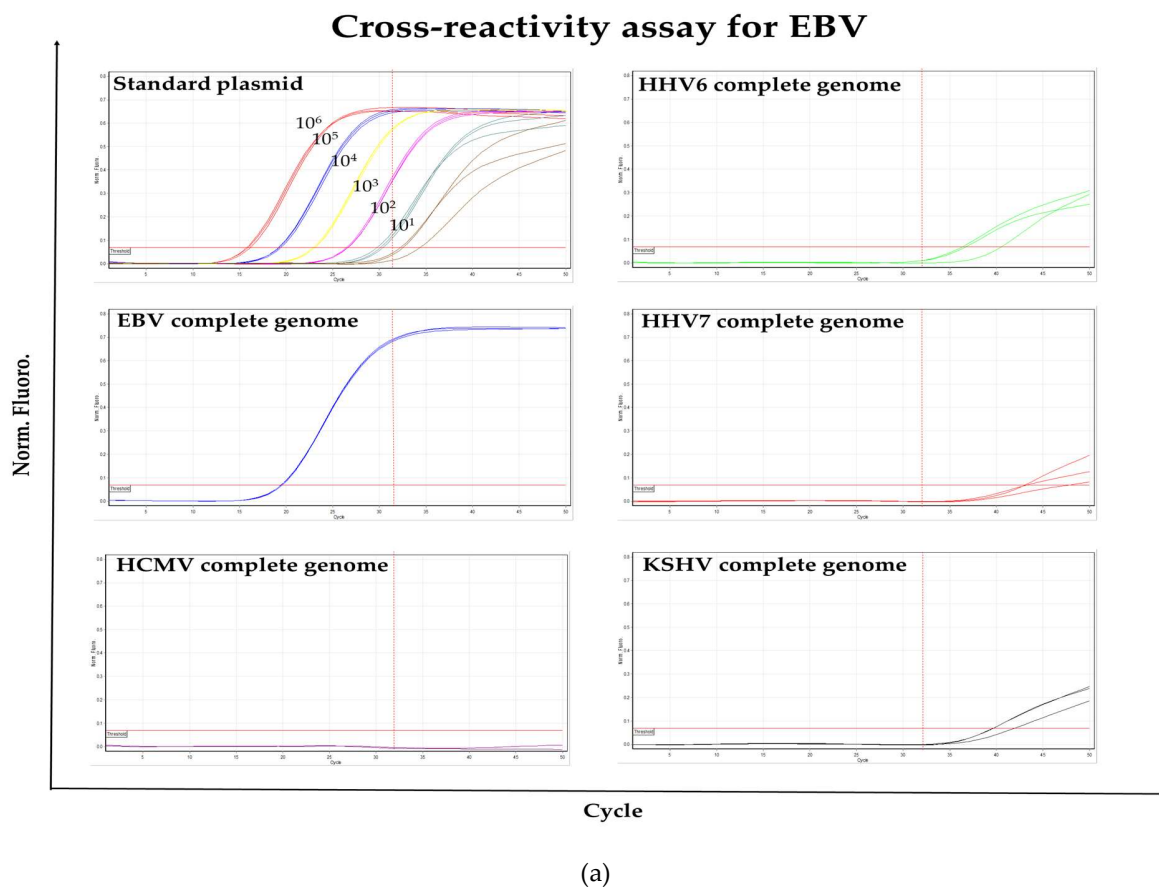
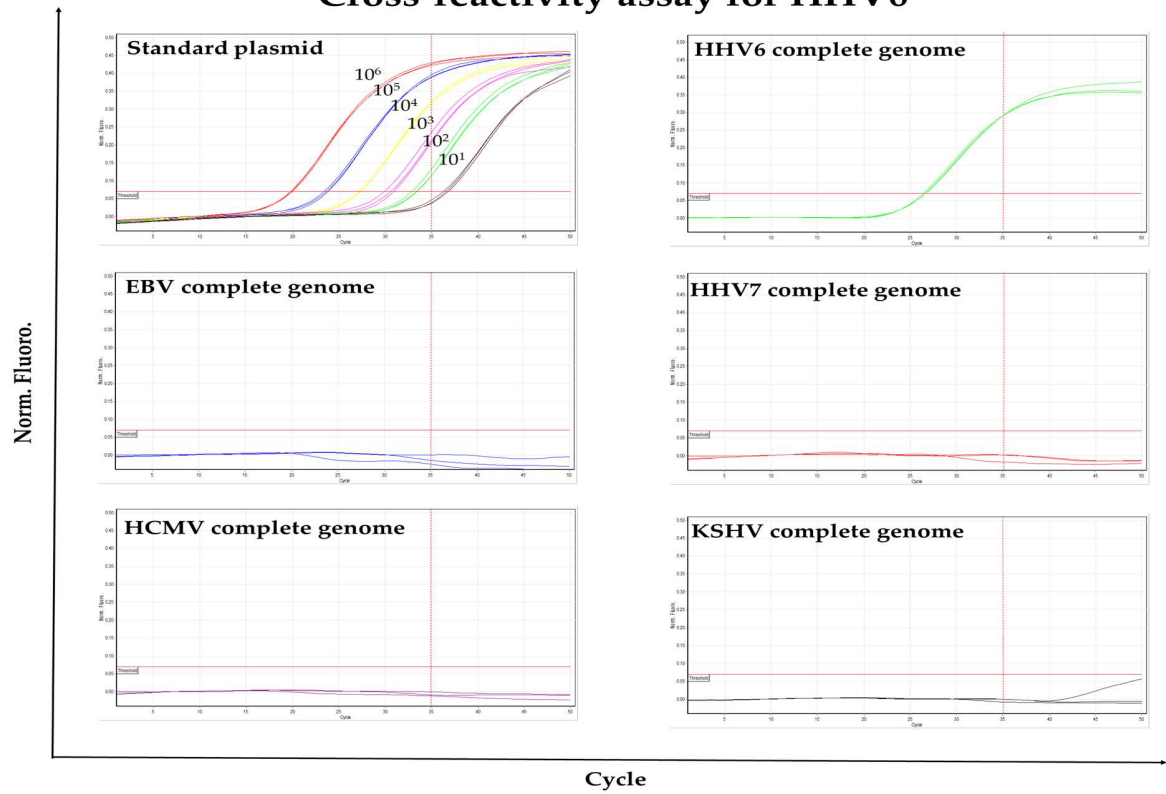


