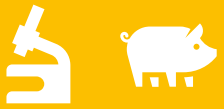


**ANICON®**

**SAN®**  
VET



# DIAGNOSTIC SUBMISSION GUIDE

**SWINE**

## GENERAL INFORMATION

<b>PCR/Sequencing</b>	All organs listed may be sampled as tissue samples or alternatively as dry swabs that carry sufficient load of suitable tissue material. Moreover, ANICARDs are suitable for PCR investigations and sequencing. A special submission guide for ANICARDs can be found on our homepage <a href="http://www.anicon.eu">www.anicon.eu</a> . Sequencing includes phylogenetic analysis visualized in a phylogenetic tree and a comparison to vaccine strains, if data of commercial live attenuated vaccines is available.
<b>Bacterial Culture</b>	We recommend swabs with transport media to prevent desiccation. Specific media might be required (e.g. for <i>Mycoplasma</i> spp. or <i>Brachyspira</i> spp.).
<b>Viral Culture</b>	We recommend organ/tissue samples. Swabs for viral culture should carry sufficient load of tissue material and should be placed into viral transport media.
<b>Serology</b>	If not stated differently ELISA will be applied by default. Serum samples can be sent frozen for ELISA, HI or MAT, if centrifugated before (pure serum). Moreover, paper strips might be used for serological investigations, if stated. A special submission guide for paper strips can be found on our homepage <a href="http://www.anicon.eu">www.anicon.eu</a> .
<b>Histopathology/ Immunohisto-pathology</b>	Do not freeze the samples! This will destroy the tissue and induces artifacts. Best results will be achieved, if samples are placed in formalin prompt after sampling.
<b>Autogenous Vaccines</b>	For the production of bacterial autogenous vaccines we prefer the most invasive isolates (e.g. isolated from brain, lungs, joints, pericardium). For production of viral autogenous vaccines, please sample affected organs related to clinical signs (e.g. small intestine for Rotavirus A, lungs for SIV). Please note that the sample material may vary depending on state of the infection or type of manifestation of the disease. For selection of suitable sample material clinical symptoms, course of disease and gross pathological lesions should be taken into consideration.

**Information on how to correctly wrap samples for sending them in** and which accompanying documents are needed can be provided by SAN Vet, if desired. For fast and correct investigations according your specific demands please fill in the interactive Diagnostic Request Form which you can find on our homepage [www.anicon.eu](http://www.anicon.eu). **Please note that the sample material may vary depending on state of the infection or type of manifestation of the disease. For selection of suitable sample material clinical symptoms, course of disease and gross pathological lesions should be taken into consideration.**

For further information please contact us (E-mail: [office-de@san-group.com](mailto:office-de@san-group.com), Phone: +49 4473 943830)

Pathogen/Disease Suspected	Specimen	Sample Preparation	Diagnostic Method
<b>VIRAL PATHOGEN / DISEASE</b>			
<b>African Swine Fever (ASF)/ Classical Swine Fever (CSF)</b>	Aborted fetuses, placental membranes, uterus, lungs, spleen, liver, kidneys, brain, heart, ANICARDs*	Refrigerated/frozen	PCR
	Serum, paper strips* (ASF only)	Refrigerated	Serology
<b>Aujeszky's disease (AK)</b>	Serum	Refrigerated	Serology

