Taxa	Slice	HOS, or eq.	FAD	LAD	fL (mm)	Circ (mm)	CT (mm)	LG10 body mass est.	K	Rd/CT	Rd	Osteon Min	Osteon Area	Osteon AR	Canal Area	Canal Ma	Canal Mi
Ampelosaurus atacis	MDE C3 174	*12*	72.1	66		480	11.7		0.85	6.53	76.39	267.74	88540.04	1.52	10116.21	128.66	86.69
	MDE C3 203	*12*	72.1	66	780	270	15.7	6.491	0.63	2.74	42.97	190.07	41014.74	1.34	3390.60	75.58	53.12
	MDE C3 1182	*13*	72.1	66	695	253	10.98	6.374	0.73	3.67	40.27	170.56	37752.86	1.55	3238.62	72.46	50.11
	MDE C3 527	*13*	72.1	66	**680**			6.351				**217.00**					
	MDE C3 261	*12*	72.1	66	**840**			6.567				**192.00**					
Magyarosaurus dacus	FGGUB r1992	*14*	72.1	66	540	195	12.65	6.116	0.59	2.45	31.04	189.54	37932.99	1.25	4871.49	80.71	63.62
	FGGUB r1046	*14*	72.1	66	525	193	7	6.088	0.77	4.39	30.72	173.68	35467.53	1.38	3075.01	72.10	49.10
	FGGUB r1220	*14*	72.1	66	346	176	7.5	5.663	0.73	3.73	28.01						
	FGGUB r1511	*13*	72.1	66	466	179	5.1	5.966	0.82	5.59	28.49	174.93	37993.85	1.29	2188.56	56.16	37.42
Phuwiangosaurus sirindhornae	PC.DMR K21	*11*	129.4	113	1120		14.1	6.860				176.88	41304.24	1.61	5692.30	107.15	60.27
	PC.DMR No no.	*10*	129.4	113	1030		14.8	6.774									
	PC.DMR K4-69	*12*	129.4	113	**1050**			6.794				**177.00**					
Giraffatitan brancai	MFN IX 1	9	155.7	145	**880**	**340**	**18**	6.614	0.67	3.01	54.11	**221.00**					
	MFN XV	12	155.7	145	**2190**	**820**	**40**	7.543	0.69	3.26	130.51	**218.00**					
	MFN dd452	10	155.7	145	1350	620	33	7.050	0.67	2.99	98.68	148.67	26927.99	1.46	2505.93	70.24	42.56
	MFN Nr 305	11	155.7	145	1560	609.65*	21.6	7.197	0.78	4.49	97.03	166.16	31792.75	1.37	3901.17	78.23	54.38
	MFN St 291	10.5	155.7	145	1830	713.93*	34	7.360	0.70	3.34	113.63	214.68	55539.47	1.41	5132.53	96.06	57.80
	NHMUK PV 5937	8	155.7	145	876	294	14.76*	6.609	0.68	3.17	46.79						
Europasaurus holgeri	DFMMh/FV 495.9	9	157.3	152.1	**400**	**181**	**6.9**	5.811	0.76	4.17	28.81						
	DFMMh/FV 403.3	10	157.3	152.1	**475**	**185**	**7**	5.986	0.76	4.21	29.44						
	DFMMh/FV 555.2	11	157.3	152.1	**316**	**175**	**8**	5.571	0.71	3.48	27.85						
Camarasaurus spp.	CM 11393	12	157.3	145	1566	682		7.201			108.54	254.11	67130.57	1.31	7046.97	122.51	71.91
	CM 36664	12/EFS	157.3	145	1452	644.225*		7.124			102.53	269.15	71483.11	1.22	7240.49	103.58	80.38
	BYU 725-12173	8	157.3	145	1330	570	29.09	7.035	0.68	3.12	90.72	**280.00**					
	SMA K11-29-1	12	157.3	145	**830**	376.3*		6.554			59.89	**292.00**					
	SMA 0002	11	157.3	145	**935**	421.5*		6.676			67.08	**238.00**					
Janenschia robusta	NHUB Nr.22	*12*	152.1	145	1270		52.2	6.988				180.02	35500.63	1.35	4410.51	82.63	60.99
Apatosaurinae	681-11940	9	157.3	145	1330	535	30.75	7.035	0.64	2.77	85.15	314.77	109667.10	1.29	11553.54	136.34	90.27
	BYU 601-17328	12/EFS	157.3	145	1580	680	47.84	7.210	0.56	2.26	108.23	258.02	68518.14	1.24	5420.30	98.93	61.83
	OMNH 4020	13	157.3	145	2044.25*	910	49.27	7.473	0.66	2.94	144.83	306.69	95759.26	1.24	9883.96	124.96	88.54
	BYU 681-17014	7/8	157.3	145	**970**	**370**	**25**	6.713	0.58	2.36	58.89	**222.00**					
Dicraeosaurus sattleri	MFN M1b	*9*	152.1	145	1120		12.2	6.860				218.26	49607.92	1.29	2955.61	71.42	51.25
	MFN O2	*8*	152.1	145	980		21.2	6.724				204.17	46878.15	1.34	5994.90	103.29	67.76
Dicraeosaurus hansemanni	MFN dd3032	*9*	157.3	152.1	1140		21.1	6.878				170.56	38115.93	1.38	8369.00	90.33	65.29
Dicraeosaurus sp.	NHMUK PV unreg.	11	157.3	152.1	1065	362	19.42	6.808	0.66	2.97	57.61						

Bold - added from literature - Mitchell 2014 (fL, Circ), Mitchell 2017 (Osteon width)
*estimated from linear regression

