

Legends to Supplementary Information:

Table S1. Bird species included in the study, colour categories and accession numbers.

Table S2. Range and coefficient of variation (CV) for the different vibrational characteristics measured in the feathers of 47 species of birds. Vibrational characteristics refer to the spectral position (X), intensity (Y), width at half maximum (W) and area (A) of diagnostic Raman bands 1, 2 and 3 for pheomelanin and Raman bands 1, 2, 3 and 4 for eumelanin. X and W values are in cm^{-1} and Y and A values are arbitrary units obtained from the Lorentzian deconvolution of Raman spectra.

Species	Accession number	Order	Family	Colour category
<i>Oenanthe leucura</i>	MNCN-22128	Passeriformes	Muscicapidae	Black
<i>Corvus corax</i>	MNCN-21600	Passeriformes	Corvidae	Black
<i>Dryocopus martius</i>	MNCN-4824	Piciformes	Picidae	Black
<i>Fulica atra</i>	MNCN-21843	Gruiformes	Rallidae	Black
<i>Turdus merula</i>	MNCN-21954	Passeriformes	Turdidae	Black
<i>Ficedula hypoleuca</i>	MNCN-14194	Passeriformes	Muscicapidae	Black
<i>Uria aalge</i>	MNCN-16387	Charadriiformes	Alcidae	Black
<i>Haematopus ostralegus</i>	MNCN-21944	Charadriiformes	Haematopodidae	Black
<i>Larus argentatus</i>	MNCN-16512	Charadriiformes	Laridae	Grey
<i>Motacilla cinerea</i>	MNCN-30716	Passeriformes	Motacillidae	Grey
<i>Pyrrhula pyrrhula</i>	MNCN-20699	Passeriformes	Fringillidae	Grey
<i>Oenanthe oenanthe</i>	MNCN-22130	Passeriformes	Muscicapidae	Grey
<i>Lanius excubitor</i>	MNCN-12052	Passeriformes	Laniidae	Grey
<i>Ardea cinerea</i>	MNCN-21297	Pelecaniformes	Ardeidae	Grey
<i>Sterna hirundo</i>	MNCN-16418	Charadriiformes	Sternidae	Grey
<i>Columba livia</i>	MNCN-21814	Columbiformes	Columbidae	Grey
<i>Turdus pilaris</i>	MNCN-12521	Passeriformes	Turdidae	Dark brown
<i>Coccothraustes coccothraustes</i>	MNCN-28150	Passeriformes	Fringillidae	Dark brown
<i>Cettia cetti</i>	MNCN-13686	Passeriformes	Cettiidae	Dark brown
<i>Cinclus cinclus</i>	MNCN-29543	Passeriformes	Cinclidae	Dark brown
<i>Turdus philomelos</i>	MNCN-12514	Passeriformes	Turdidae	Dark brown
<i>Stercorarius skua</i>	RM-3049	Charadriiformes	Stercorariidae	Dark brown
<i>Numenius phaeopus</i>	MNCN-2402	Charadriiformes	Scolopacidae	Dark brown
<i>Passer domesticus</i>	MNCN-15713	Passeriformes	Passeridae	Dark brown
<i>Calidris ferruginea</i>	MNCN-2236	Charadriiformes	Scolopacidae	Dark orange
<i>Sitta europaea</i>	Wild	Passeriformes	Sittidae	Dark orange
<i>Monticola saxatilis</i>	MNCN-12809	Passeriformes	Muscicapidae	Dark orange
<i>Lanius collurio</i>	MNCN-28473	Passeriformes	Laniidae	Dark orange
<i>Coracias garrulus</i>	MNCN-4201	Coraciiformes	Coraciidae	Dark orange
<i>Phalaropus fulicarius</i>	RM-2919	Charadriiformes	Scolopacidae	Dark orange
<i>Calidris canutus</i>	RM-2552	Charadriiformes	Scolopacidae	Dark orange

<i>Anas strepera</i>	Wild	Anseriformes	Anatidae	Dark orange
<i>Gavia stellata</i>	RM-10	Gaviiformes	Gaviidae	Dark orange
<i>Alcedo atthis</i>	MNCN-16286	Coraciiformes	Alcedinidae	Dark orange
<i>Acrocephalus scirpaceus</i>	MNCN-13668	Passeriformes	Sylviidae	Light brown
<i>Cursorius cursor</i>	MNCN-2032	Charadriiformes	Glareolidae	Light brown
<i>Glareola pratincola</i>	MNCN-2020	Charadriiformes	Glareolidae	Light brown
<i>Cercotrichas galactotes</i>	MNCN-13143	Passeriformes	Muscicapidae	Light brown
<i>Burhinus oedicephalus</i>	MNCN-27270	Charadriiformes	Burhinidae	Light brown
<i>Ixobrychus minutus</i>	MNCN-1039	Pelecaniformes	Ardeidae	Light orange
<i>Perdix perdix</i>	MNCN-21775	Galliformes	Phasianidae	Light orange
<i>Oenanthe hispanica</i>	MNCN-28270	Passeriformes	Muscicapidae	Light orange
<i>Upupa epops</i>	MNCN-4295	Bucerotiformes	Upupidae	Light orange
<i>Saxicola rubetra</i>	MNCN-31000	Passeriformes	Muscicapidae	Light orange
<i>Pterocles alchata</i>	MNCN-21630	Pterocliiformes	Pteroclididae	Light orange
<i>Pterocles orientalis</i>	MNCN-21623	Pterocliiformes	Pteroclididae	Light orange
<i>Limosa limosa</i>	MNCN-2500	Charadriiformes	Scolopacidae	Light orange

Vibrational characteristic	Range	CV
Pheomelanin X1	523.8-718.9	0.07
Pheomelanin Y1	0.4-185.9	0.79
Pheomelanin W1	1.3-76.2	0.83
Pheomelanin A1	2.4-23,317.3	1.26
Pheomelanin X2	1,342.5-1,580.7	0.02
Pheomelanin Y2	8.9-431.4	0.81
Pheomelanin W2	3.5-77.1	0.61
Pheomelanin A2	188.4-45,834.4	0.93
Pheomelanin X3	1,501.4-2,105.3	0.05
Pheomelanin Y3	0.1-79.7	1.00
Pheomelanin W3	0.6-47.4	1.01
Pheomelanin A3	0.7-10,828.0	1.76
Eumelanin X1	444.1-571.4	0.06
Eumelanin Y1	0.7-18.8	0.67
Eumelanin W1	0.5-38.7	0.92
Eumelanin A1	0.8-329.6	0.75
Eumelanin X2	1,334.2-1,409.5	0.01
Eumelanin Y2	6.9-176.9	0.56
Eumelanin W2	2.4-77.1	0.38
Eumelanin A2	895.4-25,719.9	0.67
Eumelanin X3	1,514.3-1,569.3	0.01
Eumelanin Y3	10.9-232.1	0.55
Eumelanin W3	2.4-77.1	0.33
Eumelanin A3	1,267.5-37,871.8	0.66
Eumelanin X4	1,968.0-2,078.3	0.01
Eumelanin Y4	1.0-22.3	0.78
Eumelanin W4	0.5-43.2	1.00
Eumelanin A4	17.1-821.7	0.96