\*no special storing or shipment requirements

Pathogen/Disease Suspected	Specimen	Sample Preparation	Diagnostic Method
<b>Coronaviruses (TGE, PED, Swine Delta-Coronavirus)</b>	Fecal samples/swabs, intestine (small intestine/ileum), ANICARDS*	Refrigerated/frozen	PCR
	Serum (TGE and PED)	Refrigerated	Serology
<b>Swine Influenza (SIV)</b>	Lungs, BALF, nasal/tracheal swabs, blood, oral fluids, ANICARDS* (PCR only)	Refrigerated/frozen	PCR (screening, H-&N-typing of Influenza A)
		Refrigerated <b>Culture: swabs with specific viral medium!</b>	Virus isolation
		Refrigerated/fixed in formalin <b>Do not freeze!</b>	Immunohistochemistry
	Serum, oral fluids, paper strips* (not suitable for HI)	Refrigerated	Serology (screening and typing via hemagglutination inhibition testing [HI] [avH1N1, huH1N2, huH3N2, panH1N1, panH1N2])
<b>Parvovirus (Porcine Parvovirus, PPV)</b>	Aborted fetuses (lungs, navel), placental membranes, uterus, ANICARDS*	Refrigerated/frozen	PCR
	Serum, paper strips*	Refrigerated	Serology
<b>Porcine Circovirus 2 (PCV-2)</b>	Aborted fetuses (heart, lymphatic tissue), placental membranes, lungs, lymph nodes, spleen, thymus, kidney, blood, oral fluids, intestine, pancreas, ANICARDS*	Refrigerated/frozen	PCR (screening and quantification)
		Refrigerated/fixed in formalin <b>Do not freeze!</b>	Sequencing (differentiation type a-d) Immunohistochemistry
	Serum, paper strips*	Refrigerated	Serology (IgM and IgG)
<b>Porcine Circovirus 3 (PCV-3)</b>	Aborted fetuses (heart, lymphatic tissue), placental membranes, lungs, lymph nodes, spleen, thymus, kidney, blood, oral fluids, ANICARDS*	Refrigerated/frozen	PCR
<b>Porcine Teschovirus (PTV)</b>	Fecal samples/swabs, intestine, brain, cerebrospinal fluid, spinal cord, ANICARDS*	Refrigerated/frozen	PCR
<b>Porcine Respiratory and Reproductive Syndrome (PRRSV)</b>	Aborted fetuses (lungs, lymphatic tissue, lymph nodes), placental membranes, uterus, lungs, BALF, nasal/tracheal swabs, oral fluids, blood, semen, ANICARDS*	Refrigerated/frozen	PCR (EU/NA) sequencing based on ORF-5 (EU/NA) sequencing based on ORF 7 (EU/NA)
		Refrigerated/fixed in formalin <b>Do not freeze!</b>	Immunohistochemistry
	Serum, paper strips*	Refrigerated	Serology

\*no special storing or shipment requirements

Pathogen/Disease Suspected	Specimen	Sample Preparation	Diagnostic Method
Rotavirus infection (Rotavirus A and C)	Fecal samples/swabs, intestine (small intestine), ANICARDS* (PCR only)	Refrigerated/frozen	PCR Sequencing of Rotavirus A based on VP4 and VP7
		Refrigerated	Virus isolation (Rotavirus A only)
		Refrigerated/fixed in formalin <b>Do not freeze!</b>	Immunohisto- chemistry (Rotavirus A only)

Pathogen/Disease Suspected	Specimen	Sample Preparation	Diagnostic Method
<b>BACTERIAL PATHOGEN / DISEASE</b>			
Actinobacillus pleuropneumoniae (APP)	Lungs, tonsils, oral fluids, ANICARDS* (PCR only)	Refrigerated	Culture, sensitivity test- ing, serotyping via PCR
		Refrigerated/frozen	PCR (screening, typing [capsule genes/toxin gene differentiation, serotypes 1–18])
		Refrigerated/fixed in formalin <b>Do not freeze!</b>	Immunohisto- chemistry
	Serum, paper strips*	Refrigerated	Serology (screening, typing via serology, serotypes 1–12)
Brucellosis (Brucella suis)	Serum, paper strips*	Refrigerated	Serology
Brachyspira spp.	Fecal samples/swabs, intestine (ileum/large intestine), ANICARDS* (PCR only)	Refrigerated <b>Culture: swabs with specific anaerobic medium! Do not freeze!</b>	<b>Specific</b> culture (sensitivity testing on request)
		Refrigerated/frozen	PCR (screening for Brachyspira spp. incl. B. innocens, B. murdochii, B. hyodysenteriae, B. pilosicoli, B. intermedia, B. hampsonii, B. suanatina,  PCR (direct screening for B. hyodysenteri- ae/B. pilosicoli)  MLST for B. hyodysenteriae