Taxa	Slice	Canal AR	Infill area	Mean K of osteons, KOn	Mean Rd of osteons, RdOn, (um)	Mean t of osteons, tOn (um)	RI(Circ) mm	RI(CT)	TI (CT/Circ)	SO Osteocyte Area (um2)	SO Osteocyte Perim (um)	SO Osteocyte Major (um)	SO Osteocyte Min (um)	SO Osteocyte Circularity Cr	SO Osteocyte AR	WB Osteocyte Area (um2)
Ampelosaurus atacis	MDE C3 174	1.54	78423.83	0.32	133.87	90.53			2.44	32.16	24.92	9.33	4.41	0.66	2.31	
	MDE C3 203	1.50	37624.14	0.28	95.04	68.48	34.62	2.01	5.81	62.44	30.94	10.62	7.16	0.77	1.60	
	MDE C3 1182	1.47	34514.24	0.29	85.28	60.22	36.40	1.58	4.34	64.13	33.07	12.04	6.52	0.71	1.90	98.85
	MDE C3 527															
	MDE C3 261															
Magyarosaurus dacus	FGGUB r1992	1.30	33061.51	0.34	94.77	62.96	36.11	2.34	6.49							
	FGGUB r1046	1.50	32392.52	0.28	86.84	62.29	36.76	1.33	3.63	71.67	35.04	12.53	7.30	0.73	1.77	72.22
	FGGUB r1220						50.87	2.17	4.26							
	FGGUB r1511	1.52	35805.29	0.21	87.46	68.75	38.41	1.09	2.85							
Phuwiangosaurus sirindhornae	PC.DMR K21	1.85	35611.95	0.34	88.44	58.31		1.26		26.32	31.75	13.17	2.52	0.35	5.38	43.46
	PC.DMR No no.							1.44								37.94
	PC.DMR K4-69															
Giraffatitan brancai	MFN IX 1						38.64	2.05	5.29							
	MFN XV						37.44	1.83	4.88							
	MFN dd452	1.71	24422.06	0.29	74.34	53.06	45.93	2.44	5.32	48.90	30.70	11.91	5.04	0.64	2.47	90.39
	MFN Nr 305	1.43	27891.57	0.33	83.08	55.89	39.08	1.38	3.54	32.06	29.77	12.57	3.16	0.47	4.19	66.87
	MFN St 291	1.69	50406.94	0.27	107.34	78.44	39.01	1.86	4.76	72.18	42.74	16.47	5.36	0.48	3.44	94.20
	NHMUK PV 5937						33.56	1.68	5.02	26.02	25.06	9.84	3.28	0.50	3.36	38.91
Europasaurus holgeri	DFMMh/FV 495.9						45.25	1.73	3.81							
	DFMMh/FV 403.3						38.95	1.47	3.78							
	DFMMh/FV 555.2						55.38	2.53	4.57							
Camarasaurus spp.	CM 11393	1.77	60083.60	0.28	127.06	91.10	43.55									58.00
	CM 36664	1.30	64242.61	0.30	134.58	94.39	44.37			22.18	21.45	8.57	3.20	0.60	2.83	48.05
	BYU 725-12173						42.86	2.19	5.10							
	SMA K11-29-1						45.34	0.00	0.00							
	SMA 0002						45.08	0.00	0.00							
Janenschia robusta	NHUB Nr.22	1.37	31090.12	0.34	90.01	59.52		4.11		36.33	27.10	10.36	4.47	0.63	2.45	77.68
Apatosaurinae	681-11940	1.56	98113.55	0.29	157.39	112.25	40.23	2.31	5.75	41.09	27.72	10.38	5.03	0.67	2.18	46.52
	BYU 601-17328	1.68	63097.84	0.24	129.01	98.09	43.04	3.03	7.04	52.76	33.21	12.15	5.37	0.60	2.39	40.27
	OMNH 4020	1.43	85875.30	0.29	153.35	109.08	44.52	2.41	5.41	21.98	21.37	7.98	3.56	0.62	2.42	73.40
	BYU 681-17014						38.14	2.58	6.76							
Dicraeosaurus sattleri	MFN M1b	1.41	46652.30	0.23	109.13	83.50	0.00	1.09		31.52	27.00	10.91	3.76	0.57	3.18	
	MFN O2	1.55	40883.25	0.33	102.09	68.21	0.00	2.16		27.56	23.41	9.09	3.82	0.63	2.47	
Dicraeosaurus hansemanni	MFN dd3032	1.54	29746.92	0.38	85.28	52.63	0.00	1.85		38.86	28.63	11.16	4.40	0.60	2.66	45.21
Dicraeosaurus sp.	NHMUK PV unreg.						33.99	1.82	5.36	18.47	22.27	8.88	2.64	0.48	3.49	24.55

Bold - added from literature - Mitchell 2014 (fL, Circ), Mitchell
*estimated from linear regression

