# EXTERNAL REFERENCES

# ID SCREEN® BLUETONGUE COMPETITION

*Last update: October 2023*

**Publications / References:**

## BTV ANTIBODY DETECTION (UNIDENTIFIED SEROTYPES)

### CATTLE AND SMALL RUMINANTS

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| 1) Puri B. *et al*. (2022). **Seroprevalence of bluetongue disease among domestic ruminants raised in International Border Areas of Nepal**. Sarhad Journal of Agriculture, 38(2), 555-562. | • A total of 220 blood samples were collected randomly from apparently healthy ruminants (cattle, buffalo, sheep, and goat) and screened for Bluetongue virus antibodies in sera using the ID SCREEN® BLUETONGUE COMPETITION.<br>• *Results*: Out of 220 sera samples, 92 were positive for BTV, accounting for 41.8% prevalence in ruminants. The seroprevalence rate was the highest in Buffaloes (58.3%) followed by sheep and goats (each 40%), and cattle (37.5%). | | | Epidemiological study | | |
| 2) Douangngeun B. *et al*. (2016). **Seroprevalence of Q fever, brucellosis, and bluetongue in selected provinces in Lao People's Democratic Republic**. The American journal of tropical medicine and hygiene, 95(3), 558. | • Six hundred and sixty-two sera from cattle (n=526), buffalo (n=130), and goat (n=6) sera were tested for antibodies against BTV by the ID SCREEN® BLUETONGUE COMPETITION.<br>• *Results*: Overall seroprevalence was 96,7% with seroprevalence of 97%, 95,4%, and 100% for cattle, buffaloe, and goat respectively. | | | Epidemiological study | | |



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## SMALL RUMINANTS

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| 3) Daif S. *et al.* (2022). **Serological and molecular prevalence study of bluetongue virus in small domestic ruminants in Morocco**. Scientific Reports, 12(1), 1-11. | • 1651 samples were randomly collected from 1376 sheep and 275 goats were primarily tested using the ID SCREEN® BLUETONGUE COMPETITION. Subsequently, some of the ELISA-positive samples were analyzed by RT-qPCR.<br>• *Results*: Overall BTV seroprevalence in small ruminants was 41.7%, including 42.6% in sheep and 37.5% in goats. 65% of ELISA-positive samples were randomly selected for molecular analysis by RT-qPCR. The overall BTV viropositivity rate was 46.7%, including 48.1% in sheep and 41.8% in goats. | Correlation with other techniques | | Epidemiological study | | |
| 4) Haile T. *et al*. (2022). **Seroprevalence of Bluetongue Virus Antibodies in Ovine in Maji District of West Omo Zone, Southwest Ethiopia**. Veterinary Medicine: Research and Reports, 13, 257-264. | • 390 animals (371 sheep and 19 caprines) were tested using the ID SCREEN® BLUETONGUE COMPETITION.<br>• *Results*: Overall prevalence was revealed as 39.23%. Species-based prevalence showed ovine 38% and caprine 63.15% seroprevalence respectively. | | | Epidemiological study | | |
| 5) Munmun T. K. *et al*. (2022). **Seroprevalence and risk factors of bluetongue virus in sheep of Chattogram, Bangladesh**. Veterinary World, 15(6), 1589. | • 150 sheep sera samples were tested using the ID SCREEN® BLUETONGUE COMPETITION.<br>• *Results*: prevalence 39.3% ($CI_{95\%}$ 31.5–47.6%). | | | Epidemiological study | | |
| 6) Abera T. *et al*. (2018). **Bluetongue disease in small ruminants in southwestern Ethiopia: cross-sectional sero-epidemiological study**. BMC Research Notes, 11(1), 1-6. | • 422 serum samples from sheep (n=246) and goats (n=176) were collected and screened for the presence of BTV-specific antibodies using the ID SCREEN® BLUETONGUE COMPETITION.<br>• Results: 30.6% ($CI_{95\%}$ 26.2–35%) of the sheep and goat serum samples were found positive. Goats were 2.3 times more likely to be positive for group-specific BT virus antibodies than sheep. | | | Epidemiological study | | |



