Table S2 The comparative analysis of intergenic nucleotide (IN) regions among the mitogenomes of different *Garra* species. The IN sites of *G. lissorhynchus* are shown in Table 2.

Gene	*G. manipurensis*			*G. congoensis*			*G. dengba*			*G. flavatra*		
	Start	End	IN	Start	End	IN	Start	End	IN	Start	End	IN
tRNA-Phe (F)	1	68	-1	1	69	0	1	69	0	1	69	0
12S rRNA	68	1009	0	70	1021	0	70	1021	-1	70	1019	0
tRNA-Val (V)	1010	1081	18	1022	1093	-2	1021	1092	0	1020	1090	0
16S rRNA	1100	2749	23	1092	2776	0	1093	2780	0	1091	2809	0
tRNA-Leu (L2)	2773	2848	1	2777	2852	1	2781	2856	0	2810	2884	1
ND1	2850	3824	3	2854	3831	0	2857	3831	3	2886	3863	0
tRNA-Ile (I)	3828	3900	-3	3832	3903	-1	3835	3906	-2	3864	3935	-2
tRNA-Gln (Q)	3898	3969	0	3903	3972	0	3905	3975	1	3934	4004	1
tRNA-Met (M)	3970	4039	0	3973	4041	0	3977	4045	0	4006	4074	0
ND2	4040	5084	0	4042	5086	0	4046	5090	0	4075	5119	0
tRNA-Trp (W)	5085	5155	0	5087	5157	2	5091	5161	2	5120	5190	1
tRNA-Ala (A)	5156	5225	0	5160	5228	1	5164	5232	1	5192	5260	1
tRNA-Asn (N)	5226	5299	0	5230	5302	0	5234	5306	0	5262	5334	0
O_L	5300	5327	0	5303	5334	0	5307	5340	0	5335	5366	0
tRNA-Cys (C)	5328	5394	0	5335	5401	1	5341	5406	1	5367	5434	1
tRNA-Tyr (Y)	5395	5462	1	5403	5473	0	5408	5478	1	5436	5504	1
COI	5464	7010	0	5474	7024	0	5480	7030	0	5506	7052	0
tRNA-Ser (S2)	7011	7081	2	7025	7095	3	7031	7101	3	7053	7123	3
tRNA-Asp (D)	7084	7154	8	7099	7168	12	7105	7174	13	7127	7196	7
COII	7163	7853	-1	7181	7871	0	7188	7878	0	7204	7894	0
tRNA-Lys (K)	7853	7931	1	7872	7946	2	7879	7954	1	7895	7971	1
ATP8	7933	8097	-7	7949	8113	-7	7956	8120	-7	7973	8137	-7
ATP6	8091	8774	-1	8107	8789	0	8114	8797	-1	8131	8813	0
COIII	8774	9558	-1	8790	9574	0	8797	9581	0	8814	9598	0
tRNA-Gly (G)	9558	9629	0	9575	9646	0	9582	9653	0	9599	9670	0
ND3	9630	9978	-1	9647	9995	0	9654	10002	0	9671	10019	0
tRNA-Arg (R)	9978	10047	0	9996	10065	0	10003	10072	0	10020	10090	0
ND4L	10048	10344	-7	10066	10362	-7	10073	10369	-7	10091	10387	-7
ND4	10338	11718	-1	10356	11736	0	10363	11743	0	10381	11761	0
tRNA-His (H)	11718	11787	-1	11737	11804	1	11744	11812	0	11762	11830	0
tRNA-Ser (S1)	11787	11854	0	11806	11874	1	11813	11881	1	11831	11899	1
tRNA-Leu (L1)	11855	11928	3	11876	11948	3	11883	11955	3	11901	11973	1
ND5	11932	13752	-4	11952	13775	-4	11959	13782	-4	11975	13792	-5
ND6	13749	14270	-1	13772	14293	1	13779	14300	0	13788	14309	0
tRNA-Glu (E)	14270	14339	3	14295	14362	9	14301	14369	4	14310	14378	5
Cytb	14343	15479	0	14372	15508	4	14374	15514	0	14384	15520	3
tRNA-Thr (T)	15480	15551	0	15513	15585	0	15515	15586	0	15524	15595	0

Control region	15552	16572	0	15586	16443	0	15587	16524	0	15596	16442	0