Taxa	Slice	WB Osteocyte Perim (um)	WB Osteocyte Major (um)	WB Osteocyte Min (um)	WB Osteocyte Circularity	WB Osteocyte AR	PFB Osteocyte Area (um2)	PFB Osteocyte Perim (um)	PFB Osteocyte Major (um)	PFB Osteocyte Min (um)	PFB Osteocyte Circularity	PFB Osteocyte AR
Ampelosaurus atacis	MDE C3 174											
	MDE C3 203											
	MDE C3 1182	39.12	13.37	9.24	0.79	1.49						
	MDE C3 527											
	MDE C3 261											
Magyarosaurus dacus	FGGUB r1992											
	FGGUB r1046	34.27	11.28	7.85	0.75	1.44						
	FGGUB r1220											
	FGGUB r1511											
Phuwiangosaurus sirindhornae	PC.DMR K21	31.49	10.54	5.12	0.54	2.18						
	PC.DMR No no.	29.64	9.54	4.97	0.55	2.02	18.76	26.74	11.18	2.12	0.34	5.52
	PC.DMR K4-69											
Giraffatitan brancai	MFN IX 1											
	MFN XV											
	MFN dd452	45.26	15.23	7.45	0.58	2.15	35.94	36.16	15.24	2.99	0.35	5.30
	MFN Nr 305	40.07	14.80	5.92	0.54	2.73	41.96	35.07	14.01	3.74	0.43	3.99
	MFN St 291	43.69	15.69	7.62	0.63	2.17	51.99	34.15	13.16	4.99	0.56	2.68
	NHMUK PV 5937	32.30	11.01	4.49	0.48	2.61						
Europasaurus holgeri	DFMMh/FV 495.9											
	DFMMh/FV 403.3											
	DFMMh/FV 555.2											
Camarasaurus spp.	CM 11393	36.83	13.45	5.49	0.55	2.63						
	CM 36664	29.36	10.08	6.04	0.71	1.71						
	BYU 725-12173											
	SMA K11-29-1											
	SMA 0002											
Janenschia robusta	NHUB Nr.22	38.87	13.17	7.34	0.64	1.88	19.22	19.22	7.25	3.42	0.67	2.21
Apatosaurinae	681-11940	29.49	10.65	5.44	0.67	2.03	35.66	27.80	11.15	4.12	0.60	2.83
	BYU 601-17328	29.10	11.13	4.59	0.62	2.49	56.81	33.01	12.29	5.87	0.66	2.12
	OMNH 4020	40.21	12.84	7.29	0.60	1.85						
	BYU 681-17014											
Dicraeosaurus sattleri	MFN M1b											
	MFN O2						33.79	29.01	11.96	3.61	0.54	3.45
Dicraeosaurus hansemanni	MFN dd3032	32.14	12.21	4.67	0.56	2.66	37.06	29.72	11.26	4.25	0.55	2.89
Dicraeosaurus sp.	NHMUK PV unreg.	25.70	9.93	3.13	0.47	3.41	21.05	21.55	8.10	3.31	0.58	2.58

Bold - added from literature - Mitchell 2014 (fL, Circ), Mitchell
*estimated from linear regression

	No. of taxa	**Blomberg's K**	*p*	**Pagels λ**	*p*	**Moran's *I***	*p*	**Abouheif's Cmean**	*p*	**BM AICc**	lnL	**No Sig Lambda0 AICc**	lnL
Macro													
Body mass	10	0.327	0.922	0.000	1.000	-0.041	0.274	0.009	0.422	26.06826	-10.177	19.232294	-6.759004
fL	10	0.306	0.944	0.000	1.000	-0.084	0.369	-0.034	0.525	9.314041	-1.79988	1.875504	1.919391
Circ	6	0.327	0.699	0.000	1.000	-0.112	0.330	0.049	0.379	12.00233	-2.00116	8.837454	-0.418727
Bone size													
Ar	6	0.296	0.789	0.000	1.000	-0.155	0.464	0.009	0.427	20.074	-6.037	16.377653	-4.188827
Cortical Thickness													
CT	10	0.541	0.559	0.064	0.933	0.126	0.115	0.276	0.088	11.94817	-3.11694	8.807098	-1.546406
Robusticity													
K	6	0.506	0.471	1.000	0.412	-0.422	0.882	0.097	0.365	-9.9526	8.976298	-9.278076	8.63903
Rd/CT	6	0.702	0.259	0.729	0.472	0.098	0.071	0.404	**0.010**	-6.16604	7.083019	-5.892129	6.946064
RI(Circ)	6	0.446	0.631	0.000	1.000	-0.191	0.425	-0.088	0.672	-10.6083	9.304143	-14.764513	11.382256
RI(CT)	10	0.995	0.096	1.000	0.107	0.070	0.136	0.392	**0.012**	-8.16596	6.940121	-5.571171	5.642729
TI	6	0.702	0.296	0.729	0.472	0.098	0.066	0.404	**0.022**	-6.16546	7.082732	-5.891653	6.945827
Osteons													
KOn	9	0.386	0.959	0.000	1.000	-0.349	0.945	-0.210	0.894	-16.3192	11.15958	-20.031965	13.015983
On.Ar	9	0.572	0.720	0.000	1.000	-0.220	0.662	-0.032	0.497	-2.07869	4.039343	-2.349775	4.174888
On.Dm	9	0.548	0.716	0.000	1.000	-0.191	0.556	-0.028	0.555	-12.6815	9.340746	-13.460908	9.730454
On.In.Ar	9	0.521	0.810	0.000	1.000	-0.256	0.743	-0.072	0.599	-0.19522	3.097611	-0.970011	3.485006
Canals													
On.Vc.Ar	9	0.564	0.711	0.000	1.000	-0.094	0.379	0.010	0.409	0.249738	2.875131	-1.717661	3.858831
On.Vc.Dm	9	0.764	0.221	0.568	0.916	-0.041	0.267	0.050	0.381	-16.9623	11.48116	-16.974373	11.487186
Osteocytes													
On.Ot.AR	9	1.304	**0.024**	1.000	0.393	-0.112	0.405	-0.073	0.636	-9.39146	7.695732	-8.660435	7.330218
On.Ot.Cr	9	1.230	**0.040**	1.000	0.418	-0.131	0.497	-0.090	0.672	-16.0236	11.0118	-15.368277	10.684138
On.Ot.Ar	9	1.148	**0.034**	0.545	0.760	0.003	0.207	0.056	0.368	-6.38374	6.19187	-6.411551	6.205776
On.Ot.DM	9	0.782	0.256	0.579	0.883	-0.002	0.251	0.078	0.347	-19.8246	12.9123	-19.849652	12.924826
On.Ot.Dm	9	1.360	**0.008**	1.000	0.526	-0.070	0.326	-0.029	0.547	-10.3053	8.152626	-9.903502	7.951751
On.Ot.P	9	0.868	0.164	0.670	0.700	0.079	0.142	0.156	0.214	-19.5456	12.77279	-19.467288	12.733644
PFB.Ot.AR	6	1.414	**0.017**	1.000	0.458	-0.031	0.221	0.220	0.182	-1.36352	4.68176	-0.812026	4.406013
PFB.Ot.Cr	6	1.570	**0.009**	1.000	0.317	0.054	0.135	0.273	0.136	-5.36442	6.68221	-4.362521	6.18126
PFB.Ot.Ar	6	1.049	0.176	0.000	1.000	-0.262	0.495	0.026	0.440	1.977024	3.011488	1.952079	3.02396
PFB.Ot.DM	6	0.955	0.318	1.000	0.482	-0.177	0.550	0.294	0.169	-4.14916	6.074578	-3.655357	5.827678
PFB.Ot.Dm	6	1.365	**0.058**	0.000	1.000	-0.143	0.343	-0.002	0.513	-3.07073	5.535367	-3.24538	5.62269
PFB.Ot.P	6	0.931	0.317	1.000	0.527	-0.212	0.610	0.246	0.174	-5.16552	6.582759	-4.764749	6.382374
WB.Ot.AR	8	1.423	**0.033**	1.000	0.245	0.230	**0.049**	0.286	0.086	-13.268	9.833996	-11.91477	9.157385
WB.Ot.Cr	8	1.559	**0.034**	1.000	0.307	0.072	0.134	0.108	0.280	-21.6773	14.03866	-20.634396	13.517198
WB.Ot.Ar	8	0.981	0.115	1.000	0.652	-0.074	0.290	0.036	0.404	-5.99707	6.198535	-5.793361	6.096681
WB.Ot.DM	8	0.689	0.527	0.000	1.000	-0.322	0.851	-0.221	0.875	-19.5658	12.98288	-21.198128	13.799064
WB.Ot.Dm	8	1.185	**0.038**	1.000	0.305	0.084	0.122	0.176	0.189	-11.2035	8.801735	-10.15127	8.275635
WB.Ot.P	8	0.632	0.686	0.000	1.000	-0.232	0.642	-0.074	0.628	-19.8099	13.10494	-20.456753	13.428376

