

# Comparison of the Alinity m system with the established Abbott RealTime and Hologic Aptima Quant Assay in HIV-1, HCV and HBV viral load measurement

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## BACKGROUND

New molecular diagnostic platforms allow to perform multiple parallel tests like detection of HIV, HCV, HBV without the restriction of batching samples. We compared the assay performance of the Abbott Alinity m system with the m2000 and the Hologic Panther.

## METHODS

We tested 1841 clinical samples on the Alinity m and compared results to either m2000 or Panther (Aptima); 1089 HIV, 307 HBV and 445 HCV viral loads. Regression and Bland-Altman analysis were performed, turnaround-times (TAT) analyzed.

## RESULTS

Fig. 1: Method Comparison RealTime vs Alinity m HCV/HIV-1, HCV and HBV regression and Bland Altman

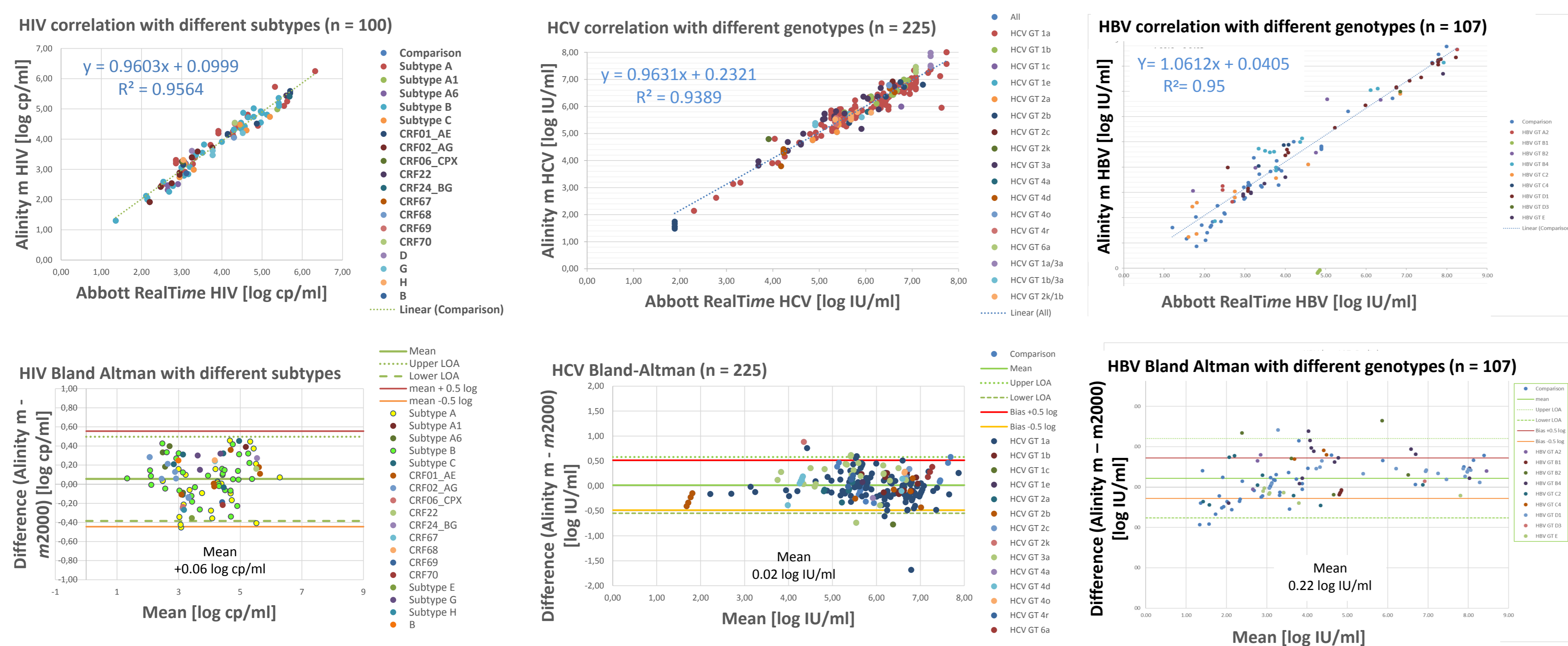


Fig. 2: Turnaround time analysis 1 Alinity m – 3 m2000 [h]

