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APPENDICES

APPENDIX A

I. Genotypes at 5 microsatellite loci of the G8 sample of *H. asinina*

Samples	Loci					Remark
	CUHas2	*CUHas3*	*CUHas8*	*Haμ2J*	*Haμ13*	
G001	327/327	160/175	172/199	230/234	126/126	4-month-old
G002	324/324	164/167	172/176	230/234	131/131	4-month-old
G003	340/352	167/181	172/172	230/234	136/136	4-month-old
G004	352/352	167/173	204/208	230/230	124/131	4-month-old
G005	-	175/181	172/199	230/234	126/126	4-month-old
G006	327/327	160/167	172/204	230/234	131/131	4-month-old
G007	324/324	175/181	172/204	230/234	126/126	4-month-old
G008	340/340	167/179	159/204	230/234	131/131	4-month-old
G009	324/324	175/181	172/199	230/230	126/126	4-month-old
G010	327/327	160/171	192/199	230/234	128/128	4-month-old
G011	327/327	155/165	172/220	230/234	128/128	4-month-old
G012	327/352	165/165	172/172	230/234	128/128	4-month-old
G013	346/352	165/173	172/192	230/230	126/126	4-month-old
G014	324/324	164/167	172/199	230/230	126/126	4-month-old
G015	324/352	171/181	172/220	230/234	128/128	4-month-old
G016	327/327	160/175	172/199	230/234	131/131	4-month-old
G017	336/336	164/167	183/197	230/230	124/124	4-month-old
G018	327/346	160/160	192/208	230/234	126/126	4-month-old
G019	327/327	175/181	172/199	230/234	126/126	4-month-old
G020	346/346	167/173	172/192	230/230	126/126	4-month-old
G021	327/336	160/167	183/183	230/234	133/133	4-month-old
G022	324/324	175/181	172/204	230/234	126/131	4-month-old
G023	-	167/173	192/199	230/230	-	4-month-old
G024	327/352	164/167	172/172	230/230	128/128	4-month-old
G025	327/327	155/171	172/172	230/234	128/133	4-month-old
G026	350/350	167/173	172/208	230/230	133/133	4-month-old
G027	324/324	160/167	172/199	230/234	126/126	4-month-old

Samples	Loci					Remark
	CUHas2	*CUHas3*	*CUHas8*	*Haμ2J*	*Haμ13*	
G028	327/352	165/173	192/216	230/234	128/128	4-month-old
G029	352/352	165/173	172/192	230/230	133/133	4-month-old
G030	324/324	167/181	172/199	228/234	126/133	4-month-old
G031	327/327	160/175	192/204	230/234	126/131	4-month-old
G032	324/324	175/181	172/204	230/234	126/126	4-month-old
G033	327/352	167/173	172/192	230/230	128/128	4-month-old
G034	327/327	155/171	172/216	230/234	128/128	4-month-old
G035	352/352	167/173	204/208	230/230	126/126	4-month-old
G036	352/352	167/173	172/192	230/234	128/128	4-month-old
G037	324/324	160/175	172/204	230/234	126/126	4-month-old
G038	310/310	160/175	208/208	230/234	131/133	4-month-old
G039	340/340	164/167	204/216	230/234	126/126	4-month-old
G040	324/324	160/175	172/204	230/234	126/126	4-month-old
G041	327/327	164/171	172/192	230/234	126/126	4-month-old
G042	327/327	155/164	172/220	230/234	128/133	4-month-old
G043	327/327	155/167	176/204	230/234	126/131	4-month-old
G044	327/327	164/171	172/204	230/234	126/131	4-month-old
G045	327/327	167/173	204/208	230/230	126/131	4-month-old
G046	327/327	167/173	192/216	230/230	128/128	4-month-old
G047	346/352	164/167	172/172	230/230	126/131	4-month-old
G048	324/324	164/167	172/199	230/234	126/131	4-month-old
G049	327/350	155/167	172/172	230/234	128/128	4-month-old
G050	340/340	171/181	159/199	230/234	126/126	8-month-old
G051	324/324	164/179	172/192	234/234	126/131	8 month old
G052	327/327	160/175	192/204	230/234	126/126	8-month-old
G053	327/327	175/181	192/199	230/234	126/126	8-month-old
G054	324/324	175/181	172/199	230/234	126/131	8-month-old
G055	340/340	171/181	199/216	230/234	126/131	8-month-old
G056	327/327	155/175	176/199	230/230	126/133	8-month-old
G057	327/327	155/175	176/204	230/230	126/131	8-month-old
G058	327/327	175/181	192/199	230/234	126/126	8-month-old