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| 7) Malik A. I. *et al.* (2018). **Sero-epidemiology of bluetongue virus (BTV) infection in sheep and goats of Khyber Pakhtunkhwa province of Pakistan**. Acta tropica, 182, 207-211. | • A total of n=408 sera originating from sheep (n=212) and goats (n=196) were randomly collected for detection of BTV antibodies using the ID SCREEN® BLUETONGUE COMPETITION.<br>• *Results*: overall prevalence of 50.00% ($CI_{95\%}$ 44.17-54.83%) of BTV in both sheep and goats. The prevalence of BTV in sheep was found higher (56.60%, $CI_{95\%}$ 49.6-63.4%) than in goats (42.86%, $CI_{95\%}$ 35.8-50.1%). | | | | Epidemiological study | |

# BTV ANTIBODY DETECTION (MULTI SEROTYPES)

## CATTLE

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| 8) Dommergues L. *et al.* (2019). **Evidence of bluetongue and Epizootic Haemorrhagic disease circulation on the island of Mayotte**. Acta Tropica, 191, 24-28. | • Epidemiologic study regarding Bluetongue virus (BTV) and Epizootic Haemorrhagic Disease virus (EHDV). 385 cattle were tested for the presence of BTV-specific antibodies using the ID SCREEN® BLUETONGUE COMPETITION and for genome prevalence using PCR.<br>• *Results:* Almost all the selected cattle showed antibodies against both BTV and EHDV, at 99.5% ($CI_{95\%}$98.00-100%) and 96.9% ($CI_{95\%}$94.5-98.3%), respectively. EHDV and BTV genomes were detected in 25.2% ($CI_{95\%}$21.1-29.8%) and 18.2% ($CI_{95\%}$14.6- 22.4%) of samples, respectively. Five serotypes of BTV and one serotype of EHDV were identified from eight samples: BTV-4, BTV-9, BTV-11, BTV-15, BTV-19, and EHDV-6.<br>**The ID SCREEN® BLUETONGUE COMPETITION can detect BTV4, BTV9, BTV11, BTV15 and BTV 19 antibodies.** | | Correlation with other techniques | | Epidemiological study | |
| 9) Viarouge C. *et al.* (2014). **Identification of bluetongue virus and epizootic hemorrhagic disease virus serotypes in French Guiana in 2011 and 2012**. Veterinary microbiology, 174(1-2), 78-85. | • Blood samples were collected from 122 cattle to perform virological and serological (using the ID SCREEN® BLUETONGUE COMPETITION) analyses.<br>• *Results*: viro- and seroprevalence of 85% and 84%. 7 BTV serotypes were identified (BTV1, 2, 10, 12, 13, 17, and 24).<br>**The ID SCREEN® BLUETONGUE COMPETITION can detect antibodies to serotypes BTV1, 2, 10, 12, 13, 17, and 24.** | | Correlation with other techniques | | Epidemiological study | |



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## CATTLE AND SMALL RUMINANTS

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| 10) Chambaro H. M. *et al*. (2020). **Co-Circulation of Multiple Serotypes of Bluetongue Virus in Zambia**. Viruses, 12(9), 963. | • 449 samples from cattle were analyzed using the ID SCREEN® BLUETONGUE COMPETITION. A molecular screening was performed on other cattle and goat sera.<br>• *Results*: Antibodies against BTV were detected in 432 of 449 of the cattle. Overall seroprevalence was 96.2% ($CI_{95\%}$ 94.0–97.6). Five different BTV serotypes were detected in cattle, that is 3, 5, 7, 12, and 15, while only serotype 5 was detected in goats.<br>**The ID SCREEN® BLUETONGUE COMPETITION can detect BTC antibodies in a country where the BTV3, BTV5, BTV7, BTV12, and BTV 15 are circulating.** | Correlation with other techniques | | Epidemiological study | | |
| 11) Batten C. A. *et al*. (2008). **Bluetongue virus: European Community inter-laboratory comparison tests to evaluate ELISA and RT-PCR detection methods**. Veterinary microbiology, 129(1-2), 80-88. | • This study describes two inter-laboratory comparison tests to evaluate the sensitivity and specificity of ELISA (including the ID SCREEN® BLUETONGUE COMPETITION) and RT-PCR assays. The first ring trial determined the ability of laboratories to detect antibodies to all 24 serotypes of BTV. The second ring trial determined the ability of laboratories to detect BTV8 antibodies and RNA, as well as the diagnostic sensitivity of the assays.<br>• *Results*: Ring trial 1: The ID SCREEN® BLUETONGUE COMPETITION detected all the 24 serotypes and was specific to BTV. Ring trial 2: The ID SCREEN® BLUETONGUE COMPETITION detected BTV8 antibodies by 8 dpi in sheep and 9 dpi in cattle.<br>**The ID SCREEN® BLUETONGUE COMPETITION can detect 24 antibodies to serotypes (BTV1 to BTV24). Seroconversion can be detected at 8 dpi for sheep and 9 dpi for cattle.** | Correlation with other techniques | | | Experimental study | Performance evaluation |



