

Appendix 1. Morishita, Yamaguchi, Mashiba and Kamiya

1) Comparison of Kd[Mg/Ca] between superfamilies

Bartlett's test: $\chi^2 = 2409$, $df = 2$, $p < 2.20 \times 10^{-16}$

Superfamily	Kd[Mg/Ca]			Games-Howell test	
	Mean	S.D.	N		
Cypridoidea	4.2×10^{-2}	5.4×10^{-2}	484	vs Bairdioidea	** (t = 15.0, df = 485)
				vs Cytheroidea	** (t = 16.0, df = 484)
Bairdioidea	5.4×10^{-3}	7.4×10^{-4}	43	vs Cytheroidea	** (t = 17.4, df = 104)
Cytheroidea	2.9×10^{-3}	1.2×10^{-3}	383	-	-

2) Comparison of Kd[Sr/Ca] between superfamilies

Superfamily	Kd[Sr/Ca]			F test	Welch's t-test
	Mean	S.D.	N		
Cypridoidea	2.8×10^{-1}	9.9×10^{-2}	356	**	**
Cytheroidea	3.8×10^{-1}	4.5×10^{-2}	225	F = 4.9	t = -17

3) Comparison of Kd[Mg/Ca] between adult and juvenile

Taxon Code	Species Reference		Kd [Mg/Ca]			F test	t test/ Welch's t-test
			Mean	S.D.	N		
CR2	<i>Candona rawsoni</i> Engstrom and Nelson (1991)	Adult	4.17×10^{-3}	2.14×10^{-3}	22	n.s.	n.s.
		Juvenile	3.78×10^{-3}	2.11×10^{-3}	24	F = 1.03	t = 0.624
CR3	<i>Candona rawsoni</i> [Coldwater Lake] Xia et al. (1997)	Adult	8.09×10^{-4}	2.50×10^{-4}	28	n.s.	n.s.
		Juvenile	9.36×10^{-4}	1.53×10^{-4}	15	F = 2.66	t = -1.79
CR4	<i>Candona rawsoni</i> [Roslyn Lake] Xia et al. (1997)	Adult	4.38×10^{-3}	1.54×10^{-3}	34	*	n.s.
		Juvenile	4.58×10^{-3}	6.27×10^{-4}	14	F = 6.02	t = -0.624
HB	<i>Herpetocypris brevicaudata</i> Wansard and Roca (1998)	Adult	2.34×10^{-2}	2.05×10^{-2}	20	**	n.s.
		Juvenile	2.22×10^{-2}	3.11×10^{-3}	12	F = 43.3	t = 0.246
HI	<i>Herpetocypris intermedia</i> Wansard and Mezquita (2001)	Adult	6.60×10^{-3}	1.04×10^{-3}	84	n.s.	**
		Juvenile	5.86×10^{-3}	1.25×10^{-3}	65	F = 1.44	t = 3.94
XHA	<i>Xestoleberis hanaii</i> Kondo et al. (2005)	Adult	5.84×10^{-3}	1.32×10^{-3}	16	n.s.	n.s.
		Juvenile [§]	5.27×10^{-3}	1.01×10^{-3}	62	F = 1.79	t = 1.85
KP	<i>Krithe praetexta praetexta</i> Majoran et al. (1999)	Adult	3.35×10^{-3}	3.41×10^{-3}	11	n.s.	n.s.
		Juvenile [#]	3.17×10^{-3}	2.62×10^{-3}	19	F = 1.48	t = 1.57

[§]A-1 to A-5, [#]A-1

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4) Comparison of Kd[Sr/Ca] between adult and juvenile

