21	70.69



Figure S1. (A) *I. anguis* adult habitus dorsal view, (B) head and thorax dorsal view, (C) terminalia dorsal view.