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## SMALL RUMINANTS

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| 12) Sohail T. *et al*. (2018). **Seroprevalence of Bluetongue Virus in small ruminants in Balochistan province, Pakistan**. Transboundary and emerging diseases, 65(5), 1272-1281. | • Cross-sectional study to determine seroconversion and prevalent serotypes in selected districts using the ID SCREEN® BLUETONGUE COMPETITION and RT–PCR. Sera (n = 876) were collected from clinically healthy sheep and goats. Real-time PCR-based serotyping was used to characterize the serotypes present.<br>• *Results*: The overall prevalence of BTV seroconversion was 47.26% ($CI_{95\%}$43.92–50.63%). A higher percentage of goats (50.87%, $CI_{95\%}$ 45.99–55.73%) were seropositive than sheep (44.21%, $CI_{95\%}$ 39.81–48.70%). Serotype 8 was the most prevalent (26.82%, $CI_{95\%}$ 14.75–43.21%) followed by an equal prevalence of serotypes 2 and 9 (7.31%, $CI_{95\%}$ 1.91–21.01%).<br>**The ID SCREEN® BLUETONGUE COMPETITION can detect antibodies to BTV2, BTV8 and BTV9.** | Correlation with other techniques | | | Experimental infection | |
| 13) Kamar D. *et al*. (2015). **Bluetongue virus in Morocco from 2004-2012**. J. Anim. Health Prod, 3(3), 48-53. | • 339 serum samples were tested for antibodies against BTV using the ID SCREEN® BLUETONGUE COMPETITION. To classify the BTV-positive sera according to their serotype, a virus-neutralizing test (VNT) was carried out using BTV1 and BTV4.<br>• *Results*: Overall seroprevalence 76.94%. VNT showed a prevalence of antibodies against BTV1 and BTV4 at 75.89% and 24.10% respectively.<br>**The ID SCREEN® BLUETONGUE COMPETITION can detect BTV1 and BTV4 antibodies.** | Correlation with other techniques | | Epidemiological study | | |

## CAMELS

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| 14) Shabbir M. Z. *et al*. (2020). **Sentinel surveillance of selected veterinary and public health pathogens in camel population originating from Southern Punjab province, Pakistan**. Acta tropica, 205, 105435. | • 992 camel sera were tested using the ID SCREEN® BLUETONGUE COMPETITION.<br>• *Results*: Overall seroprevalence was found at 70.26% ($CI_{95\%}$ 67.29–73.07%). Among the total herds included (n=74), a genome corresponding to BT virus (BTV) was detected in 14 herds (18.92%, $CI_{95\%}$ 11.09-30.04%). Among the positive herds, serotypes 1, 8, and 11 were detected for BTV.<br>**The ID SCREEN® BLUETONGUE COMPETITION can detect BTV1, BTV8, and BTV11 antibodies.** | Correlation with other techniques | | | Experimental study | Performance evaluation |