Taxon Code	Species Reference		Kd [Sr/Ca]			F test	t test/ Welch's t-test
			Mean	S.D.	N		
CR2	<i>Candona rawsoni</i> Engstrom and Nelson (1991)	Adult	3.27x10 ⁻¹	5.36x10 ⁻²	22	**	n.s.
		Juvenile	3.40x10 ⁻¹	9.96x10 ⁻²	24	F = 3.45	t = -0.544
CR3	<i>Candona rawsoni</i> [Coldwater Lake] Xia et al. (1997)	Adult	3.67x10 ⁻¹	1.41x10 ⁻¹	28	n.s.	**
		Juvenile	6.48x10 ⁻¹	1.14x10 ⁻¹	15	F = 1.53	t = -6.61
CR4	<i>Candona rawsoni</i> [Roslyn Lake] Xia et al. (1997)	Adult	3.12x10 ⁻¹	2.78x10 ⁻²	34	**	n.s.
		Juvenile	3.27x10 ⁻¹	1.28x10 ⁻²	14	F = 4.68	t = 0.737
HB	<i>Herpetocypris brevicaudata</i> Wansard and Roca (1998)	Adult	1.95x10 ⁻¹	2.61x10 ⁻²	20	n.s.	n.s.
		Juvenile	1.96x10 ⁻¹	1.84x10 ⁻²	12	F = 2.02	t = -0.0774
KP	<i>Krithe praetexta praetexta</i> Majoran et al. (1999)	Adult	4.22x10 ⁻¹	2.61x10 ⁻²	11	n.s.	n.s.
		Juvenile [#]	4.06x10 ⁻¹	2.10x10 ⁻²	19	F = 1.54	t = 1.83

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5) Comparison of Kd[Mg/Ca] between ontogenic stages of *Xestoleberis hanaii* [Culture A] (Kondo et al., 2005).

Bartlett's test: $\chi^2 = 2.79$, df = 5, p = 0.732

Ontogenic Stage	Kd[Mg/Ca]			Turkey-Kramer test	
	Mean	S.D.	N		
Adult	5.84x10 ⁻³	1.32x10 ⁻³	16	vs A-1	n.s. (t = 1.22)
				vs A-2	n.s. (t = 1.58)
				vs A-3	n.s. (t = 1.01)
				vs A-4	n.s. (t = 1.21)
				vs A-5	n.s. (t = 1.94)
A-1	5.35x10 ⁻³	1.06x10 ⁻³	15	vs A-2	n.s. (t = 0.355)
				vs A-3	n.s. (t = 0.177)
				vs A-4	n.s. (t = 0.0887)
				vs A-5	n.s. (t = 0.970)
A-2	5.21x10 ⁻³	1.15x10 ⁻³	15	vs A-3	n.s. (t = 0.526)
				vs A-4	n.s. (t = 0.238)
				vs A-5	n.s. (t = 0.687)
A-3	5.42x10 ⁻³	1.03x10 ⁻³	14	vs A-4	n.s. (t = 0.250)
				vs A-5	n.s. (t = 1.10)
A-4	5.31x10 ⁻³	9.42x10 ⁻⁴	11	vs A-5	n.s. (t = 0.846)
A-5	4.86x10 ⁻³	8.40x10 ⁻⁴	7	-	-

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6) Comparison of Kd[Mg/Ca] between female and male

Taxon Code	Species Reference	Sex	Kd [Mg/Ca]			F test	t test/ Welch's t-test
			Mean	S.D.	N		
FP	<i>Fabaeformiscandona pedata</i> Wetterich et al. (2008b)	Female	5.5x10 ⁻³	3.6x10 ⁻³	19	**	n.s.
		Male	4.9x10 ⁻³	1.7x10 ⁻³	17	F = 4.07	t = 0.546
CT1	<i>Cyprideis torosa</i> Wansard et al. (1998)	Female	1.05x10 ⁻²	1.9x10 ⁻³	25	n.s.	n.s.
		Male	1.07x10 ⁻²	2.6x10 ⁻³	22	F = 1.78	t = -0.297

7) Comparison of Kd[Sr/Ca] between female and male

Taxon Code	Species Reference	Sex	Kd [Sr/Ca]			F test	t test
			Mean	S.D.	N		
FP	<i>Fabaeformiscandona pedata</i> Wetterich et al. (2008b)	Female	3.37x10 ⁻¹	6.19x10 ⁻²	19	n.s.	n.s.
		Male	3.21x10 ⁻¹	5.97x10 ⁻²	17	F = 1.08	t = 0.789
CT1	<i>Cyprideis torosa</i> Wansard et al. (1998)	Female	6.78x10 ⁻¹	4.38x10 ⁻²	25	n.s.	n.s.
		Male	6.88x10 ⁻¹	3.25x10 ⁻²	22	F = 1.81	t = -0.862