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**Supporting information for article:**

**High-energy synchrotron-radiation-based X-ray micro-tomography enables non-destructive and micro-scale palaeohistological assessment of macro-scale fossil dinosaur bones**

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**Table S1** Selected studies on fossil vertebrate skeletons conducting virtual-palaeohistological analyses.

Group	Taxon	Facility	Beamline	Material	Voxel	Detector	FOV (L)	Energy	Range	Exposure	Projections	Propagation	References
					µm	Pixel Size	mm	keV	degrees	sec	times	mm	
Vertebrates	<i>Shuyu zhejiangensis</i> (agnathan)	SLS	Tomcat	Skull	3.5	2048*2048	7.00	8–45	180	0.1	1501	?	Gai, 2018
	Thyestiida (osteostracans)	ESRF	ID19	Dermal skeleton	0.761	2048*2048	1.56	69	360	0.1	2999	100	Bremer et al., 2021
	Osteostraci	ESRF	ID19	Scale	0.28–0.56	2048*2048	0.57–1.15	19	?	0.3–0.4	1500	?	Qu et al., 2015
	<i>Compagopiscis croucheri</i> (placoderm)	ESRF	ID19	Humerus	0.678	2048*2048	1.39–2.29	30–123	180–360	0.4–2.0	1500–6000	10–950	Sanchez et al., 2012; Sanchez et al., 2013
	Placodermi	SLS	Tomcat	Dermal skeleton	0.74	2048*2048	1.52	21.5	180	?	1501	?	Giles et al., 2013
	<i>Radotina tessellata</i> and <i>Kosoraspis peckai</i> (placoderms)	ESRF	ID19	Tooth/skull	0.72	2560*2160	1.84	~124	360	0.25	6000	300	Vaškaninová et al., 2020
	Actinopterygii	ESRF DLS	ID19 I13-2	Dentary	0.716	2560*2160	1.83	19–112	360	0.03–0.2	2999	20–220	Davesne et al., 2021
	Acipenseriformes (actinopterygian)	ESRF	BM05	Dentary/pectoral-fin spines	4.35	2048*2048	8.91	92	360	0.06	4998	1.5	During et al., 2022
	<i>Eusthenopteron foordi</i> (sarcopterygian)	ESRF	ID19	Humerus	0.678	2048*2048	1.39–2.29	30–123	360	0.4–2.0	1500–6000	5–950	Sanchez et al., 2012; Sanchez et al., 2013; Sanchez et al., 2014
	<i>Acanthostega gunnari</i>	ESRF	ID19	Humerus	0.678–1.12	2048*2048	1.39–2.29	30–123	360	0.4–2.0	1500–6000	5–950	Sanchez et al., 2016
	<i>Seymouria sanjuanensis</i> and <i>Discosauriscus austriacus</i> (seymouriamorphs)	ESRF	BM05	Humerus	3.03	2560*2160	7.76	120	360	0.1	6000	1360	Estefa et al., 2020
	<i>Richardoestesia isosceles</i> (coelurosaur)	ESRF	ID19	Tooth	1.28	2048*2048	2.62	31–53	180–360	0.15–0.3	2499–5000	200	Dumont et al., 2016
	<i>Compsognathus longipes</i> (coelurosaur) and aff. <i>Deinonychus antirrhopus</i> (maniraptor)	ESRF	BM05	Humerus/ ulna	6.43–6.46	2048*2048– 2560*2160	1.32–1.65	88–160	360	0.04–0.25	6000	225–2100	Voeten et al., 2018
	<i>Daliansaurus liaoningensis</i> (maniraptor)	SPring-8	BL20B2	Ulna/radius	2.75	2048*2048	11.26	30	180	0.12	1800	300	Shen et al., 2019
<i>Halzkaraptor escuilliei</i> (maniraptor)	ESRF	BM05	Tibia/radius	2.25	2560*2160	5.76	100	360	0.15	6000	700	Cau et al., 2017	
<b>cf. <i>Fukuiraptor kitadaniensis</i> (megaraptoran)</b>	<b>SPring-8</b>	<b>BL28B2</b>	<b>Femur</b>	<b>3.99</b>	<b>4096*3008</b>	<b>16.34</b>	<b>200</b>	<b>180–360</b>	<b>0.04</b>	<b>3600</b>	<b>3000</b>	<b>This Study</b>	

Vertebrates

Tetrapodomorphs

Dinosaurs

	Avialans	<i>Archaeopteryx lithographica</i>	ESRF	ID19	Humerus/ ulna	3.11– 6.56	2048*2048– 2560*2160	6.37– 16.79	129–184	360	0.15–0.32	4998–6000	160–900	Voeten et al., 2018	
		<i>Yanornis martini</i> (enantiornithine)	SPRING-8	BL20B2	Tibia/pubis	2.75	2048*2048	11.26	37.7	180	0.12	1800	300	Wang et al., 2019; Monfroy et al., 2022	
		<i>Hesperornis regalis</i> and <i>Ichthyornis disper</i> (ornithurines)	ESRF	ID19	Tooth/dentary	1.28– 3.50	2048*2048	2.62– 7.16	31–53	180–360	0.15–0.3	2499–5000	200	Dumont et al., 2016	
	Mammaliaforms		<i>Morganucodon watosoni</i> and <i>Kuehneotherium</i> spp.	ESRF SLS	ID19 Tomcat	Tooth/dentary	0.28– 0.70	2560*2160	0.71– 1.79	20–26.5	360	0.15–0.300	1500–2499	14–405	Newham et al., 2021
			<i>Australopithecus prometheus</i>	DLS	I12	Tooth	3.25– 7.91	2560*2160	8.32– 20.25	140	360	0.25	9000	?	Beaudet et al., 2021
		Hominids	Hominidae	ESRF	ID19	Tooth	0.60– 4.96	2048*2048	1.22– 10.15	30–167	180–360	0.3–0.9	150–5000	200–4000	Smith et al., 2007; Smith & Tafforeau, 2008; Tafforeau & Smith, 2008; Smith et al., 2010; Tafforeau et al., 2012; Le Cabec et al., 2015; Smith et al., 2015; Smith et al., 2018