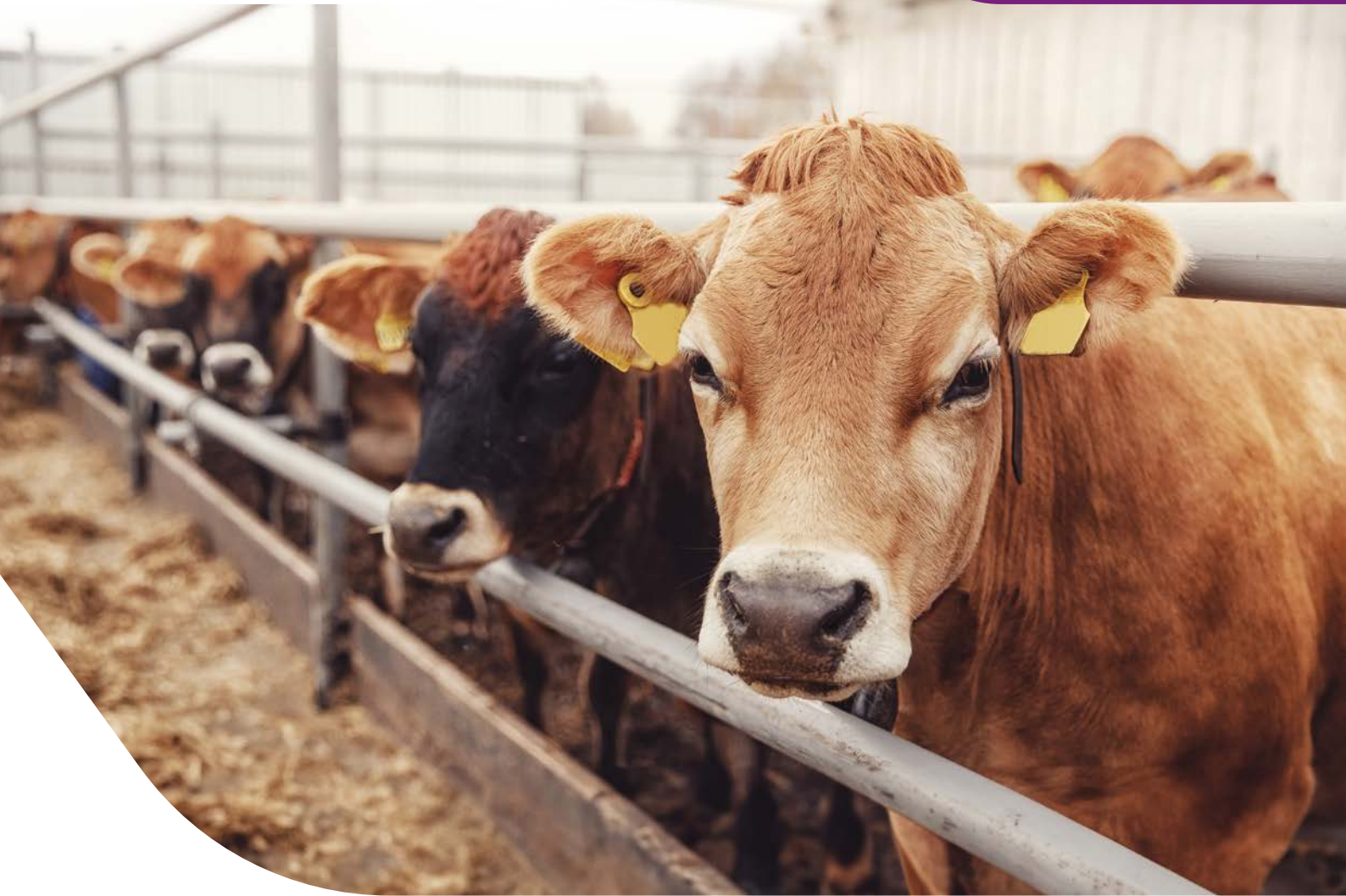


ANICON[®]

SAN[®]
VET



DIAGNOSTIC SUBMISSION GUIDE

CATTLE

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Passion for Innovation

GENERAL INFORMATION

PCR/Sequencing	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 www.anicon.eu . Sequencing includes phylogenetic analysis visualized in a phylogenetic tree and a comparison to vaccine strains, if data of commercial live attenuated vaccines are available.
Bacterial Culture	We recommend swabs with transport media to prevent desiccation and/or bacterial overgrowth. Specific media might be required (e.g. for <i>Mycoplasma</i> spp. or <i>Actinomyces</i> 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.
Milk Samples	Milk samples should be gained aseptically for bacteriology and PCR investigations. Milk samples can be sent in refrigerated or frozen for bacterial culture, PCR or serology.
Serology	If not stated differently ELISA will be applied by default. Serum samples can be sent frozen for ELISA, KBR or MAT, if centrifuged before (pure serum).
Histopathology / Immunohisto-pathology	Do not freeze the samples! This will destroy the tissue and lead to artefacts. Best results will be achieved, if samples are placed in formalin prompt after sampling.
Autogenous Vaccines	For the production of bacterial autogenous vaccines we prefer 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. lungs for Influenza D).

