



POULTRY DIAGNOSTIC SUBMISSION GUIDE

Pathogen Suspected	Specimen	Sample Preparation	Diagnostic Method
VIRAL PATHOGENS			
Avian Encephalomyelitis Virus (AEV)	Brain	Refrigerate / Frozen Refrigerate, do not freeze!	PCR Histopathology
	Serum, Paper Strips	Refrigerate	Serology
Avian Hepevirus (aHEV/Avian Hepatitis E Virus)	Liver, Gut, Bile, (Spleen, Feces)	Refrigerate / Frozen	PCR Virus Isolation
Avian Influenza (AIV/Influenza Virus Type A)	Trachea, Lung, Brain, Cecal Tonsils, Tracheal /Choanal and Cloacal Swabs	Refrigerate / Frozen	PCR PCR Subtyping (H/N) Virus Isolation Sequencing
	Serum, Paper Strips	Refrigerate	Serology
Avian Nephritis Virus (ANV)	Kidney, Liver, Pancreas, Gut, Brain, Spleen, Bursa of Fabricius	Refrigerate / Frozen	PCR (ANV-1 & 2/ ANV-3) Virus Isolation Sequencing
Avian Ortho-Reovirus (ARV)	Joint: Cartilage, Synovia, Tendons, Capsule; Liver, Cecal Tonsils, Gizzard, (Spleen)	Refrigerate / Frozen	Virus Isolation PCR Sequencing
	Serum, Paper Strips	Refrigerate	Serology
Avian Paramyxovirus 3 (aPMV-3)	Serum	Refrigerate	Serology (HI)
Avian Polyomavirus (Hemorrhagic Nephritis and Enteritis of Geese (HNEG))	Kidney, Gut, Spleen, Liver		PCR
Avian Rhinotracheitis Virus (aMPV/ART/TRT/SHS)	Trachea, Tracheal Swabs, Infraorbital Sinus, Choana, Nasal Exudate, Conjunctiva, (Lung)	Refrigerate / Frozen	PCR (incl. Serotyping)
	Serum, Paper Strips	Refrigerate	Serology
Avian Rotavirus	Gut, Cloacal Swabs	Refrigerate / Frozen	PCR (Serotype A & D) Virus Isolation (inc. Serotyping)
Baiyangdian Duck Flavivirus (BYDV/Duck Egg Drop Flavivirus)	Brain, Ovary, Salpinx, Gut, Spleen, Tracheal and Cloacal Swabs	Refrigerate / Frozen	PCR Virus Isolation
Chicken Anemia Virus (CAV)	Cecal tonsils, Thymus, Spleen, Bursa of Fabricius, Bone marrow, Ovarium, Testicles, Liver, (Heart, Lung, Muscle)	Refrigerate / Frozen	PCR
	Serum, Paper Strips	Refrigerate	Serology
Chicken Astrovirus (ChAstV)	Liver, Spleen, Gut, Feces, (Kidney)	Refrigerate / Frozen	PCR (Group A & B) Virus Isolation Sequencing
	Serum, Paper Strips	Refrigerate	Serology (Group B only!)
Duck Adenovirus/127-like/ Egg Drop Syndrome 76 (DuADV/EDS 76)	Uterus: Shell Gland, (Reproductive Tract), Gut (Waterfowl), Cecal Tonsils, Liver, (Cloacal Swabs), Spleen, (Trachea)	Refrigerate / Frozen	PCR Virus Isolation
	Serum	Refrigerate	Serology (HI)
Duck/Goose Circovirus (DuCV/GoCV)	Feather Sheath, Spleen, Bursa of Fabricius	Refrigerate / Frozen	PCR
Duck Enteritis Virus (DEV/Duck Plaque Virus)	Gut, Caecal Tonsils, Liver, Spleen, (Pancreas, Kidney)	Refrigerate / Frozen	PCR

PCR/Sequencing: all organs listed may be sampled as tissue or alternative as dry swabs that carry sufficient load of suitable tissue material.

Bacterial Culture: we recommend swabs with transport media to prevent desiccation. Specific media might be required (e.g. for *Mycoplasma* spp.).

Viral Culture: we recommend organ/ tissue samples. Swabs for viral culture should carry sufficient load of tissue material and should be placed into viral transport media.

Serology: if not stated differently ELISA will be applied by default.

Histopathology: do not freeze the samples! This will destroy the tissue and lead to artefacts.

Autogenous Vaccines: for production of bacterial autogenous vaccines we prefer invasive isolates (e.g. isolated from brain, bone marrow, joints, pericardium). For production of viral autogenous vaccines, please sample affected organs related to clinical signs (e.g. inflamed/ swollen joints for Reovirus; gizzard erosions or liver showing alterations of IBH for Fowl Adenovirus).