tRNA-Pro (P)	16573	16643	0	16444	16513	0	16525	16594	0	16443	16512	0
Rep_Region	16644	16776					16595	16876				
Gene	***G. kempi***			***G. lamta***			***G. motuoensis***			***G. orientalis***		
	Start	End	IN	Start	End	IN	Start	End	IN	Start	End	IN
tRNA-Phe (F)	1	69	0	1	69	0	1	69	0	1	68	0
12S rRNA	70	1019	0	70	1020	0	70	1022	0	69	1019	0
tRNA-Val (V)	1020	1091	0	1021	1092	0	1023	1094	0	1020	1091	0
16S rRNA	1092	2778	0	1093	2775	0	1095	2780	0	1092	2773	0
tRNA-Leu (L2)	2779	2854	1	2776	2851	1	2781	2856	0	2774	2849	1
ND1	2856	3830	4	2853	3827	4	2857	3831	5	2851	3825	4
tRNA-Ile (I)	3835	3906	-2	3832	3903	-2	3837	3908	-2	3830	3901	-2
tRNA-Gln (Q)	3905	3975	1	3902	3972	1	3907	3977	1	3900	3970	1
tRNA-Met (M)	3977	4045	0	3974	4042	0	3979	4047	0	3972	4040	0
ND2	4046	5090	0	4043	5087	0	4048	5092	0	4041	5085	0
tRNA-Trp (W)	5091	5161	2	5088	5158	2	5093	5163	1	5086	5156	1
tRNA-Ala (A)	5164	5231	1	5161	5229	1	5165	5233	1	5158	5226	1
tRNA-Asn (N)	5233	5305	0	5231	5303	0	5235	5307	0	5228	5300	0
O_L	5306	5338	0	5304	5337	0	5308	5343	-3	5301	5335	0
tRNA-Cys (C)	5339	5405	1	5338	5404	1	5341	5407	1	5336	5402	1
tRNA-Tyr (Y)	5407	5477	1	5406	5476	1	5409	5479	1	5404	5474	1
COI	5479	7029	0	5478	7028	0	5481	7031	0	5476	7026	0
tRNA-Ser (S2)	7030	7100	3	7029	7099	3	7032	7102	3	7027	7097	3
tRNA-Asp (D)	7104	7174	12	7103	7172	13	7106	7184	3	7101	7170	12
COII	7187	7877	0	7186	7876	0	7188	7878	0	7183	7873	0
tRNA-Lys (K)	7878	7953	1	7877	7952	1	7879	7954	1	7874	7949	0
ATP8	7955	8119	-7	7954	8118	-7	7956	8120	-7	7950	8114	-7
ATP6	8113	8796	-1	8112	8794	0	8114	8797	-1	8108	8790	0
COIII	8796	9580	0	8795	9579	0	8797	9581	0	8791	9575	0
tRNA-Gly (G)	9581	9652	0	9580	9651	0	9582	9653	0	9576	9647	0
ND3	9653	10001	0	9652	10000	0	9654	10002	0	9648	9996	0
tRNA-Arg (R)	10002	10071	0	10001	10070	0	10003	10072	0	9997	10066	0
ND4L	10072	10368	-7	10071	10367	-7	10073	10369	-7	10067	10363	-7
ND4	10362	11742	0	10361	11741	0	10363	11743	0	10357	11737	0
tRNA-His (H)	11743	11811	0	11742	11810	0	11744	11812	-1	11738	11806	0
tRNA-Ser (S1)	11812	11879	1	11811	11879	1	11812	11880	2	11807	11874	1
tRNA-Leu (L1)	11881	11953	3	11881	11953	3	11883	11955	3	11876	11948	3
ND5	11957	13780	-4	11957	13777	-4	11959	13782	-4	11952	13775	-4
ND6	13777	14298	0	13774	14295	0	13779	14300	0	13772	14293	0
tRNA-Glu (E)	14299	14367	5	14296	14364	5	14301	14369	5	14294	14362	5
Cytb	14373	15509	4	14370	15510	0	14375	15511	4	14368	15504	4
tRNA-Thr (T)	15514	15585	0	15511	15582	0	15516	15587	0	15509	15580	0
Control region	15586	16499	0	15583	16509	0	15588	16463	0	15581	16427	0

tRNA-Pro (P)	16500	16568	0	16510	16579	0	16464	16533	0	16428	16497	0