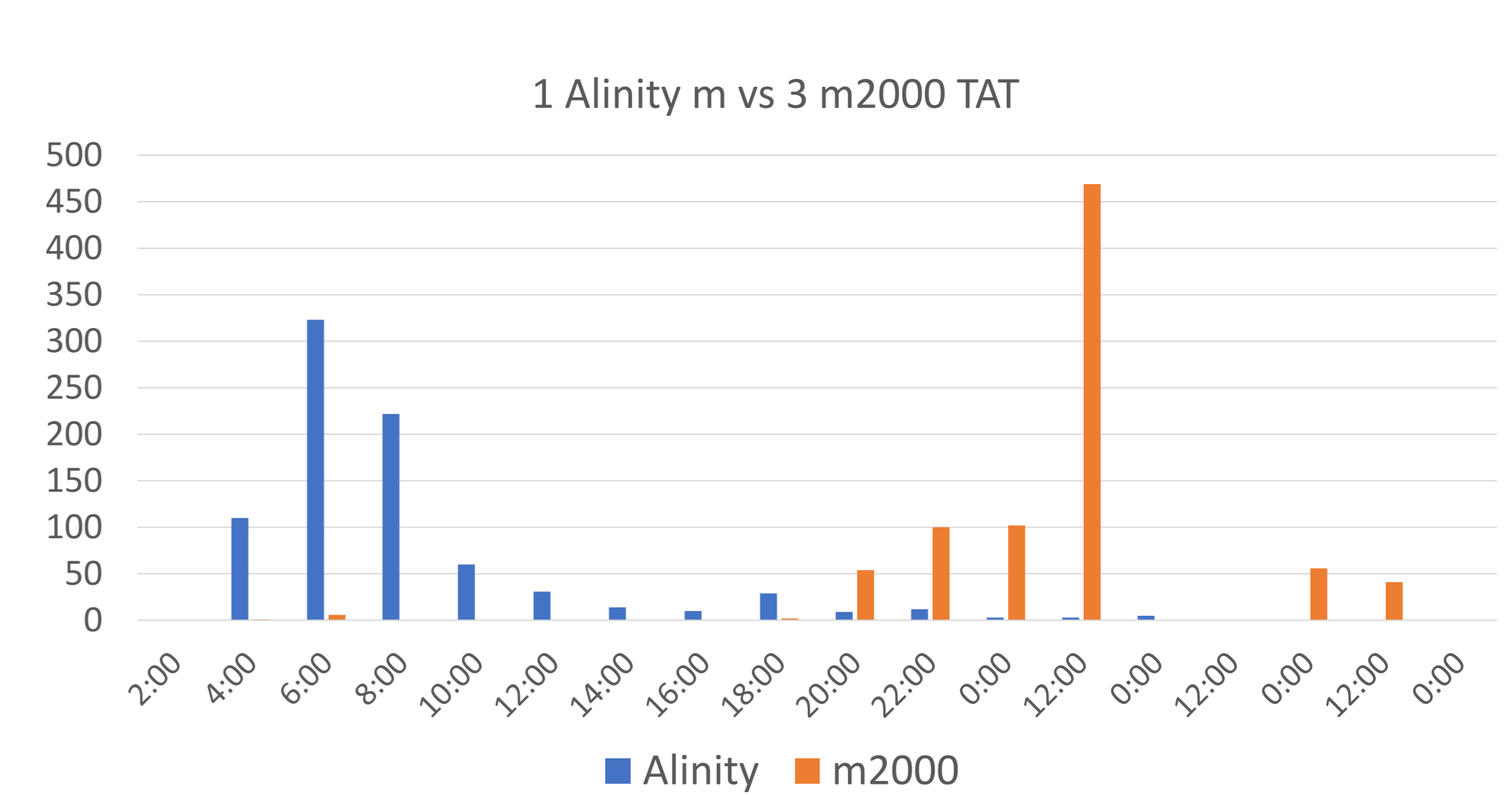


Fig. 3: Method Comparison Aptima vs Alinity m HIV-1, HCV and HBV correlation and Bland-Altman plots