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# BTV1 ANTIBODY DETECTION

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| 15) Corbière F. *et al*. (2012). **Bluetongue virus serotype 1 in wild ruminants, France, 2008–10.** Journal of wildlife diseases, 48(4), 1047-1051. | • Epidemiological study on **wildlife** (red deer, n= 332; roe deer, n= 185; mouflons, n=74; Pyrenean chamois, n=307) using the ID SCREEN® BLUETONGUE COMPETITION. Spleen samples were tested for BTV RNA by BTV RT-qPCR and BTV1-RTqPCR.<br>• *Results*: No antibodies detected in roe deer and mouflons. Seroprevalence in red deer 50.35%, seroprevalence in Pyranean chamois 0.36%. BTV1-RNA was detected in 81 out of the 92 positive spleens (88%). | Correlation with other techniques | Particular species | Epidemiological study | |
| 16) Meyer G. *et al*. (2009). **Lethal bluetongue virus serotype 1 infection in llamas**. Emerging infectious diseases, 15(4), 608-610. | • 9 healthy **llamas** in a sheep farm infected with BTV1 were tested using RT-PCR / qRT-PCR and sera were furthermore tested using the ID SCREEN® BLUETONGUE COMPETITION.<br>• *Results*: Of the 9 llamas, 7 had positive results for RT-PCR, and serotype 1 was confirmed by qRT-PCR. After 6 weeks, all infected llamas show serologic response to BTV. | Correlation with other techniques | Particular species | Epidemiological study | |

# BTV3 ANTIBODY DETECTION

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| 17) Holwerda M. *et al.* (2023). **Emergence of bluetongue virus serotype 3 in the Netherlands in September 2023**. bioRxiv (2023): 2023-09. | • Description of the BTV3 outbreak in the Netherlands in September 2023. Sheep with clinical signs of BTV were tested with RT-PCR and using the ID SCREEN® BLUETONGUE COMPETITION. Whole genome sequencing was performed. On the top of that, retrospective analysis to investigate the epidemiological situation the month before the outbreaks has been done by testing bulk tank milk in cattle that were collected in August 2023. These samples were tested with ID SCREEN® BLUETONGUE MILK INDIRECT.<br>• *Results*: BTV infection was confirmed by RT-PCR and the ID SCREEN® BLUETONGUE COMPETITION. Six of the seven blood samples taken from five sheep farms tested PCR-positive. Five out of six PCR-positive also tested positive for antibodies against BT with blocking percentages >90%. Genotyping revealed that the BTV outbreak was caused by serotype 3. Retrospective analysis of bulk tank milk samples revealed some BT-positive herds, which have, for most of them, a BTV8- | | | Epidemiological study | |



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| | vaccination background. Positive herds with no vaccination were not clustered and showed a distribution that was very similar to the ones that were vaccinated. Therefore, it is very likely that these outbreaks initially took their source in one of the affected farms in September 2023. | | | | | |
| 17) Ahmed S. *et al*. (2019). **Presence of bluetongue and epizootic hemorrhagic disease viruses in Egypt in 2016 and 2017**. Infection, Genetics and Evolution, 73, 221-226. | • A total of 227 cattle blood samples were tested by using the ID SCREEN® BLUETONGUE COMPETITION. Available positive ELISA samples were therefore tested for genome detection by RT-qPCR.<br>• *Results*: 94 of the 227 animals tested were positive for BTV antibodies (41.4%). Of these 94 ELISA-positive cattle, only 83 EDTA-blood samples were available and therefore tested for BTV and EHDV genome detection by RT-PCR and sequencing. 2 samples were found to be positive by RT-qPCR specific to BTV-3 and negative by the RT-qPCR for BTV-1, -2, -4, -8, -9, and -16. 5 other samples were positive for BTV genome, without knowledge of the serotype. 7 samples were positive for the EHDV genome including 6 samples for the EHDV1 genome.<br>**The ID SCREEN® BLUETONGUE COMPETITION can detect BTV3 antibodies.** | Correlation with other techniques | | Epidemiological study | | |

## BTV4 ANTIBODY DETECTION

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| 18) Sailleau C. *et al*. (2018). **Complete genome sequence of bluetongue virus serotype 4 that emerged on the French island of Corsica in December 2016**. Transboundary and emerging diseases, 65(1), e194-e197. | • Serum samples from 86 sheep and 21 goats were tested using the ID SCREEN® BLUETONGUE COMPETITION. Each ELISA-positive serum was therefore tested by SNT against BHV1 and BHV4.<br>• *Results*: 23 of 107 (21.4%) animals were tested positive by ELISA. SNT performed on ELISA-positive samples showed BTV-1 NA only in one animal while 19 animals tested positive against BTV4.. | Correlation with other techniques | | Epidemiological study | | |
| 19) Katsoulos P. D. *et al.* (2016). **Epidemiological characteristics and clinicopathological features of bluetongue in sheep and cattle, during the 2014 BTV serotype 4 incursion in Greece**. Tropical Animal Health and Production, 48(3), 469-477. | • Epidemiological study in sheep during a BTV4 outbreak using the ID SCREEN® BLUETONGUE COMPETITION.<br>• *Results*: seroprevalence 36.5% ($CI_{95\%}$ 15.7-57.3%). | | | Epidemiological study | | |