Rep_Region	16569	17104		16580	16854		16534	16806				
Gene	***G. poecilura***			***G. qiaojiensis***			***G. rufa***			***G. salweenica***		
	Start	End	IN	Start	End	IN	Start	End	IN	Start	End	IN
tRNA-Phe (F)	1	69	0	1	69	0	1	69	0	1	68	0
12S rRNA	70	1019	0	70	1022	0	70	1022	0	69	1019	0
tRNA-Val (V)	1020	1090	0	1023	1094	0	1023	1094	0	1020	1091	0
16S rRNA	1091	2783	0	1095	2781	0	1095	2776	0	1092	2775	0
tRNA-Leu (L2)	2784	2858	1	2782	2857	1	2777	2852	1	2776	2851	1
ND1	2860	3837	0	2859	3833	4	2854	3828	4	2853	3827	4
tRNA-Ile (I)	3838	3909	-2	3838	3909	-2	3833	3904	-2	3832	3903	-2
tRNA-Gln (Q)	3908	3978	1	3908	3978	1	3903	3973	0	3902	3972	1
tRNA-Met (M)	3980	4048	0	3980	4048	0	3974	4042	0	3974	4042	1
ND2	4049	5093	0	4049	5093	0	4043	5087	0	4044	5088	0
tRNA-Trp (W)	5094	5164	1	5094	5164	1	5088	5158	1	5089	5159	1
tRNA-Ala (A)	5166	5234	1	5166	5234	1	5160	5228	1	5161	5229	1
tRNA-Asn (N)	5236	5308	0	5236	5308	0	5230	5302	0	5231	5303	0
O_L	5309	5340	0	5309	5344	-3	5303	5335	0	5304	5340	-3
tRNA-Cys (C)	5341	5409	1	5342	5408	1	5336	5402	1	5338	5404	1
tRNA-Tyr (Y)	5411	5479	1	5410	5480	1	5404	5474	1	5406	5476	1
COI	5481	7027	0	5482	7032	0	5476	7026	0	5478	7028	0
tRNA-Ser (S2)	7028	7098	3	7033	7103	3	7027	7097	3	7029	7099	3
tRNA-Asp (D)	7102	7171	12	7107	7185	3	7101	7170	12	7103	7172	12
COII	7184	7874	0	7189	7879	0	7183	7873	0	7185	7875	0
tRNA-Lys (K)	7875	7951	1	7880	7955	1	7874	7949	1	7876	7951	1
ATP8	7953	8117	-7	7957	8121	-7	7951	8115	-7	7953	8117	-7
ATP6	8111	8793	0	8115	8798	-1	8109	8791	0	8111	8794	-1
COIII	8794	9578	0	8798	9582	0	8792	9576	0	8794	9578	0
tRNA-Gly (G)	9579	9650	0	9583	9654	0	9577	9648	0	9579	9650	0
ND3	9651	9999	0	9655	10003	0	9649	9997	0	9651	9999	0
tRNA-Arg (R)	10000	10070	0	10004	10073	0	9998	10067	0	10000	10069	0
ND4L	10071	10367	-7	10074	10370	-7	10068	10364	-7	10070	10366	-7
ND4	10361	11741	0	10364	11744	0	10358	11738	0	10360	11740	0
tRNA-His (H)	11742	11810	0	11745	11813	-1	11739	11807	0	11741	11809	-1
tRNA-Ser (S1)	11811	11879	-1	11813	11881	2	11808	11875	1	11809	11876	2
tRNA-Leu (L1)	11879	11951	1	11884	11956	3	11877	11949	3	11879	11951	3
ND5	11953	13770	-5	11960	13783	-4	11953	13776	-4	11955	13781	-4
ND6	13766	14287	0	13780	14301	0	13773	14294	0	13778	14299	0
tRNA-Glu (E)	14288	14356	3	14302	14370	5	14295	14363	8	14300	14368	5
Cytb	14360	15496	3	14376	15512	4	14372	15508	4	14374	15510	4
tRNA-Thr (T)	15500	15570	0	15517	15588	0	15513	15585	0	15515	15587	60
Control region	15571	16680	0	15589	16493	0	15586	16440	0	15648	16475	0
tRNA-Pro (P)	16681	16749	0	16494	16563	14	16441	16510	0	16476	16545	12