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Duck Hepatitis Virus Type 1 (DHV-1)	Liver, Gut	Refrigerate / Frozen	PCR Virus Isolation
(Muscovy) Duck & Goose Parvovirus (MDPV/GPV)	Liver, Gut, Feces, Thymus, Heart, Spleen, Kidney	Refrigerate / Frozen	Screening PCR (MDPV & GPV) Typing PCR MDPV/GPV DIVA-PCR (Hoekstra)
Duck/Goose Reovirus	Feces, Liver, Spleen, Kidney, Pancreas	Refrigerate / Frozen	PCR Virus Isolation
Fowl Adenovirus (FAdV)	Liver (IBH), Gut, Cecal Tonsils, Kidney, Gizzard Erosions, (Proventriculus)	Refrigerate / Frozen	Virus Isolation & PCR Sequencing (Species & Serotyping)
	..... Serum, Paper Strips	.....	Serology
Fowlpox Virus (FPV)	Skin Alterations / Pox, Mucosal Skin Alterations, Bone Marrow, Liver		PCR
Hemorrhagic Enteritis Virus of Turkeys (TuHEV)	Gut, Cecal Tonsils, Feces, Spleen, (Liver)	Refrigerate/ Frozen	PCR
	..... Serum, Paper Strips	Refrigerate	Serology
Herpesvirus of Turkeys (MeHV1, HVT)	Feather Follicle, Tumorous Tissue, Blood, Spleen, (Eyes, Muscle, Liver, Cecal Tonsils)	Refrigerate / Frozen	PCR
Infectious Bronchitis Virus (IBV)	Trachea, Lung, Ovary, Oviduct, Kidney, Cecal Tonsils, Tracheal and Cloacal Swabs	Refrigerate / Frozen	PCR (Screening incl. IBV & TuCV) Variant-PCR Virus Isolation Sequencing
	..... Serum, Paper Strips	Refrigerate	Serology
Infectious Bursal Disease Virus/Gumboro (IBDV)	Lymphoid Tissues: Bursa of Fabricius, Spleen, Cecal Tonsils, (Liver, Kidney)	Refrigerate / Frozen	PCR incl. Pathotyping Sequencing
	..... Serum, Paper Strips	Refrigerate	Serology Vaccination Date Prediction
Infectious Laryngotracheitis Virus (ILTV)	Trachea, Larynx, (Lung)	Refrigerate / Frozen	PCR
	..... Serum, Paper Strips	Refrigerate	Serology
Marek's Disease Virus (MDV, GaHV-2)	Feather Follicle, Tumorous Tissue, Blood, Spleen, (Eyes, Muscle, Liver, Cecal Tonsils)	Refrigerate / Frozen	PCR Rispen-DIVA-PCR Sequencing
Newcastle Disease Virus (NDV/aPMV-1)	Trachea, Tracheal and Cloacal Swabs, (Lung, Liver, Spleen, Brain)	Refrigerate / Frozen	PCR PCR Pathotyping Sequencing & Pathotyping
	..... Serum, Paper Strips	Refrigerate	Serology
Reticuloendotheliosisvirus (REV)	Feces, Spleen, Tumorous Tissue, Blood	Refrigerate / Frozen	PCR
Turkey Astrovirus (TAsTV)	Liver, Spleen, Gut, Feces, (Kidney)	Refrigerate / Frozen	PCR (TAsTV-1, -2) Virus Isolation
Turkey Coronavirus (TCoV/Turkey Coronavirus Enteritis)	Small Intestine (esp. Jejunum, Ileum)	Refrigerate / Frozen	PCR Sequencing
Turkey Viral Hepatitis (TVH, Picornavirus)	Liver, Gut, Feces, Kidney, Pancreas, Spleen, Cecal Tonsils	Refrigerate / Frozen	PCR Virus Isolation

