Reviewer's report

**Title:** Sensitivity and Specificity of Monoclonal and Polyclonal Immunohistochemical Staining for West Nile Virus in Various Organs from American Crows (Corvus brachyrhynchus)

**Version:** 1  **Date:** 17 November 2006

**Reviewer:** William Reisen

**Reviewer's report:**

General

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Review: Smedley et al. “Sensitivity and Specificity of Monoclonal and Polyclonal Immunohistochemical Staining for West Nile Virus in Various Organs from American Crows (Corvus brachyrhynchus)”

Authors compare the ability of IHC using polyclonal and monoclonal antibodies to detect WNV antigen in fixed AMCR tissue, purportedly for WNV surveillance purposes. Results for the polyclonal data agreed well with real time RT-PCR, but the more specific monoclonal aby was less sensitive causing some false negative results. The paper was well done, well written and well presented, but one is left with the impressions: why publish this now? What really new was learned and are these techniques useful for surveillance? My impression is that the data on tissue tropisms in corvids are not new, i.e., both monoclonal and polyclonal antibodies have been used previously and compared to RT-PCR. Comparison of RT-PCR to IHC in fixed tissue may be a new validation of an approach that has value in pathology studies but probably not in surveillance. The authors indicate the IHC is useful because the previously infectious tissue is now fixed and the virus killed. However, the same results can be achieved more economically by placing the tissue snips directly into lysis buffer for RNA extraction. Conducting RT-PCR on samples in lysis buffer is safe, fast, inexpensive and equally, if not, more sensitive, especially for bird species with much lower viremias at death than AMCRs.

In summary, the authors should carefully indicate what is new in their current study to justify publication and how IHC would improve current surveillance by RT-PCR. I cannot imagine that IHC will be faster or cheaper than RT-PCR on tissue snips in lysis buffer, and as indicated in the manuscript the polyclonal antibody is not specific. Because the IHC results are not specific and an RT-PCR or other test will be needed to ensure that the infecting virus was indeed WNV. For AMCRs with high quantities of virus in their oral cavities, it may be necessary to merely swab the mouth and then test these swabs by RT-PCR to get comparable results to invasive and more time consuming tissue snips. These ideas have been published, but are not discussed in the current manuscript from a surveillance perspective.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

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Discretionary Revisions (which the author can choose to ignore)

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**What next?:** Accept after minor essential revisions

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable
 Statistical review: No

Declaration of competing interests:
I have no competing interests.