Rep_Region				16578	17095					16558	16960	
Gene	***G. spilota***			***G. tengchongensis***			***G. tibetana***			***G. yajiangensis***		
	Start	End	IN	Start	End	IN	Start	End	IN	Start	End	IN
tRNA-Phe (F)	1	69	0	1	69	0	1	68	0	1	69	0
12S rRNA	70	1021	0	70	1020	0	69	1019	0	70	1019	0
tRNA-Val (V)	1022	1092	0	1021	1092	0	1020	1091	0	1020	1091	0
16S rRNA	1093	2775	0	1093	2785	-3	1092	2779	0	1092	2778	0
tRNA-Leu (L2)	2776	2851	1	2783	2858	0	2780	2855	1	2779	2854	1
ND1	2853	3827	4	2859	3833	4	2857	3831	4	2856	3830	4
tRNA-Ile (I)	3832	3903	-2	3838	3909	-2	3836	3907	-2	3835	3906	-2
tRNA-Gln (Q)	3902	3972	1	3908	3978	1	3906	3976	1	3905	3975	1
tRNA-Met (M)	3974	4042	0	3980	4048	0	3978	4046	0	3977	4045	0
ND2	4043	5087	0	4049	5093	0	4047	5091	0	4046	5090	0
tRNA-Trp (W)	5088	5158	2	5094	5164	2	5092	5162	2	5091	5161	2
tRNA-Ala (A)	5161	5229	1	5167	5235	2	5165	5233	1	5164	5231	1
tRNA-Asn (N)	5231	5303	-2	5238	5310	0	5235	5307	0	5233	5305	0
O_L	5302	5337	0	5311	5347	-5	5308	5341	0	5306	5338	0
tRNA-Cys (C)	5338	5405	1	5343	5409	1	5342	5409	1	5339	5405	1
tRNA-Tyr (Y)	5407	5477	1	5411	5481	0	5411	5481	1	5407	5474	4
COI	5479	7029	0	5482	7032	0	5483	7033	1	5479	7029	0
tRNA-Ser (S2)	7030	7100	3	7033	7103	3	7035	7103	4	7030	7100	3
tRNA-Asp (D)	7104	7173	13	7107	7176	13	7108	7177	12	7104	7174	12
COII	7187	7877	0	7190	7880	0	7190	7880	0	7187	7877	0
tRNA-Lys (K)	7878	7953	1	7881	7956	1	7881	7956	1	7878	7953	1
ATP8	7955	8119	-7	7958	8122	-7	7958	8122	-7	7955	8119	-7
ATP6	8113	8795	0	8116	8799	-1	8116	8799	-1	8113	8796	-1
COIII	8796	9580	0	8799	9583	0	8799	9583	0	8796	9580	0
tRNA-Gly (G)	9581	9652	0	9584	9655	-1	9584	9654	0	9581	9652	0
ND3	9653	10001	0	9655	10003	0	9655	10003	0	9653	10001	0
tRNA-Arg (R)	10002	10071	0	10004	10073	0	10004	10073	0	10002	10071	0
ND4L	10072	10368	-7	10074	10370	-7	10074	10370	-7	10072	10368	-7
ND4	10362	11742	0	10364	11744	0	10364	11744	0	10362	11742	0
tRNA-His (H)	11743	11811	0	11745	11813	-1	11745	11814	0	11743	11811	0
tRNA-Ser (S1)	11812	11880	0	11813	11881	2	11815	11883	1	11812	11879	1
tRNA-Leu (L1)	11881	11954	4	11884	11956	3	11885	11957	3	11881	11953	3
ND5	11959	13782	-4	11960	13791	-12	11961	13784	-4	11957	13780	-4
ND6	13779	14300	0	13780	14301	0	13781	14302	0	13777	14298	0
tRNA-Glu (E)	14301	14369	5	14302	14370	4	14303	14371	5	14299	14367	5
Cytb	14375	15515	0	14375	15511	4	14377	15517	0	14373	15509	4
tRNA-Thr (T)	15516	15587	0	15516	15588	62	15518	15589	0	15514	15585	0
Control region	15588	16451	0	15651	16517	19	15590	16490	0	15586	16499	0
tRNA-Pro (P)	16452	16521	0	16537	16606	0	16491	16560	0	16500	16568	0
Rep_Region							16561	16861		16569	16835	