α = .05, statistically significant figures in bold
AICc (eq.) models within two values of each other are considered eq.
alpha values relate to OU or EB

	Lambda AICc	lnL	OU AICc	α	lnL	Rate trend AICc	lnL	Delta AICc	Delta δ	lnL	White noise AICc	lnL	EB AICc	α
Macro														
Body mass	23.518	-6.759	21.866	2.193	-5.933	29.457	-9.729	30.240	1.217	-10.120	17.580	-5.933	29.867	-0.018
fL	6.161	1.919	4.498	2.373	2.751	12.669	-1.334	13.436	1.265	-1.718	0.212	2.751	13.131	-0.018
Circ	18.837	-0.419	17.317	2.371	0.341	21.060	-1.530	21.991	0.925	-1.996	7.317	0.341	21.263	-0.022
Bone size														
Ar	26.378	-4.189	24.863	2.236	-3.431	29.069	-5.535	30.072	0.971	-6.036	14.863	-3.431	29.330	-0.023
Cortical Thickness														
CT	13.086	-1.543	11.871	2.117	-0.935	14.949	-2.475	16.196	0.875	-3.098	7.585	-0.935	15.215	-0.025
Robusticity														
K	0.047	8.976	-1.604	0.060	9.802	-5.844	11.922	-2.890	0.151	10.445	-11.585	9.792	-6.376	-0.096
Rd/CT	3.590	7.205	3.036	2.016	7.482	0.543	8.728	2.710	0.357	7.645	-6.964	7.482	0.715	-0.059
RI(Circ)	-4.765	11.382	-4.538	2.205	11.269	-0.654	9.327	-0.902	1.477	9.451	-14.538	11.269	-0.687	-0.008
RI(CT)	-3.880	6.940	-3.881	0.000	6.940	-7.264	8.632	-8.814	0.115	9.407	-6.859	6.287	-8.119	-0.059
TI	3.591	7.205	3.036	2.268	7.482	0.555	8.723	2.711	0.357	7.644	-6.964	7.482	0.725	-0.059
Osteons														
KOn	-15.232	13.016	-18.011	1.475	14.405	-12.987	11.894	-11.519	1.007	11.160	-22.811	14.405	-12.625	-0.028
On.Ar	2.450	4.175	-0.025	1.267	5.412	1.788	4.506	2.267	0.596	4.266	-4.825	5.412	1.636	-0.021
On.Dm	-8.661	9.730	-11.125	1.346	10.963	-9.296	10.048	-8.197	0.652	9.499	-15.925	0.963	-9.412	-0.029
On.In.Ar	3.830	3.485	1.065	1.260	4.867	3.489	3.655	4.259	0.643	3.270	-3.166	4.867	3.352	-0.024
Canals														
On.Vc.Ar	3.082	3.859	1.645	1.452	4.577	4.533	3.133	5.041	0.941	2.880	-3.155	4.577	4.579	-0.015
On.Vc.Dm	-12.185	11.493	-12.917	1.292	11.859	-12.314	11.557	-12.193	0.897	11.496	-17.717	11.859	-12.331	-0.008
Osteocytes														
On.Ot.AR	-4.591	7.696	-4.596	0.000	7.698	-6.828	8.814	-7.335	2.902	9.068	-4.711	5.355	-4.591	0.000
On.Ot.Cr	-11.224	11.012	-11.224	0.000	11.012	-13.562	11.012	-14.612	3.000	12.706	-11.813	8.907	-11.224	0.000
On.Ot.Ar	-1.705	6.252	-1.584	0.000	6.192	-1.767	6.284	-2.092	1.509	6.446	-3.434	4.717	-1.584	0.000
On.Ot.DM	-15.071	12.936	-15.527	0.025	13.163	-15.271	13.036	-15.039	0.923	12.920	-25.818	13.158	-15.274	-0.010
On.Ot.Dm	-5.505	8.153	-5.505	0.000	8.153	-7.666	9.233	-7.782	2.338	9.291	-5.501	5.751	-5.505	0.000
On.Ot.P	-14.816	12.808	-14.910	0.007	12.855	-14.947	12.874	-14.754	0.940	12.777	-19.372	12.686	-14.958	-0.009
PFB.Ot.AR	8.636	4.682	8.636	0.000	4.682	7.989	5.006	7.530	3.000	5.235	0.731	3.634	8.636	0.000
PFB.Ot.Cr	4.636	6.682	4.636	0.000	6.682	4.009	6.995	3.425	3.000	7.288	-2.556	5.278	4.636	0.000
PFB.Ot.Ar	11.952	3.024	11.977	0.000	3.011	11.610	3.195	11.584	2.417	3.208	2.647	2.676	11.977	0.000
PFB.Ot.DM	5.851	6.075	5.747	0.021	6.127	4.317	6.842	3.126	0.093	7.437	-4.103	6.051	4.485	-0.145
PFB.Ot.Dm	6.755	5.623	6.926	0.000	5.537	5.023	6.489	3.771	3.000	7.115	-1.047	4.523	6.929	0.000
PFB.Ot.P	4.834	6.583	4.649	0.028	6.676	3.297	7.352	3.044	0.137	7.478	-5.211	6.605	4.102	-0.101
WB.Ot.AR	-7.668	9.834	-7.691	0.000	9.845	-9.298	10.649	-7.697	1.126	9.849	-9.983	8.191	-7.745	-0.034
WB.Ot.Cr	-16.077	14.039	-16.081	0.000	14.041	-17.253	14.626	-17.290	1.836	14.645	-17.067	11.734	-16.077	0.000
WB.Ot.Ar	-0.397	6.199	-0.402	0.000	6.201	-0.410	6.205	-0.458	1.164	6.229	-4.473	5.436	-0.397	0.000
WB.Ot.DM	-15.598	13.799	-15.132	0.061	13.566	-14.606	13.303	-14.736	1.668	13.368	-20.720	13.560	-13.966	0.000
WB.Ot.Dm	-5.603	8.276	-5.650	0.000	8.825	-5.628	8.814	-5.607	0.963	8.803	-8.673	7.537	-5.623	-0.004
WB.Ot.P	-14.857	13.428	-15.854	0.095	13.927	-14.337	13.169	-14.211	0.975	13.106	-21.451	13.926	14.318	-0.007

