Table S1. Characteristics of animals included in the study

No.	Breed	Sex	Neutering	Age (years)	Animal hygiene product use	Owner's hand cream use frequency		Food			Veterinary clinic visits	
						>1×/week	<1×/week	Home-cooked	Canned	Dry	<3×/year	>3×/year
1	Dachshund	male	Yes	12	No		+	+			+	
2	Crossbreed	male	Yes	1.5	Yes	+				+	+	
3	Crossbreed	female	Yes	9	Yes		+			+	+	
4	Brussels griffon	male	Yes	3.5	Yes	+				+	+	
5	Dachshund	female	Yes	6.5	Yes	+		+			+	
6	Swiss shepherd	female	Yes	8	Yes	+				+	+	
7	Dobermann	female	No	2.5	Yes		+			+		+
8	French bulldog	male	No	1.5	No	+		+			+	
9	Maltese	female	No	12	Yes	+			+		+	
10	German shepherd	male	No	5	No		+	+			+	
11	Cocker Spaniel	female	No	6	Yes		+	+			+	
12	Cocker Spaniel	male	No	4	Yes	+		+				+
13	Cocker Spaniel	female	No	9	Yes	+		+			+	
14	Yorkshire terrier	female	Yes	3	Yes	+			+			+
15	Crossbreed	male	Yes	14	No	+				+	+	
16	Crossbreed	female	Yes	4.5	No		+			+		+
17	Crossbreed	female	Yes	4	No	+			+		+	
18	Crossbreed	male	Yes	2.5	Yes		+			+	+	
19	Irish wolfhound	female	No	2	Yes		+	+			+	
20	Labrador retriever	female	Yes	13	No		+			+	+	
21	Miniature schnauzer	male	No	17	No		+		+		+	
22	Crossbreed	male	Yes	13.5	No		+			+	+	
23	Crossbreed	female	Yes	13	Yes	+				+		+
24	Cocker Spaniel	female	No	1.5	Yes	+				+		+
25	Yorkshire terrier	female	Yes	14	Yes	+			+			+
26	Newfoundland	female	No	3	Yes	+		+				+
27	Labrador retriever	male	Yes	12	Yes	+				+	+	
28	Shih Tzu	female	Yes	11	Yes	+		+			+	
29	Chinese crested dog	male	Yes	11	Yes	+				+		+
30	Crossbreed	male	Yes	8	Yes		+			+	+	
31	Shih Tzu	male	No	5	Yes		+		+			+
32	Crossbreed	female	Yes	9	Yes	+			+			+
33	Miniature Schnauzer	male	No	2.5	Yes	+				+		+
34	Jack Russell terrier	male	No	1	No		+			+	+	
35	Yorkshire terrier	male	No	1	Yes	+		+			+	
36	Chinese crested dog	female	Yes	13	Yes	+				+	+	
37	Shih Tzu	female	Yes	13	Yes		+			+		+
38	Pug	male	Yes	9	Yes		+			+	+	
39	Yorkshire terrier	male	No	9	Yes		+		+		+	
40	Crossbreed	male	Yes	12	Yes	+				+	+	
41	Golden retriever	male	No	3.5	Yes	+				+	+	
42	German shepherd	male	No	12	No	+		+			+	
43	Crossbreed	male	Yes	14	Yes	+			+			+
44	Pomeranian	male	No	1	Yes	+				+		+
45	Shih Tzu	female	No	11 months	Yes	+			+			+
46	Swiss shepherd	female	No	10 months	Yes		+	+			+	
47	Crossbreed	female	Yes	1.5	Yes		+		+			+