## BTV8 ANTIBODY DETECTION

## CATTLE

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| 20) Bournez L. *et al.* (2018). **Estimation of French cattle herd immunity against bluetongue serotype 8 at the time of its re-emergence in 2015**. BMC veterinary research, 14(1), 1-11. | • The objective of this study was to estimate the proportion of cattle still immune to BTV8 at its re-emergence in 2015. 8525 cattle born before the vaccination ban in 2013 and 15799 cattle born after the ban were tested using the ID SCREEN® BLUETONGUE COMPETITION and another commercial ELISA test (of 37 laboratories involved in the study, 33 used the ID SCREEN® BLUETONGUE COMPETITION).<br>• *Results*: A seroprevalence of 95% was observed for animals born before 2008, of which > 90% were exposed to two compulsory vaccination campaigns in 2008-2010. None of the animals born before 2008 were found to be infected, unlike 19% of the young cattle which had never been vaccinated. This suggests that most ELISA-positive animals were pre-immune to BTV-8. 18% (from 12% to 32% per département) of the French cattle population was probably pre-immune in 2015. | | | Epidemiological study | | |
| 21) Courtejoie N. *et al.* (2018). **Circulation of bluetongue virus 8 in French cattle, before and after the re-emergence in 2015**. Transboundary and emerging diseases, 65(1), 281-284. | • Serological study (n= 2565 cattle) before and after a re-emergence of BTV8 using the ID SCREEN® BLUETONGUE COMPETITION. When sera were still available after ELISA testing, positive and doubtful results were confirmed by BTV8-SNT.<br>• *Results*: A detailed analysis of results suggests that the presence of BTV8 infection prior to the detection of the virus in 2015 is likely, with spread at low levels. Most ELISA-positive results were confirmed by SNT (11SNT +/12 ELISA +).<br>**The ID SCREEN® BLUETONGUE COMPETITION presents an excellent agreement with BTV8-SNT.** | Correlation with other techniques | | Epidemiological study | | |
| 22) Vitale N. *et al.* (2016). **Factors Affecting Seroconversion Rates in Cattle Vaccinated with Two Commercial Inactivated BTV-8 Vaccines Under Field Conditions**. Transboundary and Emerging Diseases, 63(2), 175-183. | • The immunogenicity of two inactivated BTV-8 vaccines was evaluated in 880 cattle under field conditions using the ID SCREEN® BLUETONGUE COMPETITION and serum neutralization test (SNT).<br>• *Results:* Of the 880 cattle vaccinated, 76.0% yielded BTV ELISA antibodies, whereas 25.0% seroconverted based on SNT. | Correlation with other techniques | | | Vaccination study | |



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| 23) Niedbalski W. (2011). **Evaluation of commercial ELISA kits for the detection of antibodies against bluetongue virus**. Polish Journal of Veterinary Sciences. | • Evaluation of 6 commercial ELISA kits (including the ID SCREEN® BLUETONGUE COMPETITION) for the detection of antibodies against BTV. A panel of sera from healthy cattle, never vaccinated or exposed to BTV (n=312) was used to evaluate specificity. A panel of sera from BTV8-infected (n=74) and BTV8-vaccinated (n=432) animals was used to evaluate sensitivity.<br>• *Results*: specificity 99.3%; sensitivity on infected animals 100%; sensitivity on vaccinated animals 96.5%. | Performance evaluation |