Samples	Loci					Remark
	CUHas2	*CUHas3*	*CUHas8*	*Haμ2J*	*Haμ13*	
G059	327/327	160/175	192/204	230/234	126/131	8-month-old
G060	327/327	155/167	176/204	230/230	126/126	8-month-old
G061	324/324	167/181	176/199	230/230	133/133	8-month-old
G062	327/327	167/181	172/204	230/234	126/126	8-month-old
G063	340/340	160/164	208/220	234/234	128/128	8-month-old
G064	327/352	155/164	176/176	230/230	128/128	8-month-old
G065	327/327	175/181	172/199	230/234	126/126	8-month-old
G066	327/327	167/181	192/199	230/234	126/126	8-month-old
G067	324/324	175/181	176/199	230/230	131131	8-month-old
G068	324/324	167/181	192/199	230/234	126/126	8-month-old
G069	324/324	175/181	192/204	230/234	126/126	8-month-old
G070	327/327	167/173	192/204	230/230	126131	8-month-old
G071	324/350	160/167	172/192	234/234	128/128	8-month-old
G072	327/327	155/175	176/199	230/230	133/133	8-month-old
G073	310/310	160/167	172/204	230/234	136/136	8-month-old
G074	327/346	164/179	172/208	234/234	126/126	8-month-old
G075	327/327	160/167	172/199	230/234	126/126	8-month-old
G076	324/324	167/183	172/176	234/234	133/133	8-month-old
G077	327/327	171/173	192/220	230/234	128/128	8-month-old
G078	324/324	155/165	176/220	230/230	126131	8-month-old
G079	324/324	164/171	172/172	230/230	128/128	8-month-old
G080	336/352	167/179	172/172	230/230	128/128	8-month-old
G081	327/327	160/167	192/204	230/234	126/126	8-month-old
G082	324/324	160/167	172/204	230/234	126/126	8-month-old
G083	346/352	155/173	172/199	230/230	133/133	8-month-old
G084	327/327	160/167	192/204	230/234	126/126	8-month-old
G085	327/327	155/167	172/204	230/234	126/126	8-month-old
G086	324/324	155/165	172/176	230/234	131/133	8-month-old
G087	310/310	160/167	172/204	230/234	126/136	8-month-old
G088	324/324	165/181	172/192	234/234	131/133	8-month-old
G089	327/327	164/181	172/199	234/234	131/133	8-month-old

Samples	Loci					Remark
	CUHas2	*CUHas3*	*CUHas8*	*Haμ2J*	*Haμ13*	
G090	310/310	155/167	172/220	234/234	136/136	8-month-old
G091	310/310	162/183	172/199	230/230	126/131	8-month-old
G092	324/350	165/181	172/220	230/234	131/136	8-month-old
G093	324/324	160/167	172/172	230/234	126/136	8-month-old
G094	336/352	164/171	172/199	234/234	128/128	8-month-old
G095	327/327	165/181	176/216	230/230	128/133	8-month-old
G096	346/352	155/173	172/192	230/234	126/126	8-month-old
G097	327/327	175/181	172/204	230/234	133/133	8-month-old
G098	327/327	175/181	192/204	230/234	131/131	8-month-old
G099	324/324	164/181	172/192	230/234	128/128	8-month-old
G100	340/350	155/165	176/208	230/234	126/133	8-month-old
G101	324/324	160/167	192/199	230/234	126/126	8-month-old
G102	324/352	165/181	172/172	230/234	128/128	8-month-old