48	Yorkshire terrier	male	No	0.5	Yes	+				+			+
49	Shih Tzu	female	No	0.5	Yes	+				+			+
50	Shih Tzu	male	Yes	1.5	No		+	+					+
51	Shih Tzu	male	No	1.5	Yes	+		+					+
52	Lagotto Romagnolo	female	No	1.5	Yes		+	+			+		
53	Miniature poodle	male	No	14	Yes	+		+					+
54	Crossbreed	male	No	16	Yes		+	+			+		
55	Hovawart	female	No	4	No		+	+			+		
56	Hovawart	male	No	4	No		+	+					+
57	Crossbreed	male	Yes	9	Yes	+				+			+
58	German shepherd	female	Yes	7	No	+		+					+
59	German shepherd	female	Yes	12	Yes		+			+		+	
60	Cocker Spaniel	male	No	8	Yes	+				+			+
61	Cocker Spaniel	female	Yes	8	Yes	+				+			+
62	Cocker Spaniel	female	Yes	9	Yes	+				+			+
63	Cocker Spaniel	female	No	3	Yes	+				+			+
64	Cocker Spaniel	female	Yes	15	Yes	+				+		+	
65	West Highland white terrier	female	Yes	5	Yes	+		+				+	
66	Crossbreed	female	Yes	7	Yes	+				+			+
67	Maltese	male	No	1	Yes	+					+		+
68	Maltese	female	No	7	Yes	+				+			+
69	Yorkshire terrier	male	Yes	7	Yes	+				+			+
70	Cockapoo	male	Yes	3.5	Yes	+		+				+	
71	Shih Tzu	female	No	4.5	Yes		+				+	+	
72	Maltese	female	Yes	9	Yes		+				+		+
73	Crossbreed	male	Yes	5	Yes	+		+					+
74	Bernese mountain dog	female	No	1.5	Yes	+				+		+	
75	Crossbreed	male	Yes	12	Yes	+				+			+
76	Crossbreed	female	Yes	7	Yes	+		+				+	
77	Dogue de Bordeaux	female	Yes	4	No		+	+				+	
78	Shih Tzu	male	No	13	Yes	+				+			+
79	Cocker Spaniel	male	Yes	6	Yes	+					+		+
80	Cocker Spaniel	male	Yes	7	Yes	+					+		+
81	Akita	female	No	9 months	Yes	+				+			+
82	Cocker Spaniel	female	No	13	No		+	+				+	
83	Cocker Spaniel	male	No	9	Yes	+					+		+
84	Polish lowland sheepdog	female	Yes	13	No		+	+				+	
85	Pekingese	male	Yes	7	No		+	+				+	
86	Shih Tzu	male	Yes	3.5	No		+	+				+	
87	Shih Tzu	female	No	8 months	Yes	+					+		+
88	Crossbreed	male	No	13	Yes	+					+		+
89	Cocker Spaniel	female	No	6.5	No		+	+				+	
90	Cocker Spaniel	female	Yes	6	No		+	+				+	
91	Cocker Spaniel	male	Yes	9	Yes	+				+			+
92	Crossbreed	female	No	13	Yes	+				+			+
93	Shih Tzu	male	No	8	Yes	+				+			+
94	Yorkshire terrier	female	No	14	Yes	+				+			+
95	Crossbreed	female	Yes	2.5	No		+			+		+	
96	Crossbreed	male	Yes	7	No	+					+		+
97	Crossbreed	male	Yes	13	Yes		+				+	+	
98	Cocker Spaniel	female	Yes	2.5	Yes	+					+		+

99	West Highland white terrier	male	Yes	7	No		+	+		+	
100	Crossbreed	male	No	14	Yes	+			+		+

Table S2. Optimised tandem mass spectrometry parameters for multiple-reaction mode (MRM) analysis of benzophenone (BP) compounds in dog hair samples

Compound	Internal standard	MRM 1	MRM 2	Fragmentor (V)	Collision energy (eV)	Ionisation mode
BP-1	BP-d_{10}	215>137	215>105	160	16/20	ESI+
BP-2	BP-d_{10}	245>135	245>109	160	12/16	ESI−
BP-3	BP-d_{10}	229>151.1	229>105	160	16/20	ESI+
BP-8	BP-d_{10}	245>121	245>65	160	16/40	ESI+

MRM 1 – transition used for quantification; MRM 2 – transition used for confirmation

Table S3. Linear range, method detection limits (MDL)s, method quantification limits (MQL)s, recovery and precision of the selected benzophenone (BP) compounds in dog hair samples

Compound	Linear range (ng/g)	MDL (ng/g)	MQL (ng/g)	Recovery (%) Low level	Medium level	High level	Inter-day precision (RSD %)
BP-1	2.00–625	0.50	2.00	98.5	98.0	101.9	11.9
BP-2	1.00–625	0.30	1.00	108.9	107.8	101.5	3.7
BP-3	2.00–625	0.50	2.00	92.1	99.5	101.0	3.8
BP-8	3.00–625	0.90	3.00	113.8	99.1	95.8	12.2

Samples quantified at concentrations >625 ng/g were diluted to adapt them to the linear range. RSD – relative standard deviation

Table S4. Concentrations (ng/g) of benzophenones (BP) in the analysed dog hair samples

Hair sample	Concentration (ng/g)			
	BP-1	BP-2	BP-3	BP-8
1	<MDL	<MDL	5.31	<MDL
2	171.00	<MQL	30.50	<MDL
3	91.70	<MQL	10.10	<MDL
4	<MDL	<MQL	26.10	<MDL
5	<MDL	<MQL	8.65	<MDL
6	42.6	<MQL	38.70	<MDL
7	<MDL	<MQL	23.50	<MDL
8	18.00	<MQL	7.12	<MDL
9	<MDL	<MDL	7.32	<MDL
10	<MDL	<MDL	13.20	<MDL
11	1.11	<MQL	30.70	<MDL
12	666.00	<MQL	267.00	<MDL
13	131.00	<MDL	44.60	<MDL
14	42.00	<MQL	84.50	<MDL
15	<MDL	<MQL	4.75	<MDL
16	<MDL	<MDL	10.00	<MDL
17	<MDL	<MQL	10.20	<MDL
18	3.71	<MQL	48.50	<MDL
19	<MDL	<MQL	14.30	<MDL