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## SMALL RUMINANTS

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| 24) Hilke J. *et al*. (2019). **Presence of Antibodies against Bluetongue Virus (BTV) in Sheep 5 to 7.5 Years after Vaccination with Inactivated BTV-8 Vaccines**. Viruses, 11(6), 533. | • 36 sheep, previously vaccinated against BTV-8 were included in this field study. The sheep were blood sampled five (n = 31) to 7.5 years (n = 5) after their last vaccination. All serum samples (n = 36) were tested for BTV group-specific antibodies using the ID SCREEN® BLUETONGUE COMPETITION. In five of the animals, the BTV-8 serotype-specific antibody titers were measured by serum neutralization (SN).<br>• *Results*: Most of the sheep that were vaccinated annually for two or more years showed a positive ELISA (14/18 sheep) and an SN (two of two sheep) result 5 years after their last vaccination. Most of the sheep vaccinated fewer than twice showed a negative ELISA result 5 to 7.5 years after their last vaccination (13/18 animals). The three animals in this group tested by SN showed one negative and two positive results.<br>**The ID SCREEN® BLUETONGUE COMPETITION is able to detect the presence of BTV antibodies in sheep 5 to 7.5 years after vaccination with inactivated BTV-8 vaccines.** | Correlation with other techniques<br>Vaccination study |

## CATTLE AND SMALL RUMINANTS

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| 25) Toussaint J. F. *et al*. (2007). **Bluetongue in Belgium, 2006.** Emerging Infectious Diseases, 13(4), 614. | • Sera from sheep and cattle (n=142) with clinical signs of Bluetongue (n=79) were tested using the ID SCREEN® BLUETONGUE COMPETITION and RT-qPCR, 4 weeks after the onset of the Bluetongue outbreak in Belgium in 2006. Furthermore, 650 samples from field samples before 2006 were tested using the ID SCREEN® BLUETONGUE COMPETITION.<br>• *Results*: For cattle, 68% had antibodies to BTV and 78% of 41 samples contained viral RNA. For sheep, 23% had antibodies to BTV and 45% of 33% contained viral RNA. All the field samples collected before 2006 were negative, indicating a 100% specificity for the ID SCREEN® BLUETONGUE COMPETITION. Molecular characterization in BTV isolates indicated serotype 8.<br>**This study demonstrates that the ID SCREEN® BLUETONGUE COMPETITION has a 100% specificity and can detect BTV8.** | Correlation with other techniques<br>Epidemiological study<br>Performance evaluation |



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## CAMELIDS

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| 26) Schulz C. *et al*. (2012). **Experimental infection of South American camelids with bluetongue virus serotype 8**. Veterinary Microbiology, 154(3-4), 257-265. | • Three alpacas (*Vicugna pacos*) and three llamas (*Lama glama*) were experimentally infected with BTV-8. Serological data were collected from samples taken on 1, 2, 6, 8, 10, 13, 16, 20, 24, 28, 35, 48, 62, 70, 77, 83, 90, 97, and 106 dpi using the ID SCREEN® BLUETONGUE COMPETITION, another commercial test and SNT against BTV8 isolate.<br>• *Results*: All animals seroconverted. Seroconversion was first measured 8 days after infection (dpi) using the ID SCREEN® BLUETONGUE COMPETITION, and neutralising antibodies appeared at 10–13 dpi. All animals remained positive until the end of the experiment(106 dpi).<br>**The ID SCREEN® BLUETONGUE COMPETITION can detect seroconversion in experimentally alpacas and llamas from 8 to 106 dpi.** | Correlation with other techniques<br>Experimental infection |

## WILDLIFE

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| 27) Jauniaux T. P. et al. (2008). **Bluetongue in Eurasian lynx**. Emerging Infectious Diseases, 14(9), 1496. | • Report of a BTV8 infection, disease, and death in 2 Eurasian lynx. Anti-BTV antibodies were detected in lung tissue fluid from one of the 2 animals using the ID SCREEN® BLUETONGUE COMPETITION. | Particular species<br>Isolated case |

## BTV14 ANTIBODY DETECTION

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| 28) Koltsov A. *et al*. (2020). **Identification and characterization of Bluetongue virus serotype 14 in Russia**. Frontiers in Veterinary Science, 7, 26. | • Monitoring survey of cattle (n= 1623) using the ID SCREEN® BLUETONGUE COMPETITION. BTV serotype was identified using BTV14-RT-PCR and VNT against antisera to each of the 25 BTV serotypes (1-24, 26)<br>• *Results*: 471 animals tested positive by ELISA and 183 by PCR for BTV14 RNA. VNT confirmed BTV14 serotype.<br>**The ID SCREEN® BLUETONGUE COMPETITION is able to detect the presence of BTV14 antibodies.** | Correlation with other techniques<br>Epidemiological study |