α = .05, statistically sigr
AICc (eq.) models withir
alpha values relate to O

	lnL	AICc(w)	AICc (eq.)
Macro			
Body mass	-9.934	White	**W, L0**
fL	-1.565	White	**W**
Circ	-1.632	White	**W**, L0
Bone size			
Ar	-5.665	White	**W**
Cortical Thickness			
CT	-2.608	White	**W**, L0
Robusticity			
K	12.188	White	**W**, BM
Rd/CT	8.642	White	**W**, BM, L0
RI(Circ)	9.344	Lambda0	**L0**, W
RI(CT)	9.060	Delta	**D**, BM, EB, W
TI	8.638	White	**W**, BM, L0
Osteons			
KOn	11.712	White	**W**, L0
On.Ar	4.582	White	**W**
On.Dm	10.106	White	**W**
On.In.Ar	3.724	White	**W**
Canals			
On.Vc.Ar	3.111	White	**W**, L0
On.Vc.Dm	11.565	White	**W**, L0, BM
Osteocytes			
On.Ot.AR	7.696	BM	**BM**, L0
On.Ot.Cr	11.012	BM	**BM**, L0, D
On.Ot.Ar	6.192	Lambda0	**L0**, BM
On.Ot.DM	13.037	White	**W**, L0, BM
On.Ot.Dm	8.153	BM	**BM**, L0
On.Ot.P	12.879	BM	**BM**, L0, W
PFB.Ot.AR	4.682	BM	**BM**, W
PFB.Ot.Cr	6.682	BM	**BM**, L0
PFB.Ot.Ar	3.011	Lambda0	**L0**, BM, W
PFB.Ot.DM	6.758	BM	**BM**, W, L0
PFB.Ot.Dm	5.535	Lambda0	**L0**, BM
PFB.Ot.P	6.949	White	**W**, BM, L0
WB.Ot.AR	9.873	BM	**BM**, L0
WB.Ot.Cr	14.039	BM	**BM**, L0
WB.Ot.Ar	6.199	BM	**BM**, L0, W
WB.Ot.DM	12.983	Lambda0	**L0**, W, BM
WB.Ot.Dm	8.811	BM	**BM**, L0
WB.Ot.P	13.159	White	**W**, L0, BM

α = .05, statistically sigr
AICc (eq.) models withir
alpha values relate to O

	Body mass			Circ		
	n	**rs**	***p***	**n**	**rs**	***p***
Ar	24	0.988	**.000**			
CT	26	0.888	**.000**	21	0.930	**.000**
Circ	24	0.988	**.000**			
TI	20	0.444	**.050**			
K	22	-0.388	.075	23	-0.285	.187
Rd/CT	20	-0.444	**.050**			
Osteons and canals						
KOn						
On.Ar	18	0.490	**.039**	14	0.437	.118
On.Dm	27	0.312	.113	20	0.385	.094
On.In.Ar	18	0.406	.095	14	0.442	.114
On.Vc.Ar	18	0.522	**.026**	14	0.547	**.043**
On.Vc.Dm	18	0.499	**.035**	14	0.503	.067
Osteocytes						
On.Ot.AR	16	0.318	.230	12	0.608	**.036**
On.Ot.Cr	16	-0.442	.087	12	-0.636	**.026**
On.Ot.Ar						
On.Ot.Dm						
On.Ot.P						
PFB.Ot.AR	9	-0.433	.244	5	-0.500	.391
PFB.Ot.Cr	9	0.300	.433	5	0.100	.873
PFB.Ot.Ar	9	0.817	**.007**	5	0.800	.104
PFB.Ot.Dm						
PFB.Ot.P	9	0.633	.067	5	0.200	.747
WB.Ot.AR	15	0.293	.289	11	0.327	.326
WB.Ot.Cr	15	-0.082	.771	11	-0.291	.385
WB.Ot.Ar						
WB.Ot.Dm	15	-0.004	.990	11	-0.136	.689
WB.Ot.P						

Regression of log10 histological variables against log10fL, log10bodymass and log10 circumference using Spearman's correlation coefficient (rs), (values for body mass and fL were identical).