## Supplementary information

**Supplementary Figure S1.** Cross-reactivity assays. The primers and fluorescent probe used to detect one virus were tested for cross-reactivity with the other viruses (as it is indicated in the top of each panel). (a) EBV: Positive fluorescent signal was only detected when EBV DNA, or serial dilutions ( $10^6$ - $10^1$ ) of the EBV standard plasmid were used as template. For all panels, the amplification cycle (Cycle) is shown in the X axis while the normalized fluorescence (Norm. Fluoro.) is shown in the Y axis. Horizontal red lines indicate the Cycle Threshold (Ct). Dotted vertical red lines indicate the limit of detection (LOD). When fluorescence crossed the Ct to the right of this dotted line, virus detection is considered negative. (b) HHV6, (c) HHV7 and (d) KSHV.

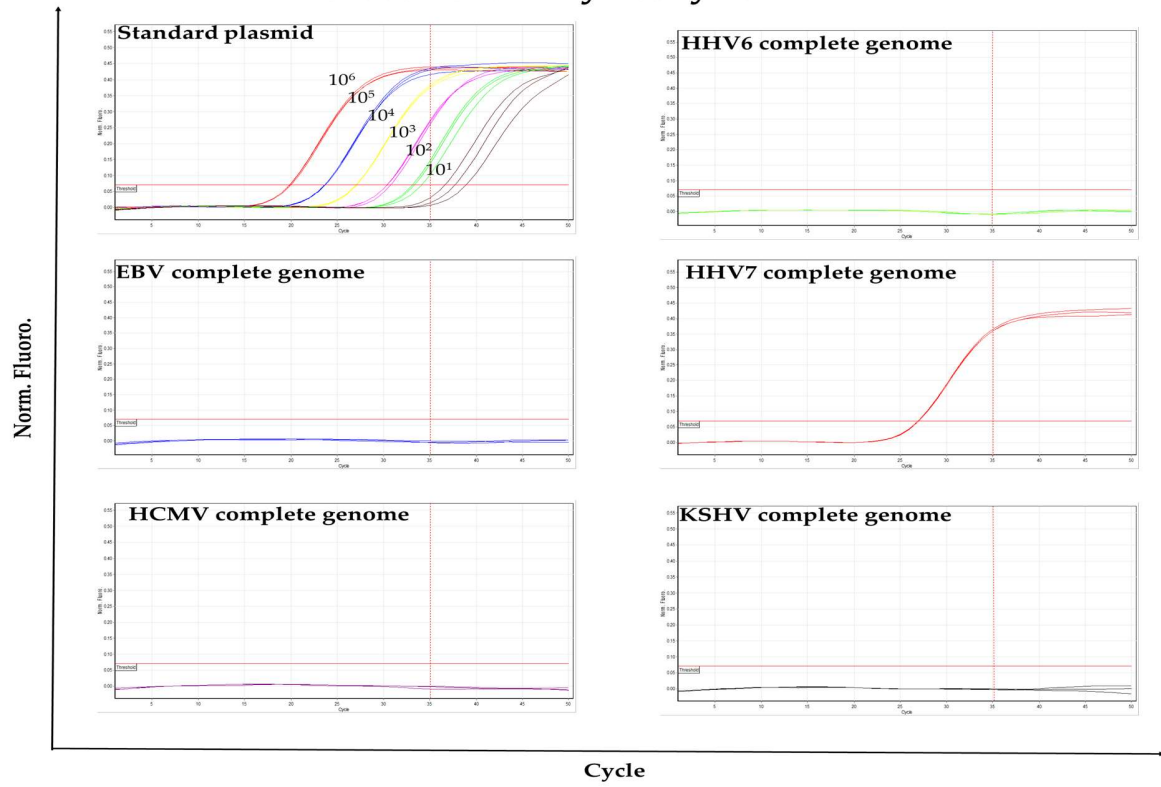


Cross-reactivity assay for HHV6



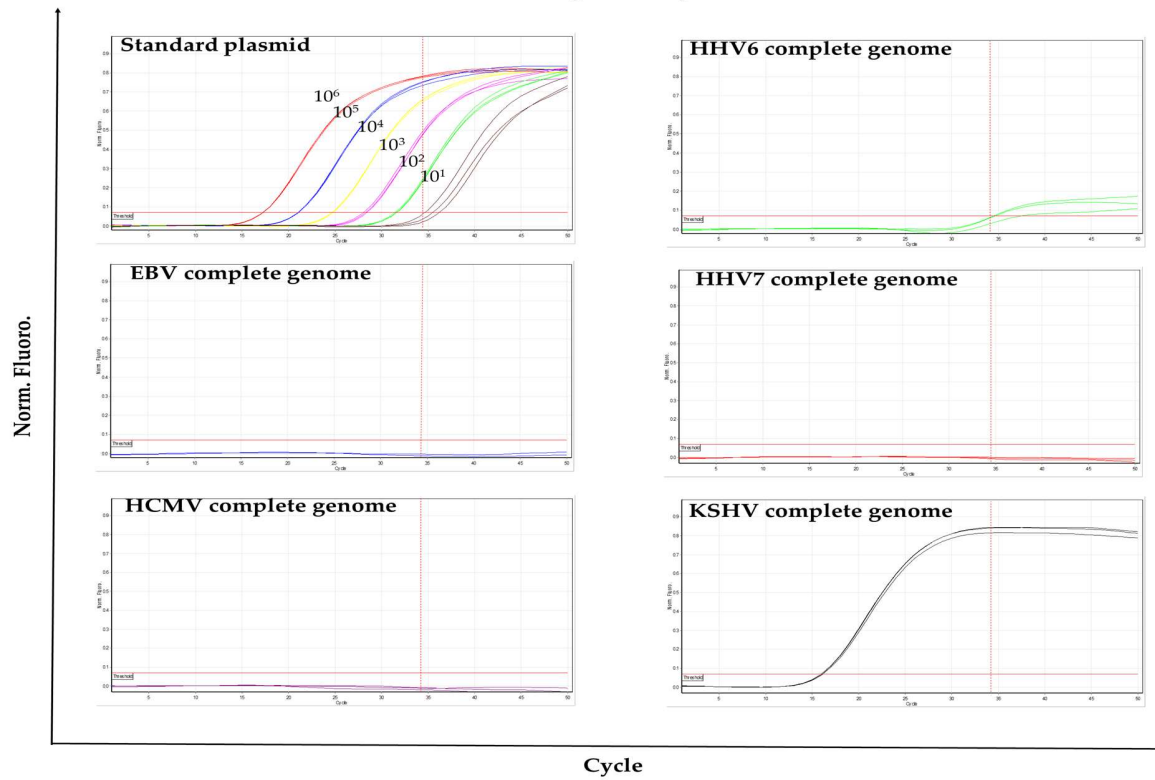
(b)

## Cross-reactivity assay for HHV7



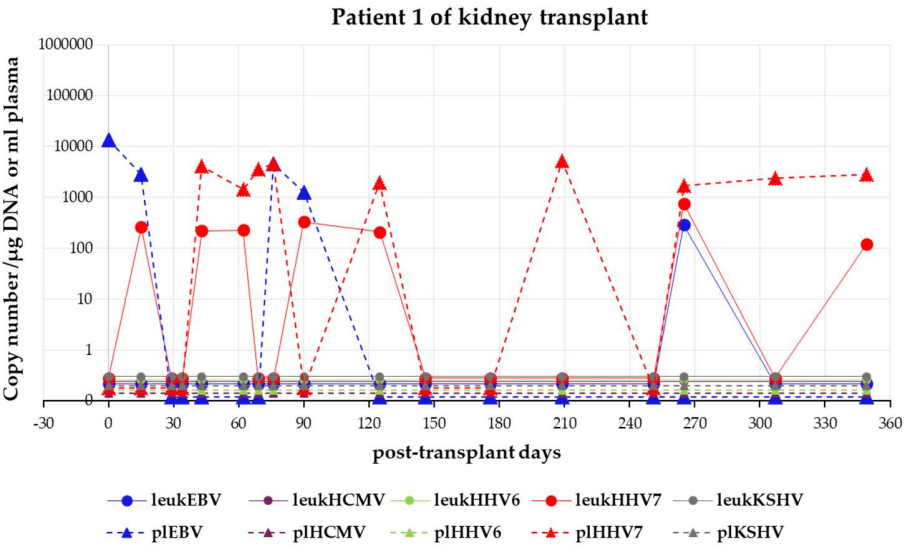
(c)

