

**Table S1**

Review of the morphological analysis of orbital region, eye tunics, eyelids and orbital glands of the Caniformia suborder.

Infraorder	Parvordo	Family	Species	Skull with orbital region	Eye tunics	Upper and lower eyelids	Superficial gland of the third eyelid with third eyelid	Deep gland of the third eyelid	Lacrimial gland	Reference
Canoidea		Canidae	<i>Canis familiaris</i>	+	+	+	+	A	+	[24,84,85,86,107,111,113,135,143,150,151,152,158,165-168,170-174]
			<i>Cerdocyon thous</i>	+	+ AED, CD TeED	+	+		+	[25,67,87,97,175]
			<i>Chrysocyon brachyurus</i>		+	+	+			[97]
			<i>Canis lupus</i>	+	+ cornea AED, CD TeED					
			<i>Canis dingo</i>		+					[25,66,84,86]
			<i>Vulpes corsac</i>		+ cornea					[84,86]

			<i>Vulpes vulpes</i>		+ lens pupil retina AED, CD,TeEd					[84,86]  [25,66,69,96,115]
			<i>Vuples lagopus</i>		+ retina AED, CD TeED					[25,115]
			<i>Canis lupus</i>		+ AED					[66]
			<i>Canis lupus lupus</i>		+ lens pupil					[96]
			<i>Canis latrans</i>	+	+					[175]
			<i>Canis rufus</i>	+	+					
			<i>Lycaon pictus pictus</i>	+	+	+	+	A	+	[68]
			<i>Lycalopex culpaesus</i>	+						[176]
			<i>Vulpes lagopus</i>	+						[127]
			<i>Nyctereutes procyonoides</i>	+						[130]
			<i>Urocyon cinereoargenteus</i>		+ lens AED, CD TeED					[25,66,177]
			<i>Speothos venaticus</i>		+ AED, CD TeED					[25]

			<i>Alopex lagopus</i>		+ tapetum					[171]
Arctoidea	Ursida	Ursidae	<i>Ursus arctos horribilis</i>	+	+					[26,178]
			<i>Melursus ursinus</i>	+	+ AED, CD TeED tapetum					[25,32,33,178]
			<i>Ursus arctos</i>	+	+ AED, CD TeED					[25,28,29,30,31,66]
			<i>Ursus americanus</i>		+ retina AED, CD TeED					[23,25,66]
			<i>Ursus maritimus</i>		+ retina					
			<i>Selenarctos thibetanus</i>		+ AED, CD, TeED					[178]
			<i>Ursus malayanus</i>		+ central area					[25]
										[24]
			<i>Callorhinus ursinus</i>		+ retina					[179]
			<i>Zalophus californianus</i>		+	+	+		+	[91,104,139,180]

	Pinnipedia	Otariidae	<i>Phoca largha</i>		+				[181]
			<i>Eumetopias jubatus</i>		+				[24,89]
			<i>Arctocephalus pusillus</i>		+				[89]
				+	+				[75,83,119,121,131,138,182]
	Odobenidae		<i>Odobenus rosmarus</i>	+	+			+	[76,89,104,132,163,164]
				+	+			+	[75,83,131]
	Phocidae		<i>Leptonychotes weddellii</i>		+	+			[92]
			<i>Halichoerus grypus</i>		+				[106]
			<i>Pusa caspica</i>		+				[116,118]
			<i>Pusa sibirica</i>		+				[89,116,181]
			<i>Pagophilus groenlandicus</i>		+				[116,117,122]
			<i>Cystophora cristata</i>		+				[103,106,111]
			<i>Phoca vitulina</i>		+				[72,182]

			<i>Ommatophoca rossi</i>		+					[24] [133]
			<i>Mirounga angustirostris</i> <i>Mirounga sp.</i>	+	+		+			[180] [104] [75,131,181,182,183]
	Musteloidea	Ailuridae	<i>Ailuropoda melanoleuca</i>		+ retina					[100]
			<i>Ailurus fulgens</i>		+ AED, CD, TeED				[25]	
		Mephitidae	<i>Mydaus sp.</i>		+ AED, CD, TeED					[25]
			<i>Meles meles</i>	+ AED, CD TeED						[25,66,128,130]
			<i>Martes foina</i>	+						[128]
			<i>Lutra lutra</i>	+	+ AED tapetum					[24,69,128,129,184]
			<i>Lutra annectens</i>		+ AED, CD TeED					[25]

		Mustelidae	<i>Lutra marculicollis</i>		+ AED, CD TeED					[25]
			<i>Mustela putorius furo</i>	+	+					[161,184,185,186]
			<i>Mustela putorius</i>	+	+ retina, tapetum					[24,112,185]
			<i>Enhydra lutris</i>		+ retina pupil tapetum					[99,105,181]
			<i>Mustela vison</i>		+ retina			+		[162,187,188]
			<i>Mustela nivalis</i>		+ AED, CD, TeED					[25,69]
			<i>Vormela peregusna</i>		+ AED, CD TeED					[25]
			<i>Martes flavigula</i>		+ AED, CD TeED					[25]
			<i>Martes martes</i>		+ tapetum					

			<i>Ictonyx striatus</i>		+	<i>tapetum</i>				[171]
										[171]
		Procyonidae	<i>Procyon lotor</i>		+	retina ciliary processes choroid AED, CD, TeED		+		[24,25,66,126,162]
			<i>Procyon cancrivorus</i>		+	AED				[69]
			<i>Potos flavus</i>		+	retina <i>tapetum</i>				[24,126]
			<i>Nasua nasua</i>		+	retina <i>tapetum</i>				[24,126]
			<i>Bassariscus astutus</i>		+	AED, CD TeED				[25]
			<i>Bassaricyon alleni</i>		+					[24]

A – absent, AED – axial eye diameter, CD – corneal diameter, TeED – transverse (equatorial) eye diameter, + presence of the anatomical study of the chosen structure

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