20	<MQL	<MQL	50.00	<MDL
21	<MQL	<MQL	6.87	<MDL
22	1.11	<MDL	13.70	<MDL
23	<MDL	<MQL	9.03	<MDL
24	12.20	<MQL	27.10	<MDL
25	<MDL	<MQL	397.00	<MDL
26	<MDL	<MDL	12.90	<MDL
27	<MQL	<MDL	194.00	<MDL
28	83.10	<MQL	153.00	<MDL
29	28.30	<MQL	60.00	<MDL
30	18.00	<MDL	80.90	<MDL
31	16.50	<MDL	34.30	<MDL
32	36.10	<MQL	62.30	<MDL
33	3.23	<MQL	134.00	<MDL
34	<MQL	<MQL	12.10	<MDL
35	<MDL	7.65	26.30	<MDL
36	<MQL	<MQL	44.30	<MDL
37	39.90	<MQL	20.00	<MDL
38	15.20	<MDL	7.49	<MDL
39	1310	<MQL	140.00	<MDL
40	11.50	<MDL	90.70	<MDL
41	41.30	<MQL	8.45	<MDL
42	<MDL	<MDL	13.10	<MQL
43	<MDL	<MDL	61.90	<MDL
44	371.00	<MDL	23.70	<MDL
45	<MDL	8.86	202.00	<MDL
46	<MQL	<MQL	15.90	<MDL
47	28.20	<MQL	114.00	<MDL
48	138.00	<MQL	357.00	<MDL
49	180.00	<MQL	26.10	<MDL
50	<MQL	<MDL	21.50	<MDL
51	<MDL	<MQL	22.00	<MDL
52	<MQL	5.43	15.20	<MQL
53	<MDL	<MQL	32.20	3.95
54	<MDL	<MDL	15.30	<MDL
55	2.33	<MDL	17.90	6.55
56	<MDL	<MDL	12.50	2.35
57	1.94	<MDL	124.00	<MDL

58	<MDL	<MDL	20.20	<MDL
59	<MDL	<MDL	9.27	<MDL
60	<MQL	<MDL	24.10	<MDL
61	<MDL	<MDL	34.40	<MDL
62	<MDL	<MDL	26.80	<MDL
63	<MDL	<MDL	30.70	<MDL
64	<MDL	<MDL	13.30	4.77
65	<MQL	<MDL	16.80	<MDL
66	14.40	<MDL	27.70	<MQL
67	<MDL	<MDL	71.10	<MQL
68	<MQL	<MDL	56.50	<MDL
69	100.00	8.23	1,765.00	<MQL
70	<MQL	<MDL	30.60	<MDL
71	34.10	<MDL	13.40	<MDL
72	59.30	<MDL	21.20	<MDL
73	<MDL	<MDL	12.00	<MDL
74	<MDL	<MDL	11.70	<MDL
75	<MDL	<MDL	53.30	<MDL
76	<MDL	<MDL	13.90	<MDL
77	<MDL	<MDL	25.20	<MDL
78	<MDL	<MDL	206.00	<MDL
79	<MDL	<MDL	68.50	<MDL
80	<MDL	<MDL	77.50	<MDL
81	125.00	<MQL	53.80	<MDL
82	<MDL	<MQL	35.30	<MDL
83	239.00	<MDL	157.00	<MDL
84	<MDL	<MDL	22.40	14.20
85	<MDL	<MQL	31.20	<MDL
86	<MDL	<MQL	38.20	<MDL
87	70.70	<MQL	67.80	<MDL
88	<MDL	<MQL	155.00	<MDL
89	<MDL	<MDL	38.50	<MDL
90	<MQL	<MDL	34.40	<MDL
91	<MDL	<MDL	60.10	<MDL
92	<MDL	<MDL	236.00	<MDL
93	<MQL	<MDL	99.10	<MDL
94	290.00	<MDL	40.00	<MDL
95	<MDL	<MDL	8.35	<MDL

96	<MQL	7.21	68.10	<MDL
97	<MDL	<MDL	45.90	<MDL
98	29.30	<MQL	57.50	<MDL
99	<MDL	<MQL	7.53	<MDL
100	<MDL	<MDL	148.00	<MDL

BP-1 – benzophenone 1; BP-2 – benzophenone 2; BP-3 – benzophenone 3; BP-8 – benzophenone 8; <MQL – below method quantification limit (2.00 ng/g for BP-1, 1.00 ng/g for BP-2 and 3.00 ng/g for BP-8); <MDL – below method detection limit (0.50 ng/g for BP-1, 0.30 ng/g for BP-2 and 0.90 ng/g for BP-8)