Pairs uncorrelated from looking at the scatter plot are not reported here
α = .05, statistically significant figures in bold

X Indep.	Y Dep.	n	Coefficient	Standard error ±	t-test	*p*	R^2	Lambda (ML)	lower bound	upper
Mass	TI	6	0.074	0.022	3.346	**.029**	0.737	1	.442	1.000
Mass	K	6	-0.031	0.011	-2.694	**.054**	0.645	1	.302	1.000
Mass	Rd/CT	6	-0.074	0.022	-3.346	**.029**	0.737	1	.442	1.000
Mass	Ar	5	0.990	0.083	11.921	**.001**	0.979	0	1.00	.21
Mass	CT	9	0.606	0.195	3.114	**.017**	0.581	1	.26	1.00
Mass	Circ	5	0.448	0.048	9.319	**.003**	0.967	0	1.00	.55
Osteons										
Mass	KOn	9	-0.026	0.073	-0.355	.733	0.018	0	1.000	.063
Mass	On.Ar	9	0.258	0.176	1.465	.186	0.235	0	1.000	.454
Mass	On.Dm	9	0.098	0.123	0.796	.452	0.083	0	1.000	.313
Mass	On.In.Ar	9	0.267	0.192	1.390	.207	0.216	0	1.000	.274
Mass	On.Vc.Ar	9	0.125	0.079	1.208	.266	0.173	0	1.000	.203
Mass	On.Vc.Dm	9	0.125	0.079	1.586	.157	0.264	0	1.000	.883
Osteocytes										
Mass	On.Ot.AR	9	0.091	0.166	0.548	.601	0.041	1	.476	1.000
Mass	On.Ot.Cr	9	-0.047	0.114	-0.417	.690	0.024	1	.474	1.000
Mass	On.Ot.Ar	9	-0.247	0.166	-1.487	.181	0.240	0	1.000	.353
Mass	On.Ot.Dm	9	-0.183	0.135	-1.350	.219	0.206	0	1.000	.571
Mass	On.Ot.P	9	-0.103	0.079	-1.305	.233	0.196	0	1.000	.549
Mass	PFB.Ot.AR	6	-0.202	0.301	-0.671	.539	0.101	1	.325	1.000
Mass	PFB.Ot.Cr	6	0.107	0.215	0.495	.647	0.058	1	.274	1.000
Mass	PFB.Ot.Ar	6	0.474	0.350	1.356	.247	0.315	1	.303	1.000
Mass	PFB.Ot.Dm	6	0.358	0.213	1.685	.167	0.415	1	.233	1.000
Mass	PFB.Ot.P	6	0.163	0.214	0.764	.488	0.127	1	.367	1.000
Mass	WB.Ot.AR	8	0.099	0.105	0.940	.383	0.128	1	.731	1.000
Mass	WB.Ot.Cr	8	-0.067	0.057	-1.176	.284	0.187	0	1.000	.846
Mass	WB.Ot.Ar	8	-0.098	0.157	-0.621	.558	0.060	0	1.000	.508
Mass	WB.Ot.Dm	8	-0.040	0.128	-0.308	.769	0.016	1	.736	1.000
Mass	WB.Ot.P	8	-0.006	0.064	-0.099	.924	0.002	0	1.000	.425

Predictor variable (Independent)
Response variable (Dependent)
α = .05, statistically significant (or near) figures in bold
n = no. of taxonomic groups

X Indep.	Y Dep.	n	Coefficient	Standard error ±	t-test	*p*	R^2	Lambda (ML)	lower bound	upper
fL	TI	6	0.173	0.052	3.346	**.029**	0.737	1	.442	1.000
fL	K	6	-0.072	0.027	-2.694	**.054**	0.645	1	.302	1.000
fL	Rd/CT	6	-0.173	0.052	-3.346	**.029**	0.737	1	.442	1.000
fL	Ar	5	2.322	0.195	11.921	**.001**	0.979	0	1.000	.208
fL	CT	9	1.482	0.478	3.097	**.017**	0.578	1	.263	1.000
fL	**Circ**	6	0.883	0.037	24.039	**.000**	0.993	1	.210	1.000
Osteons										
fL	KOn	9	-0.049	0.189	-0.258	.804	0.009	0	1.000	.071
fL	On.Ar	9	0.584	0.342	1.709	.131	0.294	0	1.000	.390
fL	On.Dm	9	0.222	0.290	0.765	.469	0.077	0	1.000	.319
fL	On.In.Ar	9	0.631	0.444	1.423	.198	0.224	0	1.000	.272
fL	On.Vc.Ar	9	0.541	0.448	1.210	.266	0.173	0	1.000	.202
fL	On.Vc.Dm	9	0.292	0.183	1.591	.156	0.266	0	1.000	.867
Osteocytes										
fL	On.Ot.AR	9	0.212	0.389	0.545	.603	0.041	1	.505	1.000
fL	On.Ot.Cr	9	-0.122	0.270	-0.450	.666	0.028	1	.440	1.000
fL	On.Ot.Ar	9	-0.647	0.361	-1.791	.116	0.314	0	1.000	.291
fL	On.Ot.Dm	9	-0.441	0.310	-1.424	.197	0.225	0	1.000	.604
fL	On.Ot.P	9	-0.211	0.206	-1.025	.339	0.131	0	1.000	.599
fL	PFB.Ot.AR	6	-0.521	0.671	-0.777	.481	0.131	1	.325	1.000
fL	PFB.Ot.Cr	6	0.193	0.502	0.385	.720	0.036	1	.280	1.000
fL	PFB.Ot.Ar	6	1.140	0.728	1.565	.193	0.380	1	.294	1.000
fL	PFB.Ot.Dm	6	0.826	0.492	1.679	.168	0.414	1	.234	1.000
fL	PFB.Ot.P	6	0.372	0.431	0.863	.437	0.157	1	.341	1.000
fL	WB.Ot.AR	8	0.217	0.260	0.835	.436	0.104	1	.767	1.000
fL	WB.Ot.Cr	8	0.274	0.159	1.723	.160	0.426	1	.818	1.000
fL	WB.Ot.Ar	8	0.185	0.775	0.239	.823	0.014	0	1.000	.636
fL	WB.Ot.Dm	8	0.379	0.487	0.779	.480	0.132	1	.658	1.000
fL	WB.Ot.P	8	0.578	0.363	1.591	.187	0.388	0	1.000	.865