## Cross-reactivity assay for KSHV

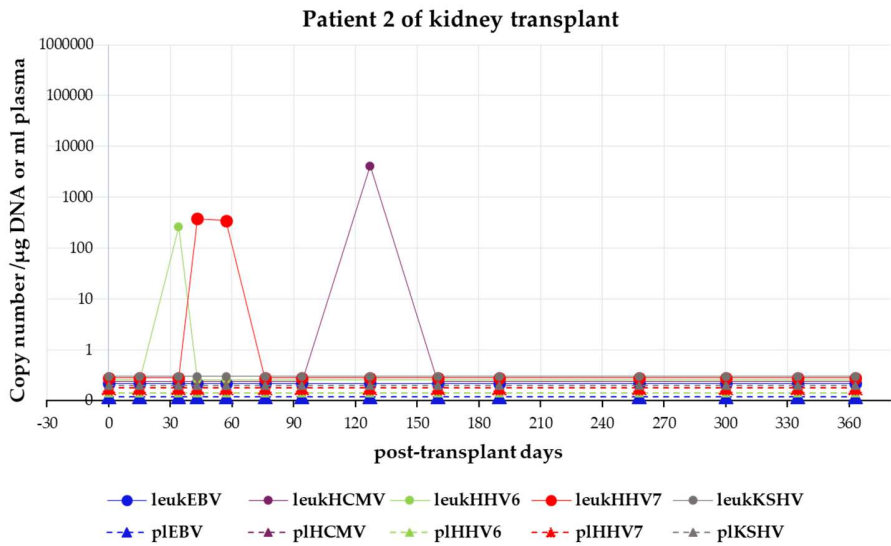


(d)

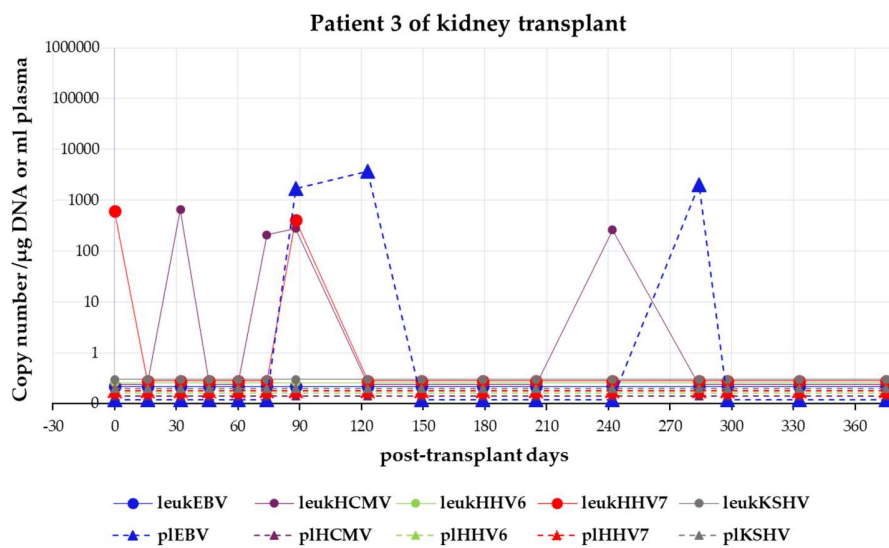
**Supplementary Figure S2.** Kinetics of infection of kidney-transplanted pediatric patients. (a)-(r): Patients 1 to 18. The follow up period is shown in the X axis. Samples of day 0 were collected on the same day of transplant just before the surgery. Viral loads determined as the copy number/ $\mu\text{g}$  of DNA (leukocytes) or copy number/ml (plasma) are shown in the Y axis. Viruses are color-coded as indicated. Infections detected in leukocytes (leuk) are drawn as continuous lines while those detected in plasma (pl) are drawn as dotted lines. Horizontal lines below one viral copy indicate that virus was undetected.



