AUTOMATED AND ENHANCED SEMI-AUTOMATED TMA-NAT PLASMA SCREENING METHODS FOR PARVOVIRUS B19 AND HAV

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Aims: To evaluate sample pooling schemes for detection of parvovirus b19 (b19) DNA and hepatitis A virus (HAV) RNA in human plasma using Transcription-Mediated Amplification (TMA) assays with the Procleix® enhanced Semi-Automated System (eSAS) and the automated TIGRIS® System. **Materials/Methods**: The b19 and HAV assays use Gen-Probe's magnetic target capture, TMA, and Hybridization Protection Assay technologies. The assays were developed for the eSAS and the TIGRIS System. Both assays contain an internal control that is captured, amplified, and detected along with the target viral nucleic acids. Dilutions of plasma specimens containing b19 were tested in 8- to 96-member pools to assess assay sensitivity using different sample screening algorithms. **Results**: The HAV TMA assay showed equivalent sensitivity on the eSAS and TIGRIS platforms, with 95% detection below 100 copies/mL for HAV RNA. A modified, low-sensitivity version of the b19 TMA assay was tested with high titer b19 panels either neat or in multiple pool sizes. This modified b19 assay was sensitive to 10,000 IU/mL, which allowed detection of high titer, but not low titer, b19-positive samples in plasma pools. **Conclusion**: These results show that the Procleix-format HAV assay showed equivalent sensitivity on the eSAS and on the TIGRIS DTS System. A reduced sensitivity b19 assay facilitated screening of pooled plasma samples for detection of clinically relevant high titer, but not low titer, b19-positive units.