X Indep.	Y Depen.	n	Coefficient	Standard error ±	t-test	*p*	R^2	Lambda (ML)	lower bound	upper
Circ	CT	5	1.319	0.178	7.406	**.005**	0.948	0	1.000	.621
Osteons										
Circ	KOn	5	-0.004	0.055	-0.080	.941	0.002	0	1.000	.586
Circ	On.Ar	5	0.399	0.555	0.718	.525	0.147	1	.755	1.000
Circ	On.Dm	5	0.167	0.274	0.610	.585	0.110	1	.618	1.000
Circ	On.In.Ar	5	0.390	0.556	0.702	.533	0.141	1	.744	1.000
Circ	On.Vc.Ar	5	0.484	0.490	0.988	.396	0.246	0	1.000	1.000
Circ	On.Vc.Dm	5	0.245	0.271	0.906	.432	0.215	0	1.000	.919
Osteocytes										
Circ	On.Ot.AR	5	0.291	0.307	0.948	.413	0.231	1	.663	1.000
Circ	On.Ot.Cr	5	-0.155	0.145	-1.064	.365	0.274	0	1.000	1.000
Circ	On.Ot.Ar	5	-0.634	0.473	-1.341	.273	0.375	1	.688	1.000
Circ	On.Ot.Dm	5	-0.419	0.288	-1.455	.242	0.414	1	.595	1.000
Circ	On.Ot.P	5	-0.255	0.229	-1.114	.347	0.293	0	1.000	1.000
Circ	PFB.Ot.AR		(not enough data)							
Circ	PFB.Ot.Cr									
Circ	PFB.Ot.Ar									
Circ	PFB.Ot.Dm									
Circ	PFB.Ot.P									
Circ	WB.Ot.AR	5	0.341	0.123	2.761	.070	0.718	0	1.000	.832
Circ	WB.Ot.Cr	5	-0.178	0.104	-1.717	.185	0.496	0	1.000	.516
Circ	WB.Ot.Ar	5	-0.366	0.190	-1.927	.150	0.553	0	1.000	.184
Circ	WB.Ot.Dm	5	-0.324	0.076	-4.295	**.023**	0.860	0	1.000	.064
Circ	WB.Ot.P	5	-0.071	0.125	-0.569	.609	0.097	0	1.000	.435

Communalities

	Initial	Extraction
On.Ar	1.000	0.958
On.Dm	1.000	0.959
On.Vc.Dm	1.000	0.780
Ot.Ar	1.000	0.959
Ot.Dm	1.000	0.958