II. Genotypes at 5 microsatellite loci of the hatchery B sample of *H. asinina*

Samples	Loci					Weight
	CUHas2	*CUHas3*	*CUHas8*	*Haμ2J*	*Haμ13*	
BL01	340/340	155/179	159/199	234/234	126/126	15.14
BL02	-	173/175	192/204	230/230	126/126	12.36
BL03	324/340	162/179	172/199	230/234	136/136	12.09
BL04	324/340	165/173	159/199	230/234	124/131	11.81
BL05	336/336	165/179	159/197	230/234	133/133	12.92
BL06	324/324	162/165	192/199	234/234	124/131	15.14
BL07	324/324	167/181	172/176	230/234	133/133	10.84
BL08	336/336	155/165	159/172	230/230	136/136	11.39
BL09	324/324	155/165	176/220	230/230	131/131	10.97
BL10	327/327	162/162	172/199	230/234	136/136	12.92
BL11	336/336	165/173	197/199	230/230	131/131	11.25
BL12	352/352	175/181	172/199	230/230	136/136	11.81
BL13	352/352	173/175	192/199	230/230	124/131	10.97
BL14	352/352	165/181	199/220	230/234	133/133	11.95
BL15	324/324	155/165	172/199	234/234	133/133	10.84
BL16	352/352	162/183	216/220	230/234	126/131	10.97
BL17	324/324	162/167	192/199	230/234	131/131	10.97
BL18	327/327	162/171	192/192	234/234	124/124	11.53
BL19	327/327	165/181	172/199	230/234	126/126	12.22
BL20	324/324	171/181	172/172	234/234	128/128	11.95
BL21	340/340	164/167	192/192	234/234	133/133	11.81
BL22	324/324	165/181	192/220	234/234	131/131	10.84
BL23	352/352	164/175	172/204	230/234	126/126	13.34
BL24	324/324	164/175	172/204	230/234	126/126	11.25
BL25	336/336	160/173	172/172	234/234	131/131	10.84
BL26	340/340	164/171	159/172	234/234	128/131	10.84
BL27	324/350	164/167	172/172	230/234	126/126	11.95
BL28	336/336	162/181	159/192	230/230	133/133	10.97
BL29	324/324	164/173	159/199	230/234	131/131	12.78
BL30	352/352	160/173	172/172	230/234	136/136	11.53

Samples	Loci					Weight
	CUHas2	*CUHas3*	*CUHas8*	*Haμ2J*	*Haμ13*	
BL31	310/336	160/160	172/172	234/234	124/131	17.78
BL32	324/324	160/179	172/172	230/234	124/124	11.81
BL33	336/336	165/181	159/172	230/230	124/131	13.34
BL34	324/324	155/165	172/204	230/230	124/131	10.97
BL35	324/340	164/181	176/199	230/230	128/128	11.67
BL36	350/350	167/181	172/199	230/234	124/131	12.36
BL37	327/327	175/181	172/204	230/234	124/131	12.36
BL38	324/324	175/181	172/199	230/234	124/131	12.09
BL39	310/336	155/162	159/192	230/234	136/136	14.73
BL40	327/340	160/179	172/192	234/234	124/131	12.92
BM01	310/327	167/175	159/183	234/234	133/136	6.81
BM02	310/310	173/181	199/216	230/234	131/131	7.22
BM03	324/324	167/167	172/199	230/234	136/136	7.36
BM04	310/310	165/181	172/199	228/228	133/133	7.22
BM05	336/350	164/179	197/197	230/234	128/128	7.64
BM06	336/336	165/181	172/208	230/234	131/131	6.95
BM07	327/327	171/181	172/192	230/234	128/128	7.64
BM08	324/340	155/173	172/172	230/234	131/131	7.36
BM09	310/310	164/164	199/216	230/234	131/131	7.08
BM10	336/336	164/167	172/216	230/234	124/126	7.92
BM11	327/327	164/167	172/199	230/236	124/126	7.78
BM12	336/336	164/169	159/199	230/230	131/136	7.08
BM13	340/350	155/173	159/159	230/234	124/133	7.08
BM14	350/350	164/167	172/172	230/234	133/133	7.64
BM15	350/350	164/171	172/199	230/234	124/128	7.78
BM16	340/340	173/175	192/204	230/230	126/126	7.08
BM17	310/327	173/181	197/199	230/230	126/126	7.78
BM18	310/310	160/164	172/172	234/234	128/136	6.67
BM19	327/327	160/164	172/216	234/234	131/136	7.36
BM20	350/350	167/181	192/216	234/234	126/128	7.50
BM21	327/327	155/162	192/199	228/228	124/126	7.78

Samples	Loci					Weight
	CUHas2	*CUHas3*	*CUHas8*	*Haμ2J*	*Haμ13*	
BM22	336/350	167/171	176/199	234/234	124/126	7.36
BM23	310/310	164/181	172/199	228/234	133/133	7.08
BM24	327/327	165/181	172/208	234/234	133/133	7.22
BM25	350/350	162/164	172/172	228/234	136/136	7.50
BM26	327/340	155/165	172/176	230/234	133/133	7.78
BM27	340/350	171/181	172/176	230/234	131/131	6.67
BM28	346/350	171/173	172/172	234/234	126/128	7.36
BM29	340/340	162/162	172/208	230/234	128/128	7.78
BM30	340/340	165/165	172/208	234/234	126/126	7.78
BM31	350/350	171/179	159/172	234/234	131/133	7.78
BM32	336/350	165/171	159/172	230/230	128/131	6.53
BM33	327/327	165/181	172/172	230/230	133/133	7.36
BM34	324/324	162/175	172/172	230/234	133/133	7.78
BM35	324/324	155/167	172/172	230/230	128/128	6.81
BM36	336/336	165/175	172/199	230/234	131/131	7.78
BM37	310/336	165/181	172/208	230/234	131/131	7.36
BM38	310/336	175/175	172/204	230/234	131/136	7.64
BM39	336/350	165/167	172/183	230/234	133/136	7.08
BM40	327/336	155/165	172/199	230/234	131/136	7.50
BS01	310/310	165/167	172/192	230/230	128/131	4.58
BS02	350/350	165/179	159/192	234/234	128/128	4.03
BS03	-	173/181	172/199	230/234	128/131	4.58
BS04	327/327	165/181	172/172	230/234	128/128	4.31
BS05	336/336	179/181	172/199	230/234	131/131	3.61
BS06	310/316	171/181	172/172	230/234	136/136	2.50
BS07	336/336	173/173	172/192	230/230	131/131	4.31
BS08	336/350	164/173	199/199	230/234	133/133	4.03
BS09	336/350	167/173	172/192	230/230	131/131	4.31
BS10	324/336	160/167	172/172	230/234	131/131	4.58
BS11	324/324	171/181	192/199	230/234	128/128	3.20
BS12	324/324	160/164	172/199	230/230	128/131	4.31

