

Supplemental Table S1: Summary of tumor subtypes within major tumor classes.

<i>Tumor type</i>	<i>n tumors</i>	<i>% of all tumors</i>	<i>Tumor type</i>	<i>n tumors</i>	<i>% of all tumors</i>
<i>Epithelial tumors</i>	3,284	27.97	<i>Mesenchymal tumors</i>	3,504	29.85
<i>Epidermal tumors</i>	748	6.37	<i>Benign soft tissue tumors</i>	1,579	13.48
Papilloma	333	2.84	Lipoma	1,464	12.47
Squamous cell carcinoma	375	3.19	Angiolipoma	1	0.01
Basal cell carcinoma	19	0.16	Chondrolipoma	4	0.03
Basal cell carcinoma	16	0.13	Fibrolipoma	37	0.3
Fibroepithelial basal cell carcinoma	3	0.03	Lipoma	1458	12.12
Basosquamous carcinoma	2	0.02	Myelolipoma	1	0.01
<i>Hair follicle tumors</i>	1,448	12.34	Fibroma	108	0.92
Benign trichoepithelioma	391	3.33	Myxoma	7	0.06
Malignant trichoepithelioma	28	0.24	<i>Soft tissue sarcomas</i>	1,278	10.89
Malignant trichoepithelioma	27	0.23	Fibrosarcoma	160	1.36
Follicular Carcinoma	1	0.01	Perivascular wall tumor /	536	4.57
Trichofolliculoma	7	0.06	hemangiopericytoma		
Infundibular keratinizing acanthoma	395	3.36	Peripheral nerve sheath tumor	10	0.03
Tricholemmoma	7	0.06	Schwannoma	3	0.03
Benign pilomatricoma	243	2.07	Peripheral nerve sheath tumor	3	0.03
Malignant pilomatricoma	3	0.03	Malignant schwannoma	4	0.03
Trichoblastoma	374	3.19	Liposarcoma	36	0.31
<i>Sebaceous gland tumors</i>	623	5.31	Myxosarcoma	30	0.26
Sebaceous gland adenoma	390	3.32	Myxofibrosarcoma	21	0.18
Sebaceous gland epithelioma	199	1.70	Pleomorphic sarcoma ³	1	0.01
Sebaceous gland adenocarcinoma	31	0.26	Sarcoma NOS ²	484	4.12
Adenoma of hepatoid glands ¹	3	0.03	Sarcoma	136	1.16
<i>Tumors of apocrine glands</i>	163	1.39	Spindle cell sarcoma	338	2.88
Sweat gland adenoma	83	0.71	Spindle cell tumor	2	0.02
Sweat gland adenocarcinoma	66	0.56	Mesenchymal neoplasia	8	0.07
Ceruminous gland adenoma	2	0.02	<i>Vascular tumors</i>	486	4.14
Ceruminous gland adenocarcinoma	12	0.10	Hemangioma	363	3.09
<i>Epithelial tumors NOS²</i>	317	2.69	Hemangiosarcoma	122	1.04
Adenoma	167	1.42	Lymphangiosarcoma	1	0.01
Adenocarcinoma	38	0.32	<i>Muscle and bone tumors</i>	14	0.12
Adenocarcinoma	37	0.31	Leiomyoma	6	0.05
Adenosquamous carcinoma	1	0.01	Leiomyosarcoma	2	0.02
Epithelioma	32	0.27	Rhabdomyosarcoma	1	0.01
Benign epithelioma	12	0.10	Osteoma	1	0.01
Malignant epithelioma	20	0.16	Osteosarcoma	4	0.03
Epithelial neoplasia	17	0.14	<i>Round cell tumors</i>	3,876	33.02
Carcinoma NOS ²	63	0.54	Lymphoma	157	1.34
Carcinoma	59	0.51	Plasmacytoma	189	1.61
Anaplastic carcinoma	4	0.03	Mast cell tumor	1,920	16.35
<i>Melanocytic tumors</i>	1,013	8.63	Histiocytoma	1,420	12.10
Melanocytoma	381	3.25	Histiocytic sarcoma	50	0.43
Malignant melanoma	632	5.38	Histiocytosis NOS ²	7	0.06
Malignant melanoma	465	3.80	Round cell tumor NOS ²	133	1.13
Malignant dermal melanoma	167	1.58	<i>Tumors NOS²</i>	31	0.26
<i>Hamartoma</i>	183	1.55	Benign tumor	5	0.04
Hamartoma	32	0.27	Malignant tumor	26	0.22
Acrochordon	147	1.25			
Acrochordon	5	0.04			
Fibroepithelial polyp	16	0.14			
Skin polyp	126	1.07			
Sebaceous gland hamartoma	4	0.03			

¹ Only tumors of non-perianal origin were considered.² Not otherwise specified³ WHO classification: malignant fibrous histiocytoma

Supplemental Table S2: The 20 Swiss dog breeds with the lowest incidence rates for skin tumors between 2008 - 2013.

<i>Breed</i>	<i>n dogs registered in ANIS database</i>	<i>n skin tumors in Swiss Canine Cancer Registry</i>	<i>% of all tumor samples</i>	<i>Incidence rate (tumors per 100,000 dogs/year)</i>
Mountain Dog	36,623	8	0.07	21.8
Volpino italiano	6,638	2	0.02	30.2
Bolonka Zwetna	12,007	4	0.03	33.3
Appenzeller Mountain Dog	124,195	43	0.37	34.7
Miniature Pomeranian	8,501	3	0.03	35.3
Chihuahua	80,368	29	0.25	36.1
English Pointer	5,245	2	0.02	38.2
Border Collie	119,135	78	0.66	65.6
Pekingese	119,135	17	0.14	68.2
Old German Shepherd Dog	4,177	3	0.03	72
Tibet Spaniel	7,578	6	0.05	79.4
Sheperd Dog	11,115	9	0.08	81.2
Pomeranian	9,758	8	0.07	82.2
Collie	30,138	27	0.23	89.8
Havanese	16,621	15	0.13	90.5
Pinscher	19,037	18	0.15	94.8
Papillon	16,989	18	0.15	106.3
Cavalier King Charles Spaniel	26,235	29	0.25	110.9
Lucerne Hound	5,275	6	0.05	114.1
Toy Poodle	9,487	11	0.09	116.4
Average of all breeds				372.2
Total in database	3,189,208	11,740	100	