

Appendix A

Complete list of 594 pathogens identified in canines categorized by the following taxonomical groups: bacteria, ectoparasites, fungi, helminths, protozoa, rickettsia and viruses. Pathogens categorized as zoonotic/sapronotic/anthroponotic have been **bolded**; sapronoses are specifically denoted by a ❖. If the dog is involved in transmission, maintenance or detection of the pathogen it has been further underlined. Of these, if the pathogen is reported in dogs in Canada (Tier 1) it has been denoted by an *. If the pathogen is reported in Canada but canine-specific reports are lacking (Tier 2) it is marked with a ^C (see also Appendix C). Finally, if the pathogen has the potential to occur in Canada (Tier 3) it is marked by a ^D (see also Appendix D).

Bacteria

Acholeplasma laidlawii

Acinetobacter baumannii

Actinobacillus

actinomycetemcomitans ^C

Actinobacillus lignieresii

Actinomyces bovis

Actinomyces bowdenii

Actinomyces canis

Actinomyces catuli

Actinomyces coleocanis

Actinomyces hordeovulneris

Actinomyces hyovaginalis

Actinomyces israelii

Actinomyces naeslundii

Actinomyces neuii subsp.

anitratu ^C

Actinomyces odontolyticus

Actinomyces turicensis

Actinomyces urogenitalis

*Actinomyces viscosus**

Actinomyces weissii

Aliarcobacter butzleri ^C

Aliarcobacter cryaerophilus ^C

Anaerobiospirillum

succiniciproducens ^C

Anaerobiospirillum thomasi ^D

Archanobacterium pyogenes

Bacillus anthracis ^C

Bacillus circulans ^C

Bacillus subtilis ^D

Bacteroides spp. ^C

Bartonella clarridgeiae

Bartonella elizabethae

*Bartonella henselae**

Bartonella koehlerae

Bartonella quintana

Bartonella rochalimae

Bartonella vinsonii subsp.