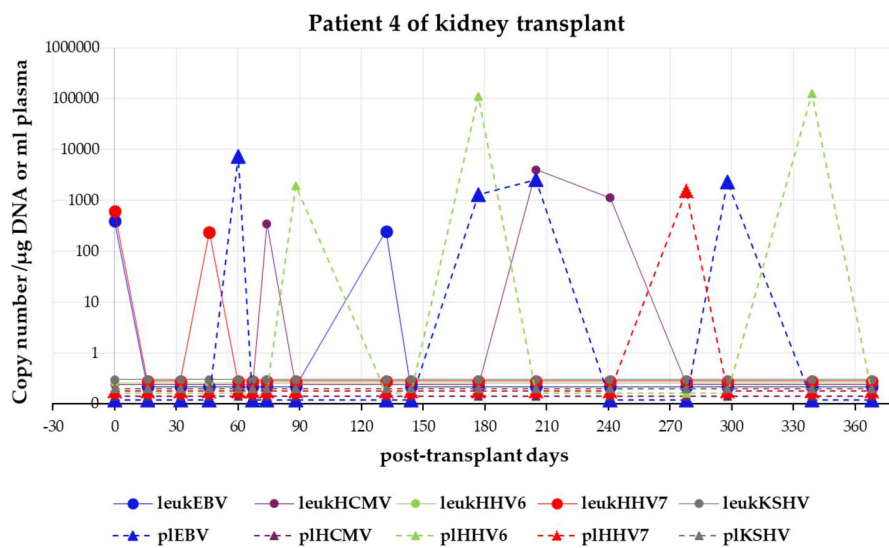
(a)



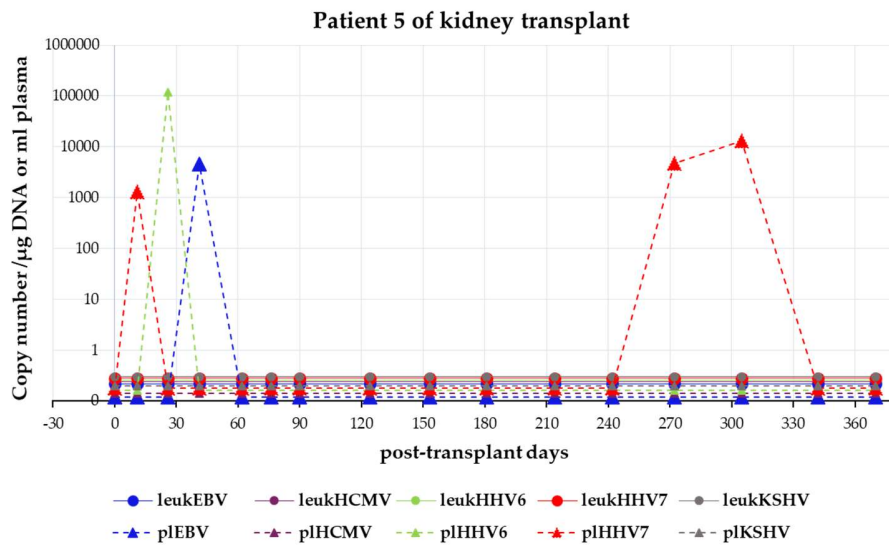
(b)



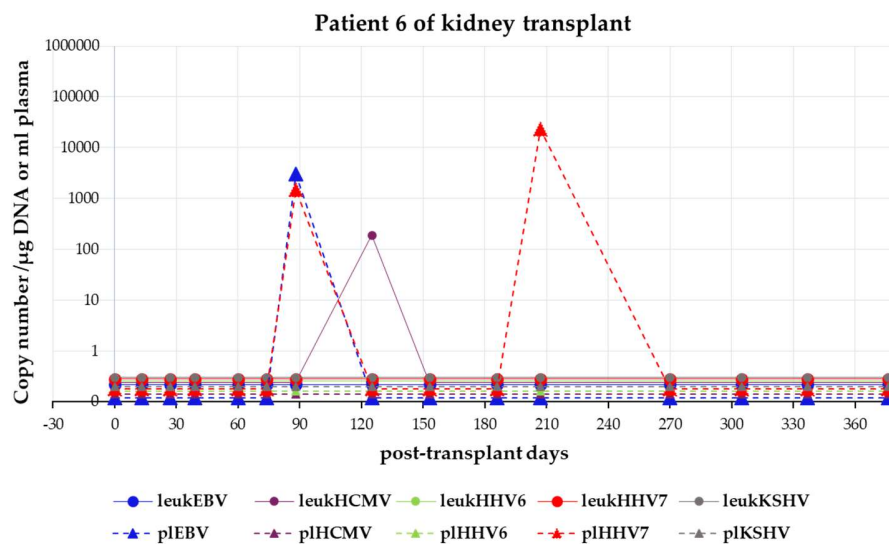
(c)