\*no special storing or shipment requirements

Pathogen/Disease Suspected	Specimen	Sample Preparation	Diagnostic Method
<b>Campylobacter spp.</b> ( <i>C. coli</i> , <i>C. jejuni</i> , <i>C. lari</i> )	Fecal samples/swabs, intestine	Refrigerated <b>Do not freeze!</b>	Culture, sensitivity testing
		Refrigerated <b>Do not freeze!</b>	PCR
<b>Chlamydia spp.</b>	Aborted fetuses (lungs, liver, navel), placental membranes, uterus, cervical swabs, joints, joint fluid, lungs, conjunctival swabs, ANICARDs*	Refrigerated/frozen	PCR (screening for pathogenic <i>Chlamydia</i> spp.)
		Serum	Serology (KBR)
<b>Clostridium difficile</b>	Fecal samples, intestine (large intestine)	Refrigerated	<b>Specific</b> culture, sensitivity testing, typing via PCR (toxin genes A and B)
<b>Clostridium perfringens</b>	Fecal samples/swabs, stomach, intestine (small intestine)	Refrigerated	<b>Specific</b> culture, sen- sitivity testing, typing via PCR (toxovar, major-/minor-toxin genes)
<b>Colibacillosis/Colisepsis/ Edema disease</b> (Pathogenic <i>E. coli</i> )	Fecal samples/swabs, stomach, intestine (small intestine)	Refrigerated	Culture, sensitivity testing, typing via PCR (virulence and adherence factors, specific panels for suckling piglets [12×] and weaners [9×])
<b>Edema disease (Stx2e)</b>	Fecal samples/swabs, intestine (small intestine), ANICARDs*	Refrigerated/frozen	PCR (specific screen- ing for Stx2e without previous culture)
<b>Erysipelas</b> ( <i>Erysipelothrix</i> <i>rhusiopathiae</i> )	Joints, joint fluids + cartilage, skin lesions, heart, liver, spleen, lymph nodes, blood, ANICARDs* (PCR only)	Refrigerated	Culture, sensitivity testing
		Refrigerated/frozen	PCR
	Serum, paper strips*	Refrigerated	Serology
<b>Glässer's disease</b> ( <i>Haemophilus parasuis</i> , HPS)	Lungs, joints, joint fluids + cartilage, brain, heart including pericardium, liquor cerebrospinalis, swabs of pleura/peritoneum, exudate, ANICARDs* (PCR only)	Refrigerated	Culture, sensitivity testing, typing via PCR
		Refrigerated/frozen	PCR (screening, typing capsule genes, serotypes 1–15, virulence factors)
	Serum, paper strips*	Refrigerated	Serology
<b>Porcine Proliferative Enteropathy (Lawsonia intracellularis, PIA)</b>	Fecal samples/swabs, intes- tine (ileum/large intestine), ANICARDs*	Refrigerated/frozen	PCR
		Refrigerated, fixed in formalin <b>Do not freeze!</b>	Immunohisto- chemistry
	Serum	Refrigerated	Serology