Samples	Loci					Weight
	CUHas2	*CUHas3*	*CUHas8*	*Haμ2J*	*Haμ13*	
BS13	316/316	164/164	199/220	230/234	128/136	4.58
BS14	310/327	164/164	172/172	234/234	128/136	4.03
BS15	324/324	171/181	172/172	228/234	128/131	2.92
BS16	336/336	164/175	172/204	230/230	126/126	4.17
BS17	340/340	164/173	199/208	230/230	128/128	4.03
BS18	327/336	175/181	159/199	230/234	131/133	2.78
BS19	316/336	164/164	172/199	234/234	126/133	4.03
BS20	352/352	171/181	172/199	230/230	131/131	4.45
BS21	310/316	164/171	172/199	234/234	133/136	4.31
BS22	327/336	164/171	172/183	230/234	128/133	4.31
BS23	327/327	164/164	172/172	230/234	128/136	4.45
BS24	324/324	164/167	172/172	234/234	133/133	4.31
BS25	310/310	155/162	192/199	230/234	126/131	4.03
BS26	324/340	160/167	172/172	230/234	136/136	4.45
BS27	340/352	164/179	159/172	234/234	131/131	4.31
BS28	324/352	164/164	172/220	230/234	128/128	3.47
BS29	340/340	173/181	159/199	234/234	133/133	3.75
BS30	336/336	162/181	192/199	230/230	136/136	4.45
BS31	352/352	164/164	172/172	230/230	128/128	3.89
BS32	352/352	160/183	172/197	234/234	128/128	3.75
BS33	340/340	164/164	208/216	230/234	131/133	3.20
BS34	-	164/183	216/216	230/234	128/133	2.92
BS35	327/350	155/167	172/176	230/234	133/133	2.78
BS36	327/336	171/181	159/199	230/234	133/133	4.31
BS37	310/310	162/181	172/199	230/230	136/136	4.31
BS38	327/327	171/181	172/172	230/230	128/133	3.20
BS39	310/310	160/173	172/172	230/234	136/136	3.75
BS40	324/340	175/181	172/172	230/234	131/131	4.17

III. Genotypes at 5 microsatellite loci of wild *H. asinina* originating from Talibong Island

Samples	Loci				
	CUHas2	*CUHas3*	*CUHas8*	*Haμ2J*	*Haμ13*
T980	324/327	157/160	156/159	230/236	124/126
T983	336/336	159/164	156/156	230/236	124/124
T985	327/346	162/171	156/156	228/228	124/124
T988	327/327	160/160	144/150	230/230	124/124
T989	336/336	157/160	156/156	230/232	124/126
T990	346/346	160/160	144/150	230/230	126/126
T991	336/336	159/160	150/156	230/236	126/126
T992	324/340	160/160	156/156	228/228	126/126
T993	340/340	162/171	156/156	228/236	124/126
T994	316/327	162/171	156/156	230/230	124/124
T995	340/340	162/171	156/156	230/230	124/126
T996	340/340	157/160	150/150	232/238	126/126
T998	324/324	162/171	144/150	230/234	124/124
T999	316/327	162/171	144/150	230/230	124/126
L4	-	162/171	150/150	230/234	124/126
L6	-	157/157	144/156	234/234	126/126
L7	-	157/157	156/156	230/236	124/124
L9	-	162/171	150/156	230/234	126/126
L10	-	157/160	144/156	230/230	124/126
L15	-	-	156/156	228/234	124/124
L18	-	162/171	156/156	228/230	126/126
L20	-	-	156/156	230/230	126/126
L23	-	162/171	150/156	230/236	124/126
L25	-	162/171	150/156	232/240	124/126
L26	-	159/162	144/156	228/234	124/124

- = the amplification was unsuccessful.