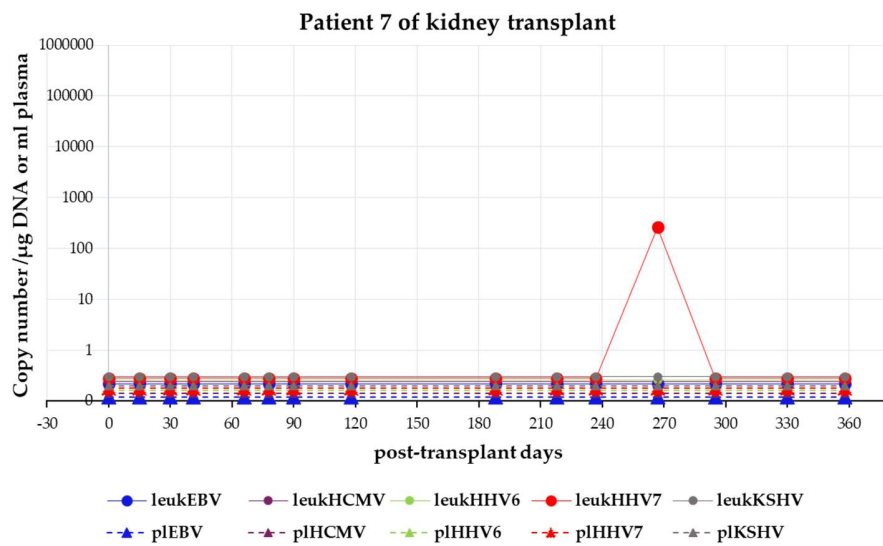
(d)



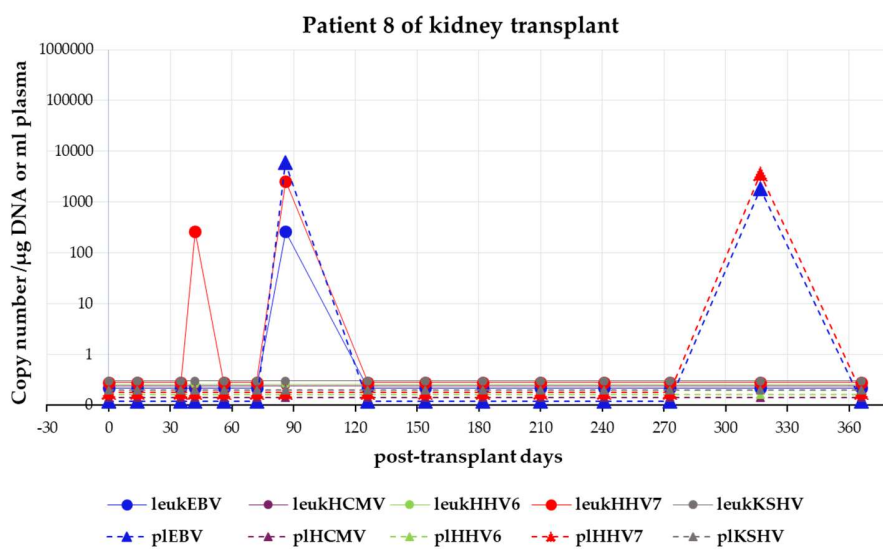
(e)



(f)

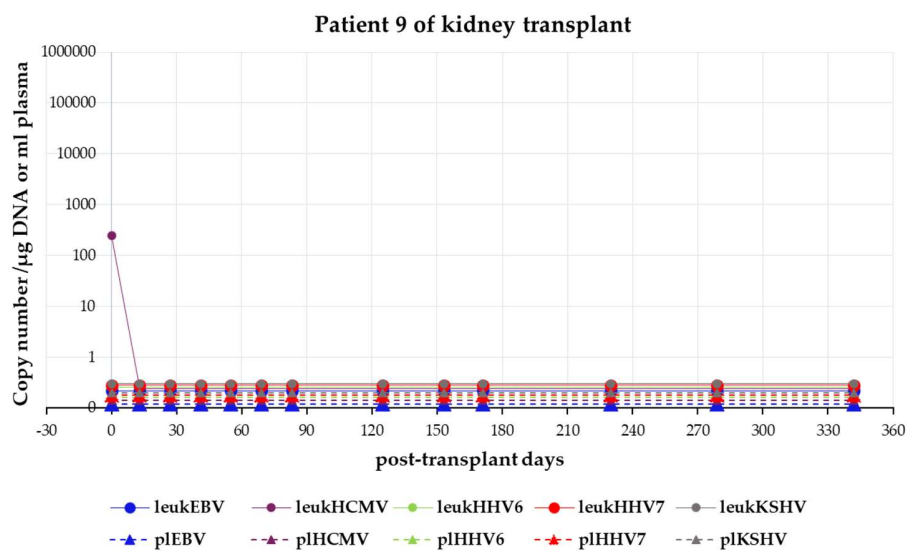


(g)