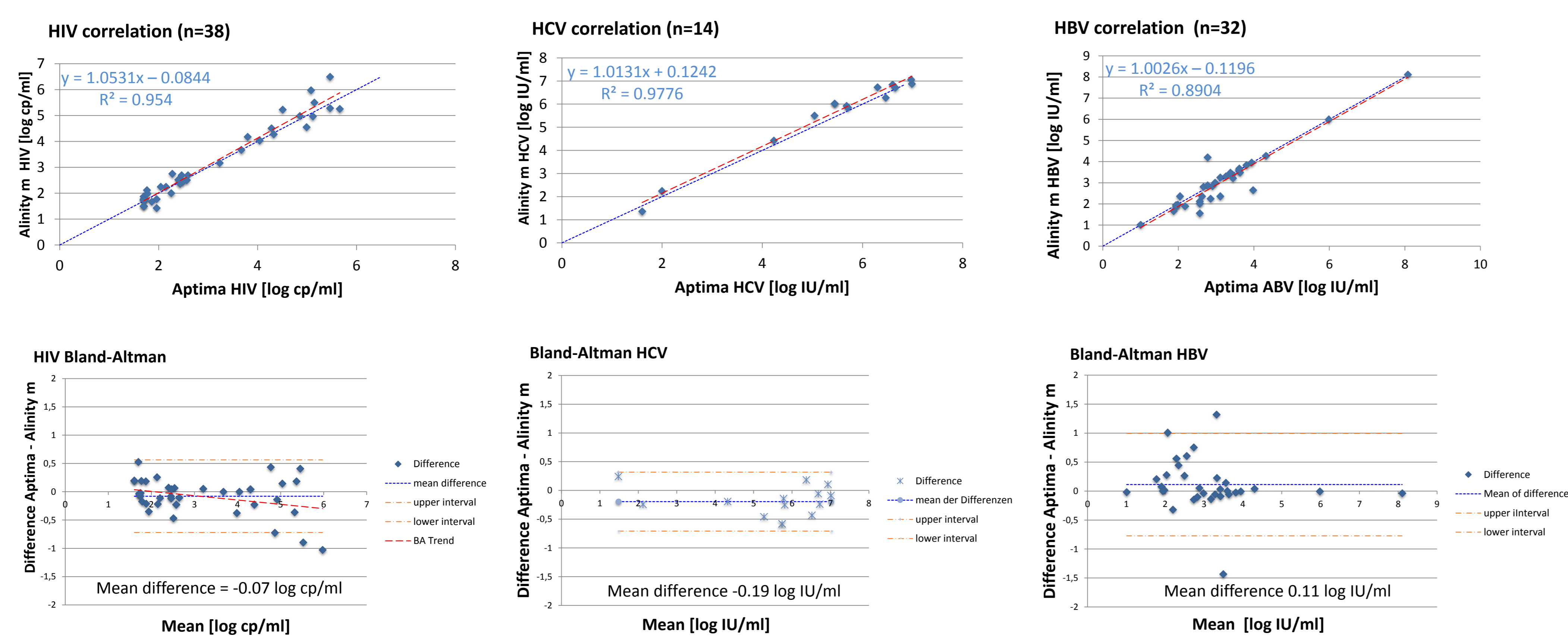
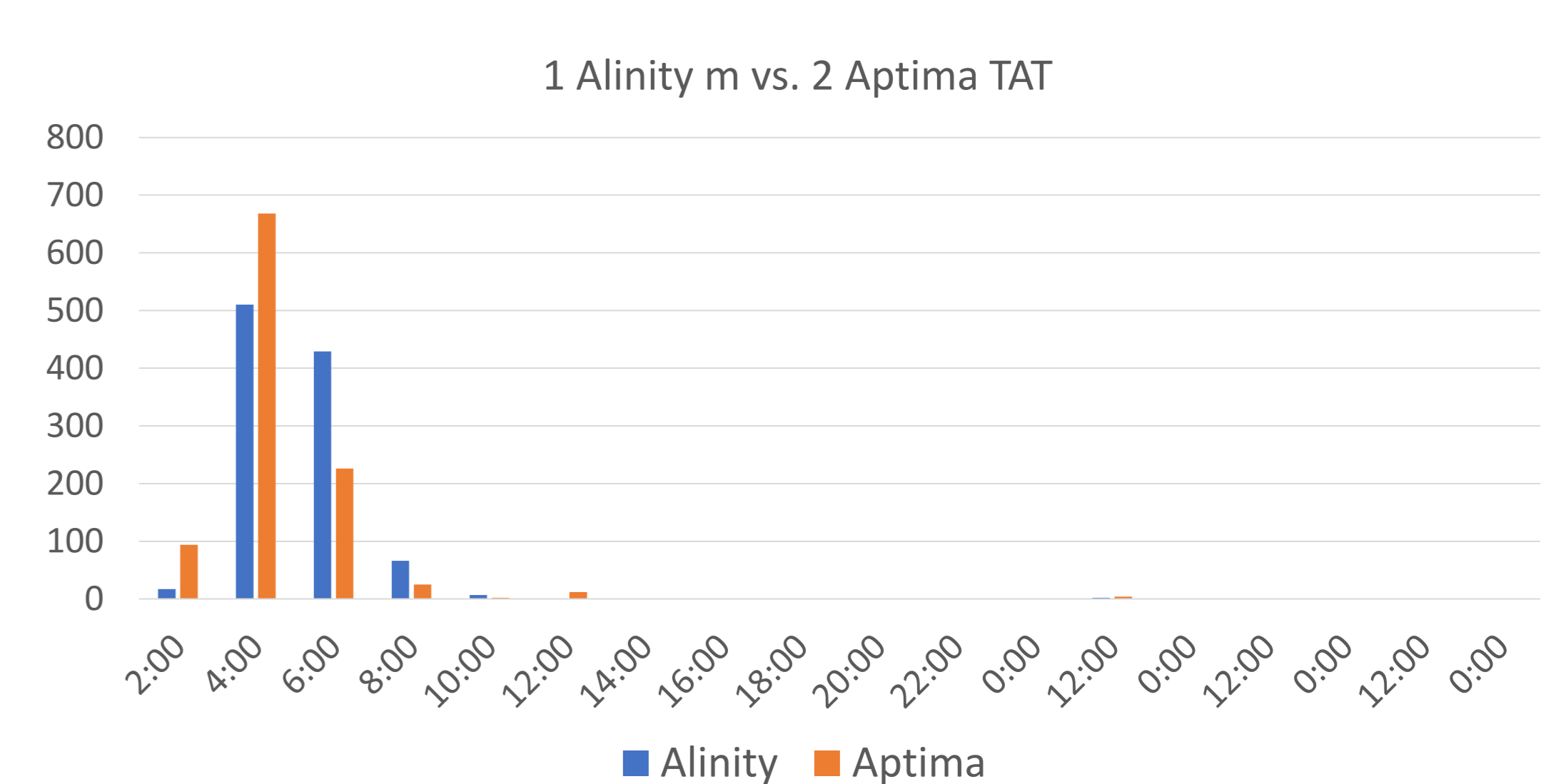