*berkhoffii**

Bartonella washoensis

Bergeyella zoohelcum ^C

*Bordetella bronchiseptica**

Bordetella pertussis

Borrelia afzelii sensu lato

Borrelia burgdorferi sensu

*stricto**

Borrelia garinii sensu lato

Borrelia turicatae

Brachyspira alvinipulli-like

Brachyspira canis

Brachyspira intermedia

Brachyspira pilosicoli ^C

Brachyspira pulli

Brevibacterium spp. ^C

Brucella abortus

*Brucella canis**

Brucella suis

Burkholderia mallei

Burkholderia pseudomallei❖

*Campylobacter coli**

Campylobacter gracilis

Campylobacter helveticus

*Campylobacter jejuni**

Campylobacter lari

*Campylobacter upsaliensis**

Candidatus Mycoplasma

haemataparvum

*Capnocytophaga canimorsus**

Capnocytophaga cynodegmi ^C

Chlamydia abortus

Chlamydia caviae

Chlamydia felis

Chlamydia psittaci

Chromobacterium spp.❖ ^D

Chromobacterium violaceum❖

Citrobacter diversus

Citrobacter freundii ^C

Citrobacter spp. ^D

Clostridium botulinum type C

Clostridium botulinum type D

*Clostridium difficile**

*Clostridium perfringens**

Clostridium piliforme

Clostridium spp. ^C

Clostridium tetani ^C

Corynebacterium auriscanis ^D

Corynebacterium canis ^C

Corynebacterium freiburgense ^C

Corynebacterium spp. ^D

Corynebacterium ulcerans ^C

Corynebacterium urealyticum

*Coxiella burnetii**

Cytobacillus firmus ^C

Dermabacter hominis ^C

Dermatophilus congolensis

Eikenella corrodens ^C

Enterobacter cloacae ^C

Enterococcus avium ^C

Enterococcus canintestini

Enterococcus casseliflavus

Enterococcus faecalis ^C

*Enterococcus faecium**

Enterococcus gallinarum

Enterococcus hirae

Enterococcus malodoratus ^D

*Enterococcus spp.**

Erysipelothrix rhusiopathiae ^C

Erysipelothrix tonsillarum

serovar 7

Escherichia coli (EHEC, EPEC,

AIEC, UPEC, NTEC,

*ETEC)**

Eubacterium plautii ^D

Eubacterium spp. ^C

Flavobacterium spp. ^D

Francisella philomiragia

*Francisella tularensis**

*Fusobacterium spp.**

Gemella morbillorum ^C

Haemophilus aphrophilus ^C

Helicobacter bilis

Helicobacter bizzozeronii

Helicobacter canis ^D

Helicobacter cinaedi

Helicobacter cynogastricus

Helicobacter felis ^D

Helicobacter fennelliae

*Helicobacter heilmannii**

Helicobacter rappini

Helicobacter salomonis

*Klebsiella spp.**

Lactobacillus spp. ^C

Lawsonia intracellularis

Leptospira interrogans serovar

australis ^C

Leptospira interrogans serovar

*autumnalis**

Leptospira interrogans serovar

bataviae ^D

Leptospira interrogans serovar

*bratislava**

Leptospira interrogans serovar

*canicola**

Leptospira interrogans serovar

*grippotyphosa**

Leptospira interrogans serovar

*hardjo**

Leptospira interrogans serovar

*icterohaemorrhagiae**

Only a portion of the information obtained in this study is presented here. Please contact the authors for additional reference material on why a pathogen was or was not included in a particular step.

Leptospira interrogans serovar pomona*
Leptospira interrogans serovar zanoi^D
Leptotrichia buccalis^C
Listeria monocytogenes
Mesomycoplasma molare
Metamycoplasma gateae
Metamycoplasma spumans
Methicillin resistant
 CoNS strains (MRSS)
Methicillin resistant
Staph aureus (MRSA)*
Methicillin resistant
Staph pseudintermedius (MRSP)*
Micrococcus lylae^D
Micrococcus spp.^C
*Moraxella spp.**
Mycobacterium avium subsp *paratuberculosis*❖
Mycobacterium avium-intracellulare complex❖
Mycobacterium bovis
Mycobacterium chelonae-abscessus group^C
Mycobacterium fortuitum group^C
Mycobacterium genavense❖
Mycobacterium goodii❖
Mycobacterium kansasii^C
Mycobacterium microti
Mycobacterium smegmatis group❖
Mycobacterium Canine Leproid
Granulomas
Mycobacterium tuberculosis
Mycoplasma arginini
Mycoplasma bovigenitalium
Mycoplasma canis
Mycoplasma cynos
Mycoplasma edwardii^C
Mycoplasma felimitum
Mycoplasma felis
Mycoplasma haemocanis
Mycoplasma maculosum
Mycoplasma opalescens
Mycoplasma ovis
Neisseria animaloris^C
Neisseria canis^C
Neisseria dentiae^D
Neisseria spp.^C
*Neisseria weaveri**
Neisseria zoodegmatidis^C
Nocardia brasiliensis^C
Nocardia farcinica^C
Nocardia nova^C
Nocardia oitidiscaviarum^C
Oerskovia spp.^D

*Pasteurella canis**
*Pasteurella multocida**
*Pasteurella spp.**
Pediococcus spp.^D
Peptostreptococcus spp.^C
Plesiomonas shigelloides^C
Porphyromonas spp.^D
Prevotella spp.^C
Propionibacterium spp.^C
Proteus mirabilis^C
Proteus vulgaris^C
Providencia alcalifaciens
Providencia stuartii
*Pseudomonas aeruginosa**
Pseudomonas oryzihabitans^D
Pseudomonas spp.^C
Ralstonia pickettii❖
Rhodococcus equi
Riemerella anatipestifer^C
*Salmonella enterica (enteritidis, typhimurium)**
Serratia spp.
Shigella spp.
*Staphylococcus aureus**
Staphylococcus epidermidis^C
*Staphylococcus pseudintermedius**
Staphylococcus schleiferi coagulans
Staphylococcus schleiferi schleiferi
Staphylococcus sciuri
Staphylococcus spp.^D
Staphylococcus xylosus^C
Stenotrophomonas maltophilia^C
Stomatococcus mucilaginosus^C
Streptobacillus moniliformis^C
Streptococcus agalactiae
*Streptococcus canis (Group G)**
Streptococcus dysgalactiae dysgalactiae
Streptococcus dysgalactiae equisimilis
Streptococcus equi subsp. *equi*
Streptococcus equi subsp. *zooepidemicus*^C
Streptococcus Group D commensals
Streptococcus Group E
Streptococcus Group L
Streptococcus Group M
Streptococcus intermedius
Streptococcus mitis (α-streptococcus)^C
Streptococcus pneumoniae
Streptococcus pyogenes (α-streptococcus)^C
*Streptococcus spp.**

