EXTERNAL REFERENCES

ID SCREEN® WEST NILE IGM CAPTURE

Last update: September 2023

Publications / References:

1) Lourenço J. *et al*. (2022). **West Nile virus transmission potential in Portugal**. Communications Biology, 5(1), 1-12.	• In a retrospective epidemiological study, equine WNV surveillance data were explored. Molecular and serology testing was performed on 165 horses. Equine sera were tested using the ID Screen® WN IgM Capture ELISA. • *Results*: 33 horses were diagnosed as WNV-positive based on IgM positivity, with one horse being also positive by RT-qPCR.	Correlation with other techniques		Epidemiological study		
2) Scaramozzino P. *et al*. (2021). **West Nile and Usutu viruses co-circulation in central Italy: Outcomes of the 2018 integrated surveillance**. Parasites & Vectors, 14(1), 1-7.	• In context of co-circulation of WNV and Usutu virus (USUV), 193 horse sera were tested using the ID Screen® WN IgM Capture ELISA and analyzed by RT-PCR for WNV Lineage 1 and lineage 2 and for USUV. Reactive sera in ELISA were therefore assayed by VNT against WNV and USUV. • *Results*: 8/193 sera samples were IgM positive, and 5/8 were positive in VNT. Only one of the tested horses had low positivity for USUV antibodies. None of the positive sera were positive on RT-PCR. **The ID Screen® WN IgM Capture ELISA is a specific test to follow a WNV infection when there is a co-circulation with USUV.**	Correlation with other techniques		Epidemiological study		

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3) Beck C. *et al.* (2020). **Contrasted epidemiological patterns of West Nile virus lineages 1 and 2 infections in France from 2015 to 2019**. Pathogens, 9(11), 908.	• Serological survey for 5 years using the ID Screen® WNC ELISA on sera samples from horses with WN suspicion. Then IgG positive sera were further analyzed by the ID Screen® WN IgM Capture ELISA. IgM-positive samples were confirmed by the Microneutralization Test.	Correlation with other techniques		Epidemiological study		
4) Folly A. J. *et al.* (2020). **Equine seroprevalence of West Nile virus antibodies in the UK in 2019**. Parasites & Vectors, 13(1), 1-5.	• 988 serum samples from horses were tested using the ID Screen® WNC ELISA to detect total flavivirus antibodies and the ID Screen® WN IgM Capture ELISA to detect WNV-specific IgM antibodies. Positive IgM results were investigated to establish the clinical history of vaccination of the horses in question. • *Results*: 274 samples were positive for flavivirus antibodies, of which two subsequently tested positive for WNV-specific IgM antibodies. The follow-up investigation established that both horses had been previously vaccinated.			Epidemiological study		
5) de Heus P. *et al.* (2020). **Emergence of West Nile virus lineage 2 in Europe: Characteristics of the first seven cases of West Nile neuroinvasive disease in horses in Austria.** Transboundary and emerging diseases, 67(3), 1189-1197.	• Study of seven cases of West Nile disease in horses. The presence of WNV acid nucleic was tested by RT-qPCR. IgG and IgM antibody responses against flaviviruses in serum and cerebrospinal fluid were tested using the ID Screen® WNC ELISA and the ID Screen® WN IgM Capture ELISA. Positive samples in one or both ELISAS were subjected to SNT and PRNT80. • *Results*: Sera from all but one of the horses gave a positive reaction in the WNV IgM ELISA, and all seven horses were WNV IgG ELISA positive. All horses had neutralizing antibodies against WNV (as shown by PRNT80 or SNT). Potential cross-reactivity caused by previous infection with TBEV or USUV was excluded by the negative results from parallel testing for neutralizing antibodies against these two related flaviviruses. ELISA-reactive WNV antibodies were also detected in CSF in 4 of 5 tested cases. West Nile virus was diagnosed by the detection of viral RNA in all but two cases.	Correlation with other techniques		Epidemiological study		

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6) Barros S. *et al.* (2017). **West Nile virus in horses during the summer and autumn seasons of 2015 and 2016, Portugal**. Veterinary Microbiology 212, 75–79.	• Acute WNV infections were investigated during 3 periods with the ID Screen® West Nile Competition ELISA and the ID Screen® WN IgM capture ELISA, followed by confirmatory serological test VNT (n=989 horse serum samples). • *Results*: During the transmission seasons of WNV, most symptomatic (n = 20) were found positive for IgM, pr-E IgG, and VNT.	Correlation with other techniques		Epidemiological study		
7) Beck C. *et al.* (2017). **Improved reliability of serological tools for the diagnosis of West Nile fever in horses within Europe**. PLoS Negl Trop Dis11(9): e0005936.	• Inter-laboratory proficiency tests were held in 2010 and 2013 to evaluate WNV serological diagnostic tools suitable for European national reference laboratories. • *Results*: ID Screen® West Nile Competition ELISA: Sp=100%, high analytical sensitivity=100% for flaviviruses; ID Screen® WN IgM capture ELISA: SP 100%, Se 100 %.					Performance evaluation
8) Bahuon C. *et al.* (2016). **West Nile virus epizootics in the Camargue (France) in 2015 and reinforcement of surveillance and control networks**. Rev. Sci. Tech. Off. Int. Epiz., 35 (3), 811-824.	• Characteristics of the 2015 WNV epizootics among horses in the Camargue, using ID Screen® West Nile Competition ELISA and ID Screen® WN IgM capture ELISA, followed by confirmatory serological test VNT. • *Results*: early detection of first equine cases, followed by reinforcement of WNV surveillance activities in France.	Correlation with other techniques		Epidemiological study		
9) Monaco F. *et al.* (2015). **The 2011 West Nile disease outbreak in Sardinia region, Italy**. Veterinaria Italiana 2015, 51 (1), 5-16.	• Serostudy on a West Nile disease outbreak in birds and horses with ID Screen® West Nile Competition ELISA and ID Screen® WN IgM capture ELISA. • *Results*: Seroconversion was first detected in sentinel chicken (with WNC), then in sentinel horses (WNC, WN IgM capture, VNT, and PRNT).	Correlation with other techniques		Epidemiological study		
10) Barbić L. *et al.* (2013). **West Nile virus serosurveillance in horses in Croatia during the 2012 transmission season**. Medical Sciences, 39 (2013): 95-104.	• Active serosurveillance study of WNV in sentinel horses using ID Screen® West Nile Competition ELISA and ID Screen® WN IgM capture ELISA. • *Results*: Acute infection was revealed with WN IgM capture, out of 1084 horse sera samples, 12 were positive; seroprevalence was estimated on 1472 horses with WNC (8,7%).			Epidemiological study		

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