\*no special storing or shipment requirements

Pathogen/Disease Suspected	Specimen	Sample Preparation	Diagnostic Method
<b>Leptospirosis</b> (Pathogenic <i>Leptospira</i> spp.)	Aborted fetuses (lungs, liver, kidney, navel), placental membranes, uterus, cervical swabs, urine, kidneys, ANICARDs*	Refrigerated/frozen	PCR screening for 38 <i>Leptospira</i> spp. incl. <i>L. hardjo</i> , <i>L. tarassovi</i> , <i>L. autumnalis</i> , <i>L. bratislava</i> , <i>L. canicola</i> , <i>L. copenhageni</i> , <i>L. grippotyphosa</i> , <i>L. icterohaemorrhagiae</i> , <i>L. muenchen</i> , <i>L. pomona</i> , <i>L. sejroe</i>
		Refrigerated/fixated in formalin <b>Do not freeze!</b>	Immunohistochemistry
	Serum	Refrigerated	Serology by microagglutination test (MAT), differentiation of <i>L. australis</i> , <i>L. bratislava</i> , <i>L. autumnalis</i> , <i>L. canicola</i> , <i>L. grippotyphosa</i> , <i>L. icterohaemorrhagiae</i> , <i>L. pomona</i> , <i>L. hardjo</i> , <i>L. tarassovi</i> )
<b>Mycoplasma hyopneumoniae</b>	Lungs, BALF, nasal/tracheal swabs, oral fluids, ANICARDs*	Refrigerated/frozen	PCR
		Refrigerated/fixated in formalin <b>Do not freeze!</b>	Immunohistochemistry
	Serum, paper strips*	Refrigerated	Serology
<b>Mycoplasma hyorhinis</b>	Lungs, nasal/tracheal swabs, heart including pericardium, swabs of pleura/peritoneum, joints, joint fluids + cartilage, ANICARDs* (PCR only)	Refrigerated <b>Culture: swabs with specific Mycoplasma medium!</b> <b>Do not freeze!</b>	<b>Specific</b> culture (sensitivity testing on request)
		Refrigerated/frozen	PCR
<b>Mycoplasma hyosynoviae</b>	Joints, joint fluids + cartilage, ANICARDs* (PCR only)	Refrigerated <b>Culture: swabs with specific Mycoplasma medium!</b> <b>Do not freeze!</b>	<b>Specific</b> culture (sensitivity testing on request)
		Refrigerated/frozen	PCR
<b>Mycoplasma suis</b> (Eperythrozoonosis)	Aborted fetuses (liver, spleen), placental membranes, blood (EDTA), spleen, liver, ANICARDs*	Refrigerated/frozen	PCR

\*no special storing or shipment requirements

Pathogen/Disease Suspected	Specimen	Sample Preparation	Diagnostic Method
<b>Pasteurella multocida</b> (including atrophic rhinitis)	Lungs, BALF, nasal/tracheal swabs, turbinates, ANICARDs* (PCR only)	Refrigerated	Culture, sensitivity testing
		Refrigerated/frozen	PCR (screening, typing based on capsule genes [A, B, D, E, F], proof of gene for toxin A [atrophic rhinitis])
	Serum	Refrigerated	Toxin-ELISA (atrophic rhinitis)
<b>Salmonellosis</b> ( <i>Salmonella</i> spp.)	Fecal samples/swabs, intestine (small and large intestine), mesenteric lymph nodes, spleen, liver, lungs, swipe samples, boot swabs, dust, ANICARDs* (PCR only)	Refrigerated	<b>Specific</b> culture, sensitivity testing, serotyping via agglutination
		Refrigerated	PCR (screening, differentiation SE/ST, ST DIVA PCR)
	Serum, paper strips*	Refrigerated	Serology
<b>Streptococcus suis</b>	Lungs, joints, joint fluids + cartilage, brain, heart including pericardium, swabs of pleura/peritoneum, liquor cerebrospinalis, spleen, liver, ANICARDs* (PCR only)	Refrigerated	Culture, sensitivity testing, typing/virulence factors via PCR
		Refrigerated/frozen	PCR (screening, typing [capsule genes, serotypes 1–19, 21, 23–25, 27–31, 1/2], virulence factors)
<b>Streptococcus dysgalactiae</b>	Lungs, joints, joint fluids + cartilage, brain, heart including pericardium, swabs of pleura/peritoneum, liquor cerebrospinalis, liver, spleen	Refrigerated	Culture, sensitivity testing, typing via 16S-rRNA sequencing (differentiation subsp. equisimilis/subsp. dysgalactiae)

Pathogen/Disease Suspected	Specimen	Sample Preparation	Diagnostic Method
<b>PARASITOLOGICAL PATHOGEN/DISEASE</b>			
<b>Coccidiosis</b> ( <i>Isospora suis</i> )	Fecal samples, intestine (small intestine)	Refrigerated	Flotation, microscopic investigation
<b>Cryptosporidiosis</b> ( <i>C. parvum</i> )	Fecal samples/swabs, intestine, ANICARDs* (PCR only)	Refrigerated/frozen	PCR
<b>Sarcoptic Mange</b> ( <i>Sarcoptes scabiei</i> var. <i>suis</i> )	Serum, paper strips*	Refrigerated	Serology
	Deep skin scrapings	Refrigerated	Microscopic investigation
<b>Parasitological investigation</b>	Fecal samples, intestine	Refrigerated	Flotation/sedimentation, microscopic investigation

\*no special storing or shipment requirements



We at **SAN Vet** regard ourselves as a competent and reliable partner in the field of animal health.