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. For further information please contact us (E-mail: office-de@san-group.com, Phone: +49 4473 94 38 30).

Pathogen/Disease Suspected	Specimen	Sample Preparation	Diagnostic Method
BACTERIAL PATHOGEN / DISEASE			
Actinobacillus lignieresii (Actinobacillosis)	Swabs from altered organs, abscessed tissue and exudate	Refrigerated	Culture, sensitivity testing
Actinomyces bovis (Actinomycosis)	Swabs from altered organs/bones, abscessed tissue and exudate	Refrigerated Culture: swabs with specific anaerobic medium!	Specific culture, sensitivity testing on request
Bibersteinia trehalosi	Nasal/tracheal swabs, BALF, lungs	Refrigerated	Culture, sensitivity testing

*no special storing or shipment requirements

Pathogen/Disease Suspected	Specimen	Sample Preparation	Diagnostic Method
Campylobacter spp., thermophile (<i>C. coli</i> , <i>C. jejuni</i> , <i>C. lari</i>)	Fecal samples/swabs, intestine	Refrigerated Do not freeze!	Specific culture, sensitivity testing
		Refrigerated Do not freeze!	PCR
Chlamydiaceae	Aborted fetuses, placental membranes, uterus, cervical swabs, joints, joint fluid, lungs, conjunctival swabs, ANICARD* (PCR only)	Refrigerated/frozen	PCR (screening for pathogenic Chlamydia spp.)
		Serum	Refrigerated
Chlamydia abortus	Aborted fetuses, placental membranes, uterus, cervical swabs, ANICARD* (PCR-only)	Refrigerated/frozen	PCR
Clostridium difficile	Fecal samples, intestine (large intestine)	Refrigerated	Specific culture, sensitivity testing, typing via PCR (toxin genes A and B)
Clostridium perfringens Toxovar A-E	Fecal samples/swabs, abomasum, intestine (small intestine), liver	Refrigerated	Specific culture, sensitivity testing, typing via PCR (toxovar, major-/minor-toxin-genes)
Colibacillosis	Fecal samples/swabs, intestine (small intestine)	Refrigerated	Culture, sensitivity testing, typing via PCR (virulence and adherence factors)
Colisepsis	Lungs, liver, spleen, kidneys, intestine, brain	Refrigerated	Culture, sensitivity testing, typing via PCR (virulence and adherence factors)
Coxiella burnetii (Q-fever)	Aborted fetuses, placental membranes, uterus, cervical swabs, milk samples, ANICARD* (PCR-only)	Refrigerated/frozen	PCR
		Serum, milk samples	Refrigerated
Erysipelas (Erysipelothrix rhusiopathiae)	Joints, joint fluids + cartilage, skin, heart, liver, spleen, lymph nodes, blood, ANICARD* (PCR only)	Refrigerated	Culture, sensitivity testing
		Refrigerated/frozen	PCR
		Serum	Refrigerated
Histophilus somni	Lungs, heart, brain, joints, joint fluids + cartilage, ANICARD* (PCR only)	Refrigerated	Culture, sensitivity testing
		Refrigerated/frozen	PCR

*no special storing or shipment requirements

Pathogen/Disease Suspected	Specimen	Sample Preparation	Diagnostic Method
Leptospirosis (Pathogenic <i>Leptospira</i> spp.)	Aborted fetuses, placental membranes, uterus, cervical swabs, urine, kidneys, ANICARD* (PCR-only)	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/fixed in formalin Do not freeze!	Immunohistochemistry
	Serum	Refrigerated	Serology (microagglutination test (MAT), differentiation of <i>L. Australis</i> , <i>Bratislava</i> , <i>Autumnalis</i> , <i>Canicola</i> , <i>Grippotyphosa</i> , <i>Icterohaemorrhagiae</i> , <i>Pomona</i> , <i>Hardjo</i> , <i>Tarassovi</i>)
Listeria monocytogenes	Brain, liver, aborted fetuses, eye swabs	Refrigerated Do not freeze!	Specific culture, sensitivity testing
		Refrigerated Do not freeze!	PCR
Mannheimia haemolytica	Nasal/tracheal swabs, lungs, BALF, mediastinal/bronchial lymph nodes	Refrigerated	Culture, sensitivity testing, typing via PCR (serotypes 1, 2/5, 6/8)
Moraxella spp. (Pinkeye)	Corneal swabs	Refrigerated	Culture, sensitivity testing
Mycobacterium avium subsp. paratuberculosis (MAP/Johne's disease)	Fecal samples, ileum, milk samples	Refrigerated/frozen	PCR
	Serum, milk samples	Refrigerated	Serology
Mycoplasma spp.	Altered tissue/organs, milk samples, ANICARD* (PCR only)	Refrigerated Do not freeze! Culture: swabs with specific Mycoplasma medium!	Specific culture (sensitivity testing on request)
		Refrigerated/frozen	PCR
Mycoplasma bovirhinis	Nasal/tracheal swabs, BALF, lungs	Refrigerated Do not freeze! Culture: swabs with specific Mycoplasma medium!	Specific culture (sensitivity testing on request)