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BACTERIAL PATHOGENS			
Avibacterium gallinarum associated disease	Trachea, Lung, Air Sacs	Refrigerate / Frozen	Culture
Avibacterium paragallinarum (Coryza contagiosa)	Sinus Infraorbitalis, Trachea, (Air Sacs)	Refrigerate	Specific Culture PCR
Bordetella avium/ Bordetella bronchiseptica	Trachea, Lung, (Sinus)	Refrigerate / Frozen	Culture PCR (B. avium)
	Serum	Refrigerate	Serology (B. avium)
Brachyspira spp.	fresh Cecal Feces, Large Intestine, Ceca, (Spleen, Liver)	Refrigerate do not freeze!	Culture PCR
Campylobacter spp. (thermophilic)	Feces, Gut, (Liver, Bile)	Refrigerate / Frozen	Culture PCR
Chlamydiaceae (Chl. spp./psittaci/abortus/avium/gallinacea)	Choana, Trachea, (Lung, Air Sacs, Liver, Spleen, Pericardium, Cloacal Swabs)	Refrigerate / Frozen	PCR (C. spp.-Screening/ ssp.)
Clostridium perfringens (Necrotic Enteritis)	Gut (affected areas, Duodenum)	Refrigerate / Frozen	Specific Culture PCR (incl. Toxin Genes)
Coenonia anatina	Sinus, Trachea, Lung, Air Sacs, Brain, (Conjunctiva)	Refrigerate / Frozen	Culture
E. coli (APEC)	Bone Marrow, Brain, Heart, Joint, Yolk, Air Sacs, (Liver, Spleen, Lung, Air sacs, Ovary, Salpinx, Kidney)	Refrigerate / Frozen	Culture Serotyping PCR (Virulence Factors)
Erysipelothrix rhusiopathiae, Erysipelothrix spp.	Brain, Bone Marrow, Heart, (Liver, Spleen, Lung, Kidney)	Refrigerate / Frozen	Culture PCR
Gallibacterium anatis, Gallibacterium associated disease	Heart, Ovary, Bone Marrow, (Liver, Lung, Air Sacs, Salpinx, Sinus, Trachea)	Refrigerate / Frozen	Culture
Mycoplasma iowae	Cloacal Swabs, (Egg/ Embryo, Joints, Tendon Sheets, Meconium, Semen, Phallus, Cloaca, Vagina)	Refrigerate / Frozen Culture: swabs with specific medium (do not freeze!)	Specific Culture (resistogram upon request) PCR
Mycoplasma gallisepticum (MG, CRD)	Trachea, Tracheal Swabs, Sinus (Lung, Air Sacs)	Refrigerate / Frozen Culture: swabs with specific medium (do not freeze!)	Specific Culture (resistogram upon request) PCR (incl. DIVA 6/85, F & ts-11)
	Serum, Paper Strips	Refrigerate	(ELISA, SSA)
Mycoplasma meleagridis	Choanal/ Tracheal and Cloacal Swabs, (Sinus, Trachea, Lung, Air Sacs, Egg (Embryo), Semen, Phallus, Cloaca, Oviduct)	Refrigerate Culture: swabs with specific medium (do not freeze!)	Specific Culture (resistogram upon request) PCR
	Serum, Paper Strips	Refrigerate	(ELISA, SSA)
Mycoplasma synoviae (MS, Infectious Synovitis)	Trachea, Tracheal Swabs, Joint, Synovia, (Lung), Salpinx	Refrigerate / Frozen Culture: swabs with specific medium (do not freeze!)	Specific Culture (resistogram upon request) PCR DIVA-PCR MS-H/ MS1
	Serum, Paper Strips	Refrigerate	(ELISA, SSA)
Mycoplasma spp. (Waterfowl)	Reproductive Organs incl. Phallus, Cloaca, (Sinus, Trachea, Lung, Air Sacs, Egg)	Refrigerate / Frozen Culture: swabs with specific medium (do not freeze!)	Specific Culture (resistogram upon request) PCR

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Ornithobacterium rhinotracheale (ORT, Ornithobacteriosis)	Lung, Air sacs, Joint, (Pericardium), Sinus, Trachea,	Refrigerate / Frozen	Culture Serotyping PCR
	Serum, Paper Strips	Refrigerate	Serology
Pasteurella multocida (Pasteurellosis/Fowl Cholera)	Heart, Brain, Bone Marrow, Joints, Pericardium, Liver, Spleen, Lung, Sinus, Wattle	Refrigerate / Frozen	Culture Serotyping PCR ssp. septica-PCR Capsule Type-PCR
	Serum, Paper Strips	Refrigerate	Serology
Riemerella anatipestifer (Riemerellosis)	Heart, Brain, Joints, Liver, Spleen, Lung, Air Sacs, Joint, (Conjunctiva, Sinus, Trachea)	Refrigerate / Frozen	Culture Serotyping PCR
	Serum, Paper Strips	Refrigerate	Serology (Turkey and Duck only! Species Information required)
Salmonella (Paratyphoid, non-host spec. <i>Salm. spp.</i>)	Feces, Dust, Boot Swabs, Gut, Liver, Bile, Spleen, Ovary, Yolk, Yolk Sac, Egg, (Cloacal Swabs)	Refrigerate / Frozen	Culture Serotyping PCR
Salmonella Gallinarum Pullorum (Pullorum disease) & Salmonella Gallinarum Gallinarum (Fowl Typhoid)	Heart, Liver, Bile, Spleen, Ovary, Yolk	Refrigerate / Frozen	SGP-DIVA-PCR (SGP, SGG, SG 9R)
	Serum	Refrigerate	Serology (SSA)
Salmonella Enteritidis & Salmonella Typhimurium	Feces, Dust, Boot Swabs, Gut, Liver, Bile, Spleen, Ovary, Yolk, Yolk Sac, Egg, (Cloacal Swabs)	Refrigerate / Frozen	Culture Serotyping PCR (incl. DIVA SE)
	Serum, Paper Strips	Refrigerate	Serology (Group B & D)
Staphylococcus spp.	Heart, Brain, Bone Marrow, Joint, Liver, (Spleen, Ovary, Yolk, Kidney)	Refrigerate / Frozen	Culture PCR (MRSA)
Streptococcus spp.	Heart, Brain, Bone Marrow, Lesion, Liver, Spleen, Yolk	Refrigerate / Frozen	Culture Serotyping

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PROTOZOA			
Histomonas meleagridis	Liver, Cecum, Cloacal Swabs		PCR

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