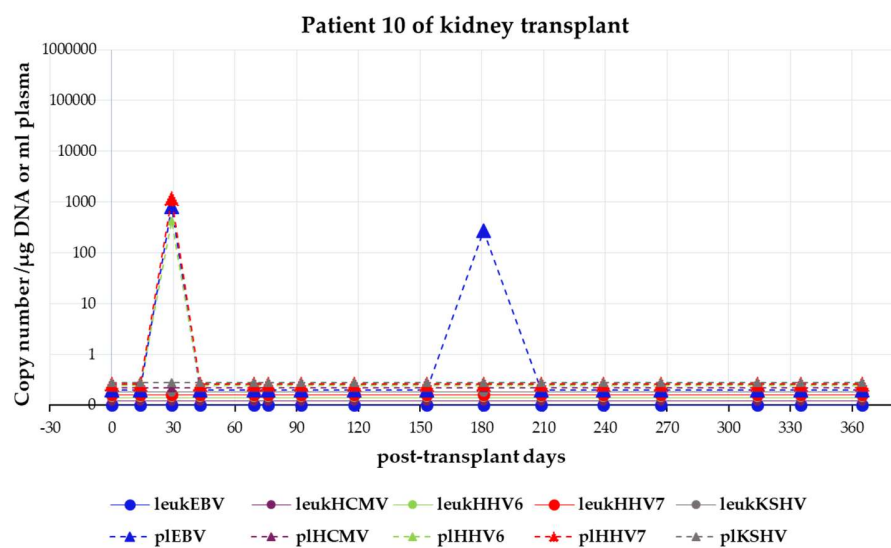


(h)

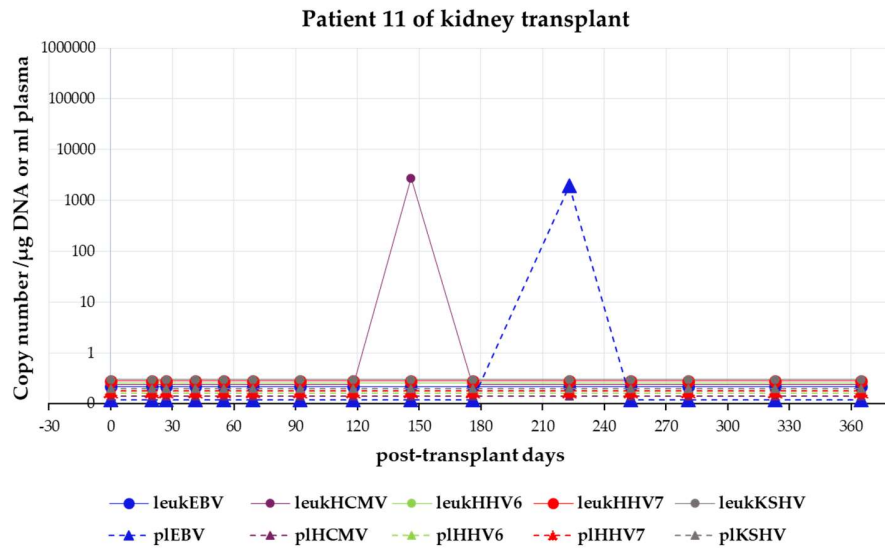




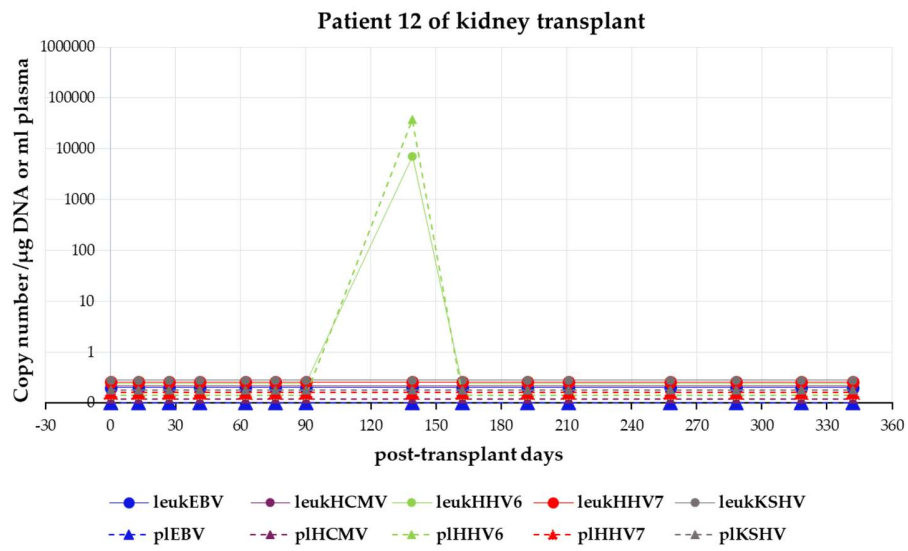
(i)



