## **Supplementary Materials**

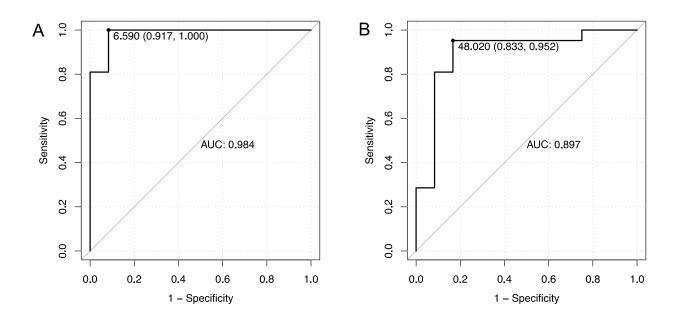


Fig. S1 Diagnostic performance of the concentration and fraction of ddcfDNA. ROC curve of ddcfDNA concentration (A) and fraction (B) in discriminating BKPyVAN and protocol biopsy.

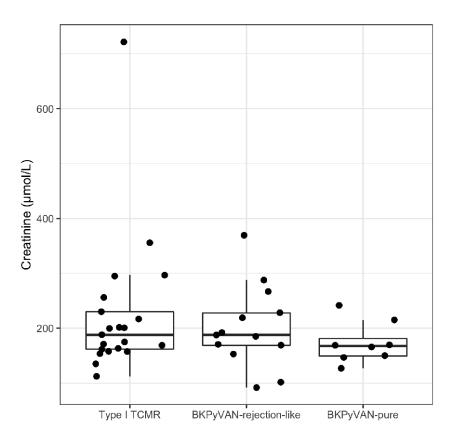


Fig. S2 Serum creatinine levels of Type I TCMR, BKPyVAN-rejection-like and BKPyVAN-pure at the time of biopsy.

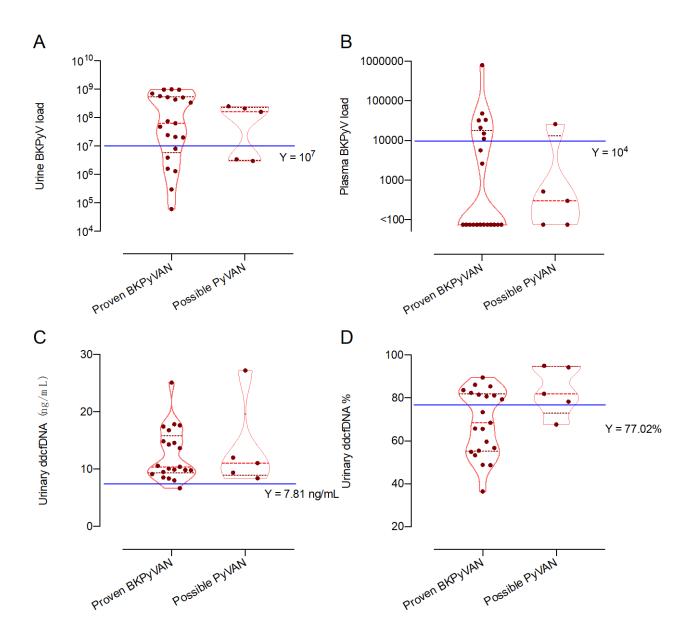


Fig. S3 Comparisons of urine and plasma BKPyV DNA loads and urine ddcfDNA levels in BKPyVAN diagnosis. Urine (A) and plasma (B) BKPyV DNA load; urinary ddcfDNA concentrations (C) and fractions (D). Blue solid line represents the cut of value.