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## ATYPICAL BTV (BTV25-26-27-28)

*(transmitted horizontally by direct contact between infected and susceptible hosts)*

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| 29) Sana K. *et al.* (2022). **Risk-based serological survey of bluetongue and the first evidence of bluetongue virus serotype 26 circulation in Tunisia**. Veterinary Medicine and Science. | • A total of 3314 blood samples were screened using the ID SCREEN® BLUETONGUE COMPETITION. Out of the positive samples, some samples were analyzed by serum neutralization test (SNT) to identify circulating BTV serotypes.<br>• *Results*: Of 3314 sera, 1330 were ELISA-positive (40.1%) for antibodies against the BTV structural protein VP7. Out of the 200 positive samples in ELISA, which were analyzed by SNT test to identify BTV serotypes, 105 samples had neutralizing antibodies, which represented 52.5% of the tested samples. The result of SNT showed the presence of BTV1, BTV2, BTV3, BTV4 and **BTV26**. BTV-1 was the most prevalent serotype (33.3%), followed by BTV-3 (13.3%), BTV-2 (8.6%), BTV-4 (3.8%), and BTV-26 (1%). | Correlation with other techniques | | Epidemiological study | | |
| 30) Bumbarov V. *et al*. (2020). **Characterization of bluetongue virus serotype 28**. Transboundary and emerging diseases, 67(1), 171-182. | • Experimental infection of 8 ewes using **BTV28** (new BTV strain isolated from contaminated vaccine batches). 2 naïve control animals were placed together with the infected sheep. All the animals were sampled daily and serum samples were analyzed using the ID SCREEN® BLUETONGUE COMPETITION and SNT.<br>• *Results*: BTV-specific antibodies were detectable from 7 dpi onwards in all experimentally infected ewes and remained positive throughout the experiment. One of the two in-contact animals seroconverted 14 days after the transfer to the infected animals and remained positive throughout the experiment too. The SNT results demonstrated seroconversion in all the ELISA-positive animals from day 22 dpi through day 85 dpi, when the experiment was completed.<br>**In this experimental study, the ID SCREEN® BLUETONGUE COMPETITION was able to detect BTV28 antibodies in sheep.** | Correlation with other techniques | | | Experimental infection | |



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| 31) Ries C. *et al*. (2020). **Isolation and cultivation of a new isolate of BTV-25 and presumptive evidence for a potential persistent infection in healthy goats**. Viruses, 12(9), 983. | • Monitoring of **BTV25** occurrence in a healthy goat flock (approximately 120 goats) over several years using a BTV25-specific RT-qPCR/SNT and the ID SCREEN® BLUETONGUE COMPETITION.<br>• *Results*: Eleven goats were positive in ELISA at all five bleeding time points, four of those were continuously positive in RT-qPCR as well, and one goat was continuously negative in the RT-qPCR. In total, 55 goats were negative in ELISA at all five bleeding time points, five were continuously positive in RT-qPCR, and 33 were constantly negative. All the ELISA-positive sera lead to the same result of an incomplete neutralization of BTV25. | Correlation with other techniques | | Epidemiological study | | |
| 32) Bréard E. *et al.* (2018). **Bluetongue virus serotype 27: Experimental infection of goats, sheep and cattle with three BTV-27 variants reveal atypical characteristics and likely direct contact transmission BTV-27 between goats**. Transboundary and emerging diseases, 65(2), e251-e263. | • Experimental infection of 15 goats, 11 sheep, and 4 cattle with 3 variants of **BTV27** isolated in asymptomatic goats. Seroconversion was followed using the ID SCREEN® BLUETONGUE COMPETITION and VNT.<br>• *Results*: 14/15 inoculated goats were found positive for antibodies. Some sheep showed a transient increase in antibody levels. None of the cattle showed any seroconversion. Results obtained using VNT and the ID SCREEN® BLUETONGUE COMPETITION were in agreement.<br>**In this experimental study, the ID SCREEN® BLUETONGUE COMPETITION was able to detect BTV27 antibodies in goats and sheep.** | Correlation with other techniques | | | Experimental infection | |



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