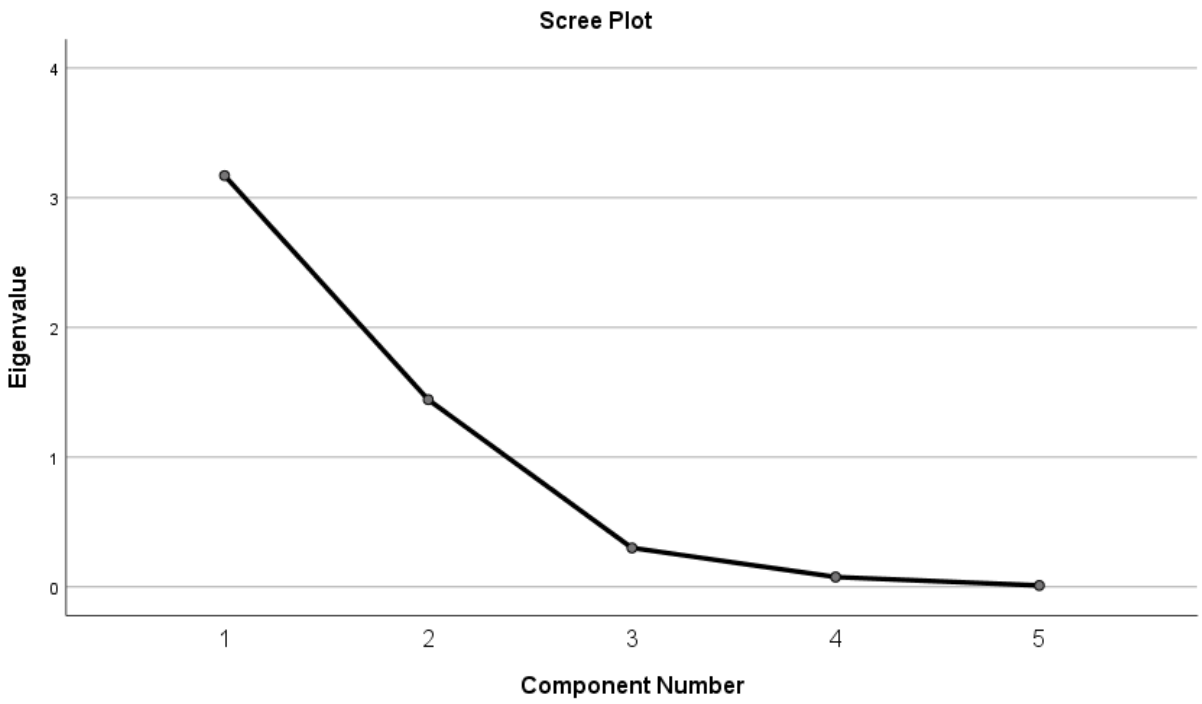
Extraction Method: Principal

Total Variance Explained

Component	Initial Eigenvalues Total	% of Variance	Cumulative %	Extraction Sums of Squared Loadings Total	% of Variance	Cumulative %	Rotation Sums of Squared Loadings[a] Total
1	3.171	63.413	63.413	3.171	63.413	63.413	2.887
2	1.443	28.862	92.276	1.443	28.862	92.276	2.248
3	0.300	6.003	98.278				
4	0.076	1.511	99.789				
5	0.011	0.211	100.000				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.



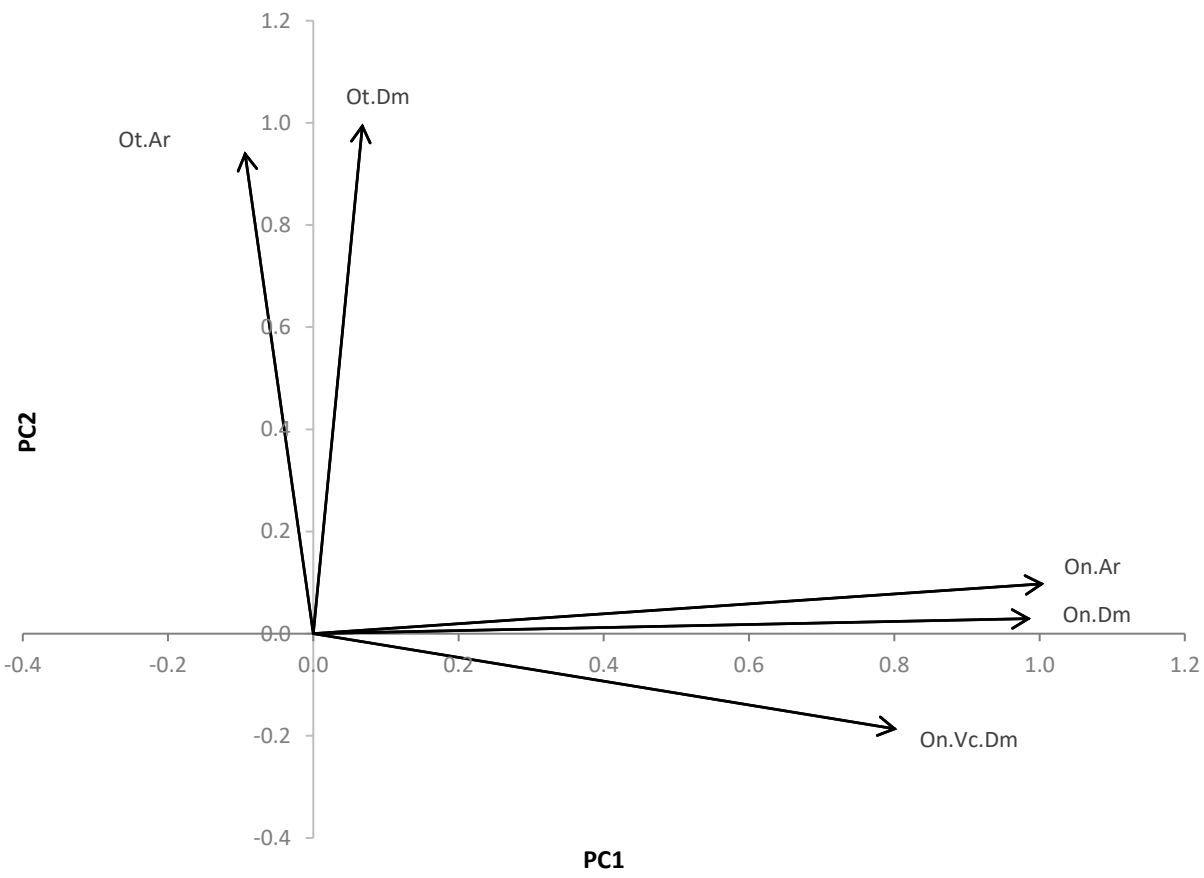
Pattern Matrix[a]

	Component 1	2
On.Ar	**1.007**	0.098
	0.000	0.000
On.Dm	**0.988**	0.030
	0.000	0.000
On.Vc.Dm	**0.804**	-0.187
	0.000	0.000
Ot.Dm	0.068	**0.999**
	0.000	0.000
Ot.Ar	-0.094	**0.944**
	0.000	0.000

Extraction Method: Principal

a. Rotation converged in 4 iterations.

Component plot in rotated space



Results were obtained by excluding cases listwise. Inspection of the correlation matrix showed that all variables had at least one correlation coefficient greater than 0.3. The overall Kaiser-Meyer-Olkin (KMO) measure was 0.657 according to Kaiser (1974). Bartlett's test of sphericity was statistically significant ($p < .0005$), indicating that the data was likely factorizable.

A Direct Quartimin oblique rotation was employed to aid interpretability. The rotated solution exhibited 'simple structure' .