Streptococcus suis
Tannerella forsythia^D
Ureaplasma canigenitalium
Veillonella spp.^C
Wolbachia pipientis^D
*Yersinia enterocolitica**
*Yersinia pestis**
Yersinia pseudotuberculosis^C

Ectoparasites

Cheyletiella parasitovorax^D
*Cheyletiella yasguri**
*Ctenocephalides canis**
*Ctenocephalides felis**
Demodex canis
Echidnophaga gallinacea^C
Notoedres cati
Otodectes cynotis
Pneumonyssoides caninum
*Pulex irritans**
Pulex simulans
*Sarcoptes scabiei var canis**
Tunga penetrans
Xenopsylla cheopis^C

Fungi

Absidia spp.❖
Acremonium hyalinulum❖
Acremonium kiliense❖
Alternaria spp.❖
Aspergillus defleclus❖
Aspergillus flavipes❖
Aspergillus flavus❖
Aspergillus fumigatus❖
Aspergillus nidulans❖
Aspergillus niger❖
Aspergillus terreus❖
Basidiobolus spp.❖
Bipolaris spp.❖
*Blastomyces dermatitidis**
Candida albicans
Candida famata
Candida glabrata
Candida guilliermondii
Candida krusei
Candida parapsilosis
Candida rugosa
Candida tropicalis
Chlorella spp.❖
Chrysosporium spp.❖
Cladophialophora bantiana❖
Cladophialophora spp.❖
Cladosporium xylohypha❖
Coccidioides immitis
Coccidioides posadasii
Conidiobolus spp.❖

Cryptococcus albidus❖
Cryptococcus gattii❖*
Cryptococcus laurentii❖
Cryptococcus neoformans❖
Curvularia spp.❖
Emmonsia parva❖
Encephalitozoon cuniculi
Encephalitozoon hellem
Encephalitozoon intestinalis
Enterocytozoon bieneusi
Epidermophyton spp.
Fonsecaea spp.❖
Fusarium spp.❖
Geomyces spp.❖
Geosmithia argillacea❖
Geotrichum candidum❖
Histoplasma capsulatum❖*
Lagenidium spp.❖
Madurella spp.❖
*Malassezia pachydermatis**
*Microsporium canis**
Microsporium gypseum^C
Monocillium indicum❖
Mucor spp.❖
Ochronconis spp.❖
Paecilomyces fumosoroseus❖
Paecilomyces lilacinus❖^C
Paecilomyces variotii❖
Paracoccidioides brasiliensis❖
Penicillium spp.❖
Phialemonium spp.❖
Phialophora spp.❖
Pneumocystis carinii❖
Pneumocystis wakefieldae❖
Prototheca spp.❖
Pseudallescheria boydii❖
Pseudomicrodochium spp.❖
Pythium insidiosum❖
Rhinosporidium seeberi❖
Rhizomucor spp.❖
Rhizopus spp.❖
Rhodotorula glutinis❖
Rhodotorula mucilaginosa❖
Saksenaia spp.❖
Schizophyllum commune❖
*Sporothrix schenckii**
Trichoderma spp.❖
*Trichophyton spp.**
Trichosporon cutaneum❖

Helminths

Acanthocheilonema
*reconditum**
*Alaria alata**
*Alaria americana**
*Alaria canis**
*Alaria marcianae**