*no special storing or shipment requirements

Pathogen/Disease Suspected	Specimen	Sample Preparation	Diagnostic Method
Mycoplasma bovis	Nasal/tracheal swabs, lungs, BALF, joints, joint fluids, swabs or exudate from middle ear, milk samples ANICARD* (PCR only)	Refrigerated Do not freeze! Culture: swabs with specific Mycoplasma medium!	Specific culture (sensitivity testing on request)
	Serum	Refrigerated/frozen Refrigerated	PCR Serology
Pasteurella multocida	Lungs, BALF, nasal/tracheal swabs, bronchial/mediastinal lymph nodes, ANICARD* (PCR only)	Refrigerated Refrigerated/frozen	Culture, sensitivity testing PCR (screening, typing based on capsule genes (A, B, D, E, F))
	Salmonellosis (Salmonella spp.)	Fecal samples/swabs, intestine (small and large intestine), mesenteric lymph nodes, spleen, liver, lungs, swipe samples, dust	Refrigerated Refrigerated/frozen
Serum		Refrigerated	Serology

Pathogen/Disease Suspected	Specimen	Sample Preparation	Diagnostic Method
PARASITOLOGICAL PATHOGEN / DISEASE			
Coccidiosis (Eimeria spp.)	Fecal samples, intestine (small intestine)	Refrigerated	Flotation, microscopic investigations
Cryptosporidiosis (C. parvum)	Fecal samples/swabs, intestine, ANICARD* (PCR only)	Refrigerated/frozen	PCR
Liver Fluke (Fasciola hepatica)	Fecal samples	Refrigerated	Sedimentation
	Serum	Refrigerated	Serology
Lung worms	Fecal samples	Refrigerated	Larvae differentiation by Baermann technique
Neospora caninum	Brain, muscle tissue, aborted fetuses	Refrigerated/frozen	PCR
	Serum	Refrigerated	Serology
Parasitological investigation	Fecal samples, intestine	Refrigerated	Flotation/sedimentation, microscopic investigation

*no special storing or shipment requirements

Pathogen/Disease Suspected	Specimen	Sample Preparation	Diagnostic Method
OTHERS			
Trace element deficiencies (i.e. selenium, copper, cobalt)	Liver, serum	Refrigerated	Atomic absorption spectrometry (AAS)
Polioencephalomalacia/ Cerebrocorticalnecrosis (PEM/CNN)	Brain (cerebral cortex, brainstem)	Refrigerated/fixed in formalin Do not freeze!	Histopathology
Pregnancy testing (> day 28)	Serum, milk samples	Refrigerated	PAG (pregnancy associated glycoprotein) test

Pathogen/Disease Suspected	Specimen	Sample Preparation	Diagnostic Method
VIRAL PATHOGEN / DISEASE			
Bovine Virus Diarrhea Virus (BVDV)	Lungs, intestine, mesenteric lymph nodes, spleen, whole blood samples, ANICARD* (PCR-only)	Refrigerated/frozen	PCR
	Serum	Refrigerated	Serology
Bovine Coronavirus (Respiratory and Enteric variants)	Fecal samples/swabs, intestine, nasal/tracheal swabs, BALF, lungs, ANICARD* (PCR-only)	Refrigerated/frozen	PCR
Bovine Herpesvirus 1 (BHV-1/IBRV)	Lungs, trachea, BALF, nasal/tracheal swabs, ANICARD* (PCR-only)	Refrigerated/frozen	PCR
	Serum	Refrigerated	Serology
Bovine Respiratory Syncytial Virus (BRSV)	Lungs, BALF, nasal/tracheal swabs, ANICARD* (PCR and sequencing only)	Refrigerated/frozen	PCR Sequencing
Influenza D	Lungs, BALF, nasal/tracheal swabs, ANICARD* (PCR only)	Refrigerated/frozen	PCR
		Refrigerated Culture: swabs with specific viral medium!	Virus isolation
Parainfluenza-3 (PI-3)	Lungs, BALF, nasal/tracheal swabs, ANICARD* (PCR-only)	Refrigerated/frozen	PCR

*no special storing or shipment requirements

Rotavirus infection (Rotavirus A and C)	Fecal samples/swabs, intestine, ANICARD* (PCR and sequencing only)	Refrigerated/frozen	PCR (A and C) se- quencing of Rotavirus A based on VP4 and VP7
		Refrigerated	Virus isolation (Rota- virus A only)
		Fixed in formalin Do not freeze!	Immunohistochemis- try (Rotavirus A only)
Schmallenberg Virus (SBV)	Aborted fetuses, brain, liver, spleen, blood samples	Refrigerated/frozen	PCR
		Serum	Refrigerated

*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