

*AABB 2005**Poster Presentation***WEST NILE VIRUS (WNV) VIRAL LOAD COMPARISON STUDY (SP416)**

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Background:

WNV transmission by blood components in 2002 in the US has led North American authorities to implement WNV nucleic acid testing (NAT) screening for blood donation in 2003. In August 2003, seven human and four equine cases were diagnosed in the French Riviera. The French National Blood Service (EFS) decided to evaluate the two NAT WNV systems used in the US (Procleix WNV assay / Chiron; TaqScreen WNV 1.0 assay / Roche).

Method:

The evaluation study was carried out for each NAT WNV system respectively in two blood transfusion centers (BTC): Rennes and Strasbourg for Chiron system in pool of 16, 8 and single donation, both Marseille and Montpellier for Roche system in pool of 6 and single donation. The four BTC tested in replicate the same samples of unlabeled serial dilutions of Accurun WNV RNA. Ten fold dilutions of each WNV strains circulating in US (New York 99) and France (PaAn001) were tested under same conditions using both assays.

Results:

The predicted 95% detection rate of Procleix WNV assay for individual testing was evaluated at 10 and 34 copies/ml by BTC in Rennes and Strasbourg respectively and around 200 copies/ml for the TaqScreen WNV assay. The predicted 95% detection rate of Procleix WNV assay with different pool size was evaluated at 112 and 396 copies/ml (pool of 8), 494 and 612 copies/ml (pool of 16) by BTC in Rennes and Strasbourg respectively and around 1,200 copies/ml (pool of 6) for the TaqScreen WNV assay. For both assays, the same sensitivity was observed with the two different strains (10–3 pfu/ml).

Conclusions:

The Procleix WNV assay is more sensitive than the TaqScreen WNV 1.0 assay in both individual and pooled samples. The same results were obtained with the HC-SC, WNV RNA (Health Canada). In the absence of gold standard, the comparison of the sensitivity of different assays should be performed with identical biological samples. The same detection limit observed with the American and French isolates suggests that the assays used in the US could, if necessary, be used in the Old World without major modifications.