Alaria nasuae
Amphimerus pseudofelineus^D
Ancylostoma braziliense
Ancylostoma caninum
Ancylostoma ceylanicum
Angiostrongylus vasorum
*Apophallus donicus**
Ascaris lumbricoides
*Baylisascaris procyonis**
Brugia malayi
Brugia pahangi
Capillaria aerophila
Centrocestus armatus
Centrocestus formosanus
Clonorchis sinensis
*Cryptocotyle lingua**
Dicrocoelium dendriticum
Diocotophyma renale
*Diphyllobothrium spp.**
*Dipylidium caninum**
*Dirofilaria immitis**
Dirofilaria repens^D
Dracunculus insignis
Dracunculus medinensis
Echinochasmus fujianensis
Echinochasmus japonicus
Echinochasmus liliputanus
Echinochasmus perfoliatus
*Echinococcus granulosus**
*Echinococcus multilocularis**
Echinococcus vogeli^D
Echinostoma cinetorchus
Echinostoma hortense
Echinostoma ilocanum
Echinostoma spp.
Episthmium caninum
Filaroides hirthei
Gnathostoma spinigerum
Haplorchis pumilio
Haplorchis taichui
Haplorchis yokogawai
Heterobilharzia americana
Heterophyes dispar
Heterophyes heterophyes
Heterophyopsis continua
Macracanthorhynchus
hirudinaceus^D
Macracanthorhynchus ingens^C
*Mesocostoides spp.**
Metagonimus yokogawai
Metorchis albidus
*Metorchis conjunctus**
*Nanophyetus salmincola**
Ollulanus tricuspis
Onchocerca lupi
Oncicola canis
Opisthorchis felineus
Opisthorchis noverca

Opisthorchis viverrini
Oslerus osleri
Paragonimus africanus
Paragonimus heterotremus
Paragonimus hueit'ungensis
*Paragonimus kellicotti**
Paragonimus mexicanus
Paragonimus spp.
Paragonimus westermani
Phagicola longa^C
Phaneropsolus bonnei
Physaloptera rara
Plagiorchis muris
Prohemistomum vivax
Prosthodendrium glandulosum
Prosthodendrium obtusum
Pseudamphistomum truncatum
Pygidioopsis summa
Schistosoma incognitum
Schistosoma japonicum
Schistosoma mansoni
Schistosoma mekongi
Schistosoma rodhaini
Spirocerca lupi
Spirometra mansoni
Stellantchasmus falcatus
Stellantchasmus pseudocirratu
Stictodora fuscata
Strongyloides stercoralis^C
Taenia brauni^D
Taenia crassiceps^C
Taenia hydatigena
Taenia krabbei
Taenia multiceps^C
Taenia ovis
Taenia pisiformis
*Taenia serialis**
Taenia solium
*Taenia spp.**
Taenia taeniaeformis
Thelazia californiensis^D
Thelazia callipaeda^D
Toxascaris leonina
*Toxocara canis**
Trichinella spiralis
Trichuris vulpis
*Uncinaria stenocephala**

Protozoa

Acanthamoeba castellanii❖
Acanthamoeba culbertsoni❖
Acanthamoeba genotype T1❖
Babesia caballi
Babesia canis canis
Babesia canis rossi
Babesia canis vogeli
Babesia conradae

Babesia gibsoni
Babesia microti-like (*Babesia annae*)
Balamuthia mandrillaris❖^C
Balantidium coli^C
Blastocystis hominis
Blastocystis spp.
Caryospora bigentica-like
Cryptosporidium canis*
Cryptosporidium muris
Cryptosporidium parvum
Cyclospora cayetanensis
Entamoeba histolytica
Giardia duodenalis
 (*assemblage A1*)*
Giardia duodenalis
 (*assemblage B*)*
Giardia duodenalis assemblage C
Giardia duodenalis assemblage D
Hammondia heydorni
Hepatozoon americanum
Hepatozoon canis
 Intrahepatic biliary coccidiosis
 Intrapulmonary coccidiosis
Isospora burrowsi
Isospora canis
Isospora neorivolta
Isospora ohioensis
Leishmania amazonensis
Leishmania braziliensis
Leishmania donovani
Leishmania infantum*
Leishmania major
Leishmania panamensis
Leishmania peruviana
Leishmania tropica
Neospora caninum
Pentatrichomonas hominis
Sarcocystis aucheniae
Sarcocystis canis
Sarcocystis capracanis
Sarcocystis cruzi
Sarcocystis fayeri
Sarcocystis hircicanis
Sarcocystis meischeriana
Sarcocystis neurona
Theileria annulata
Theileria equi
Toxoplasma gondii
Tritrichomonas foetus
Trypanosoma brucei brucei
Trypanosoma brucei gambiense
Trypanosoma brucei rhodesiense
Trypanosoma caninum
Trypanosoma congolense
Trypanosoma cruzi*
Trypanosoma evansi