## **ANICON**

**Veterinary diagnostics & services**  
(Accreditation ISO 17025)

- Pathology
- Cultural bacteriology
- Cultural virology
- Serology
- PCR and sequencing

## **ANIVAC**

**Autogenous vaccines**

- Poultry
- Swine
- Cattle
- Sheep
- Goats
- Fish

## **KYLT**

**In-vitro diagnostic products**

- Kylt® Real-Time (RT-) PCR-Kits
- Kylt® purification products

## **LM-TECH**

**Feed- & food diagnostics**  
(Accreditation ISO 17025)

Examination of feed and food, drinking water for animals and humans.

- Microbiological / chemical analysis
- Molecular / immunological analysis
- Histology
- Quality management & consulting



**SAN Vet** ist Ihr kompetenter und verlässlicher Partner im Bereich Tiergesundheit.

## **ANICON**

**Veterinärdiagnostik & Services**  
(Akkreditierung ISO 17025)

- Pathologie
- Kulturelle Bakteriologie
- Kulturelle Virologie
- Serologie
- PCR und Sequenzierung

## **ANIVAC**

**Bestandsspezifische Impfstoffe**

- Geflügel
- Schwein
- Rind
- Schaf
- Ziege
- Fisch

## **KYLT**

**In-vitro Diagnostikprodukte**

- Kylt® Real-Time (RT-) PCR-Kits
- Kylt® Aufreinigungskits

## **LM-TECH**

**Futter- und Lebensmitteldiagnostik**  
(Akkreditierung ISO 17025)

Prüfung von Futter- und Lebensmitteln, Trink- und Tränkewasser

- Mikrobiologische / chemische Prüfungen
- Molekularbiologische / immunologische Prüfungen
- Histologie
- Qualitätsmanagement & Beratung
- Gegengutachten



**SAN Vet** es un colaborador competente y fiable en el sector de salud animal.

## **ANICON**

**Diagnóstico y servicios veterinarios**  
(Acreditación ISO 17025)

- Patología
- Cultivos bacteriológicos
- Cultivos virales
- Serología
- PCR y secuenciación

## **ANIVAC**

**Vacunas autógenas**

- Aves
- Cerdos
- Vacas
- Oveja
- Cabra
- Peces

## **KYLT**

**Productos de diagnóstico in-vitro**

- Kylt® Real-Time (RT-) PCR-Kits
- Kylt® Productos de purificación

## **LM-TECH**

**Diagnóstico de piensos y alimentos**  
(Acreditación ISO 17025)

Pruebas de productos alimenticios / piensos, agua potable

- Pruebas microbiológicas / químicas
- Pruebas de biología molecular / inmunológicas
- Histología
- Gestión y asesoramiento de calidad



**SAN Vet** est votre partenaire compétent et fiable dans le domaine de la santé animale.

## **ANICON**

**Diagnostic vétérinaire et services**  
(Accréditation ISO 17025)

- Pathologie
- Bactériologie de culture
- Virologie de culture
- Sérologie
- PCR et séquençage

## **ANIVAC**

**Vaccins autogènes**

- Volaille
- Cochon
- Bovin
- Mouton
- Chèvre
- Poisson

## **KYLT**

**Produits de diagnostic in-vitro**

- Kylt® Real-Time (RT-) PCR-Kits
- Kylt® Produits de purification

## **LM-TECH**

**Sécurité des produits alimentaires**  
(Accréditation ISO 17025)

Test des produits alimentaires et de l'eau pour consommation humaine / animale

- Tests microbiologiques / chimiques
- Tests de biologie moléculaire / immunologiques
- Histologie
- Gestion de la qualité et service de conseil