Fig. 4: Turnaround time analysis 1 Alinity m – 2 Panther (Aptima) [h]



## RESULTS

198 samples showed quantitative results for HIV (HBV: 151, HCV: 225). Comparison between Alinity m and m2000 showed high coefficients of correlation (HIV:  $R^2=0.96$ , HCV:  $R^2=0.94$ , HBV:  $R^2=0.95$ ) with similar results between Alinity m and Panther (HIV:  $R^2=0.95$ , HCV:  $R^2=0.98$ , HBV:  $R^2=0.89$ ). TAT analysis showed in 1125 samples with one Alinity m 90% of results were available after 11:09 hours compared to 71:22 hours with three m2000. A second set of 1033 samples was compared between one Alinity m and two Panther showing 90% of results were available after 5:46 hours (Alinity m) and 5:13 hours (2 Panthers).

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## CONCLUSIONS

Our analysis shows excellent performance of the Abbott Alinity m system compared to Abbott and Hologic with high levels of correlation. Turnaround-time shows a relevant reduction of duration until results can be reported compared to m2000, while both random access systems showed similar turnaround-times when comparing a single Alinity m with two Panther systems. The Abbott Alinity m allows to run 20 different assays in parallel as compared to 4 on Panther. This increase in automation leads to faster reportable results with less hands-on-time.