Rickettsia

Anaplasma phagocytophilum*
Anaplasma platys
Ehrlichia canis*
Ehrlichia chaffeensis
Ehrlichia ewingii
Ehrlichia ruminantium
Neorickettsia elokominica
Neorickettsia helminthoeca
Neorickettsia risticii
Neorickettsia risticii subsp. atypicalis
Orientia tsutsugamushi
Rickettsia akari
Rickettsia australis
Rickettsia conorii subsp. conorii
Rickettsia felis^C
Rickettsia japonica
Rickettsia prowazekii
Rickettsia rickettsii*
Stellanchasmus falcatus

Viruses

African Horse Sickness
 Astrovirus
Australian bat virus
Barmah Forest virus
 Bluetongue virus
Borna Disease virus
 Canine Acidophil Cell Hepatitis
 Canine Adenovirus 1
 Canine Adenovirus 2
 Canine Calicivirus (strain 48)
 Canine Coronavirus
 group 1 type 1
 Canine Coronavirus
 group 1 type 2 (pantropic biotype)
 Canine Coronavirus
 group 1 type 2 (subtype a and b)
 Canine Distemper virus
 Canine Herpesvirus 1
 Canine Influenza virus (H3N8)
 Canine Norovirus
 Canine Oral Papillomavirus
 Canine Papillomavirus type 2
 Canine Papillomavirus type 3
 Canine Papillomavirus type 6
 Canine Papillomavirus type 7
 Canine Parainfluenza virus (respiratory)
 Canine Parainfluenza virus 5 variant (non-respiratory)
 Canine Parvovirus 1
 Canine Parvovirus 2
 Canine Pneumovirus

Canine respiratory coronavirus group 2 (subtype a)

Canine rotavirus group A
 (*G3P[3], G3P[8]*)^D

Cowpox
 Coxsackievirus A9, A20
 Coxsackievirus B1
 Coxsackievirus B3
 Coxsackievirus B5
 Eastern equine encephalitis
 Ebola virus
 Echovirus 6
 Echovirus 7
 Encephalomyocarditis virus
 European bat virus
 Foot and Mouth Disease
 Hendra virus
 Hepatitis E virus
 Influenza virus A (Human; subtypes H1N1, H3N2, H5N1)
 Influenza virus B (Human)
 Influenza virus C (Human)
 Irkut virus
 Japanese encephalitis virus
 Kobuvirus
 La Crosse virus
 Lagos bat virus
 Louping ill
 Lymphocytic Choriomeningitis virus
 Mokola virus
 Mumps virus
 Nipah virus
 Poliovirus 1
 Porcine Herpesvirus 1
 Powassan virus
Rabies (genotype 1 phylogroup 1 subtype 1)*
 Reovirus MRV (Mammalian Reovirus) serotype 1
 Reovirus MRV (Mammalian Reovirus) serotype 2
 Reovirus MRV (Mammalian Reovirus) serotype 3
 Rift Valley Fever
 Ross River virus
 Sapovirus
 Sars-CoV-2 (Covid-19)
 Sin Nombre virus
 St. Louis encephalitis
 Tenshaw (Tensaw) virus infection
Tick borne encephalitis
 Unclassified enteroviruses
Venezuelan equine encephalitis
 Vesicular exanthema
 West Nile virus
 Western equine encephalitis