APPENDIX B

I. Association analysis between microsatellite genotypes and the body weight of the hatchery sample (B) of *H. asinina* at *CUHas2*

Genotype	Mean weight*
310/310	5.771±1.545 ^{abc}
310/316	3.405±1.280 ^{a}
310/327	6.207±1.946 ^{abc}
310/336	11.878±5.207 ^{d}
324/324	9.301±3.592 ^{bcd}
324/340	8.592±3.750 ^{abcd}
327/327	8.164±3.215 ^{abcd}
327/336	4.725±1.986 ^{ab}
327/340	10.350±3.635 ^{cd}
336/336	8.356±3.420 ^{abcd}
336/350	6.158±1.586 ^{abc}
340/340	7.934±4.052 ^{abcd}
340/350	6.875±0.290 ^{abcd}
350/350	7.799±2.423 ^{abcd}
352/352	9.184±3.932 ^{bcd}

*The same superscripts between different genotype are not significantly different (P>0.05).

II. Association analysis between microsatellite genotypes and the body weight of the hatchery sample (B) of *H. asinina* at *CUHas3*

Genotype	Mean weight*
155/162	8.847±5.429 [ab]
155/165	9.908±1.769 [ab]
155/167	4.795±2.850 [a]
155/173	7.220±0.198 [ab]
160/164	6.113±1.599 [ab]
160/167	4.515±0.092 [a]
160/173	8.707±4.306 [ab]
160/179	12.365±0.785 [b]
162/162	10.350±3.635 [ab]
162/181	6.577±3.805 [ab]
164/164	4.341±1.197 [a]
164/167	8.568±2.898 [ab]
164/171	6.864±2.727 [ab]
164/173	6.947±5.052 [ab]
164/175	9.587±4.806 [ab]
164/179	5.975±2.355
164/181	9.375±3.246 [ab]
165/167	5.830±1.768 [a]
165/173	9.863±2.900 [ab]
165/179	8.475±6.286 [ab]
165/181	8.877±2.934 [ab]
167/181	10.233±2.486 [ab]
171/181	5.204±3.072 [a]
173/175	10.137±2.737 [ab]
173/181	5.833±1.968 [a]
175/181	8.642±4.746 [ab]

*The same superscripts between different genotype are not significantly different ($P > 0.05$).

III. Association analysis between microsatellite genotypes and the body weight of the hatchery sample (B) of *H. asinina* at *CUHas8*

Genotype	Mean weight*
159/172	9.309±3.182 [a]
159/192	9.380±7.566 [a]
159/199	8.236±4.962 [a]
172/172	6.958±3.726 [a]
172/176	7.018±3.330 [a]
172/183	5.695±1.959 [a]
172/192	6.752±3.724 [a]
172/199	7.925±3.312 [a]
172/204	9.955±3.429 [a]
172/208	7.418±0.362 [a]
172/216	7.640±0.396 [a]
176/199	9.515±3.048 [a]
192/192	11.670±0.198 [a]
192/199	7.595±4.696 [a]
192/204	9.720±3.734 [a]
197/199	10.000±1.928 [a]
199/216	7.150±0.099 [a]
199/220	8.265±5.211 [a]

*The same superscripts between different genotype are not significantly different ($P > 0.05$).

IV. Association analysis between microsatellite genotypes and the body weight of the hatchery sample (B) of *H. asinina* at *Haμ2J*

Genotype	Mean weight*
228/228	7.500±0.396
228/234	5.833±2.532
230/230	7.829±3.369
230/234	7.616±3.492
234/234	8.500±3.941

*The same superscripts between different genotype are not significantly different ($P > 0.05$)

BIOGRAPHY

Miss Teeraporn Rungpituckmana was born on November 14, 1983 in Bangkok, Thailand. She graduated with degree of Bachelor of Science (Biology) from Burapha University in 2004. She has studied for the degree of Master of Marine Science, Faculty of Science, Chulalongkorn University since 2005.

Publications from this thesis

1. Teer aporn Rungpituckmana, Sirawut Klinbunga,and Padermsak Jarayabhand (2007). Genetic diversity of Hatchery-produced Thai Abalone *Haliotis asinina* Linnaeus, 1758 analyzed by microsatellites. 33rd Congress on Science and Technology of Thailand, 18–20 October 2007, Walailak University, Nakhon Si Thammarat, Thailand (Oral presentation).