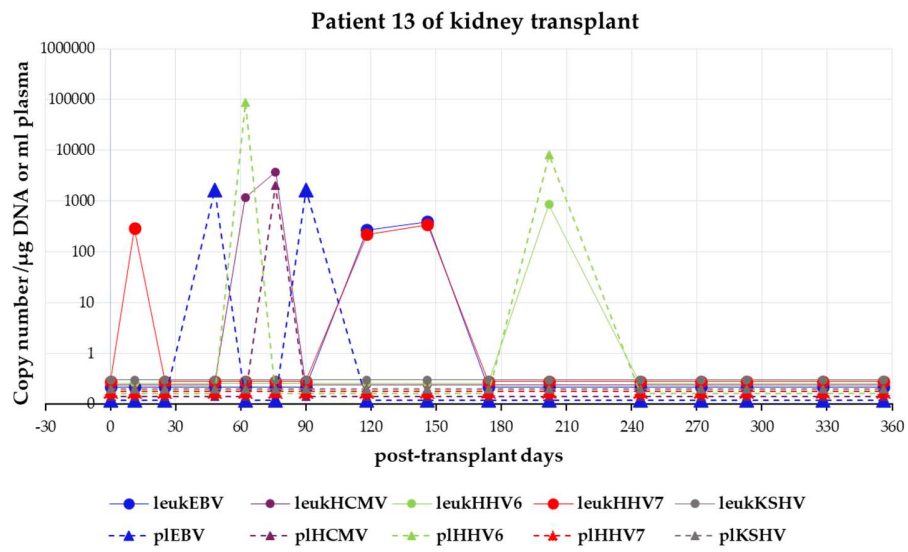
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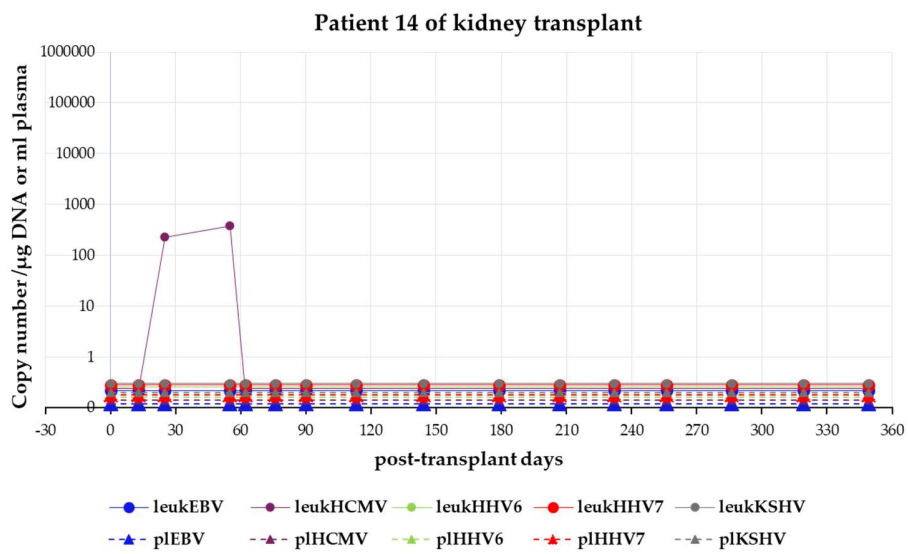
(k)



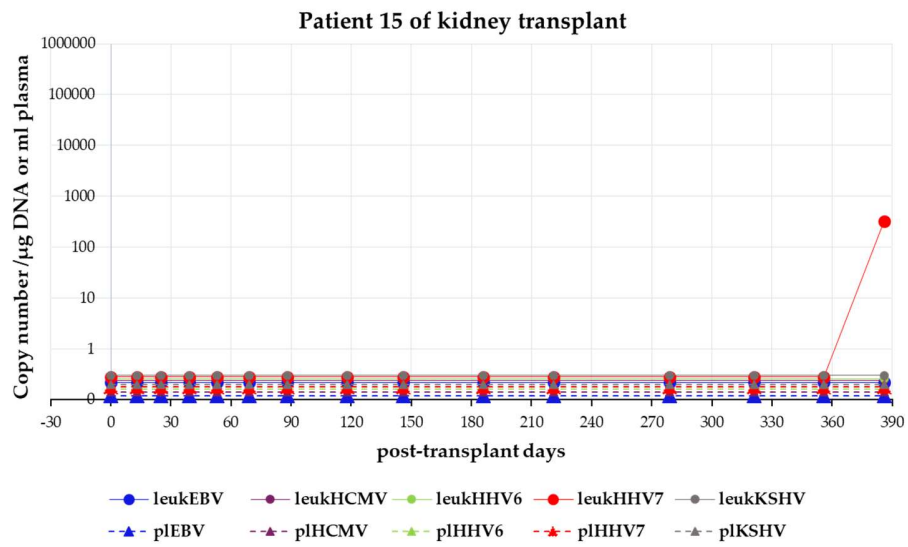
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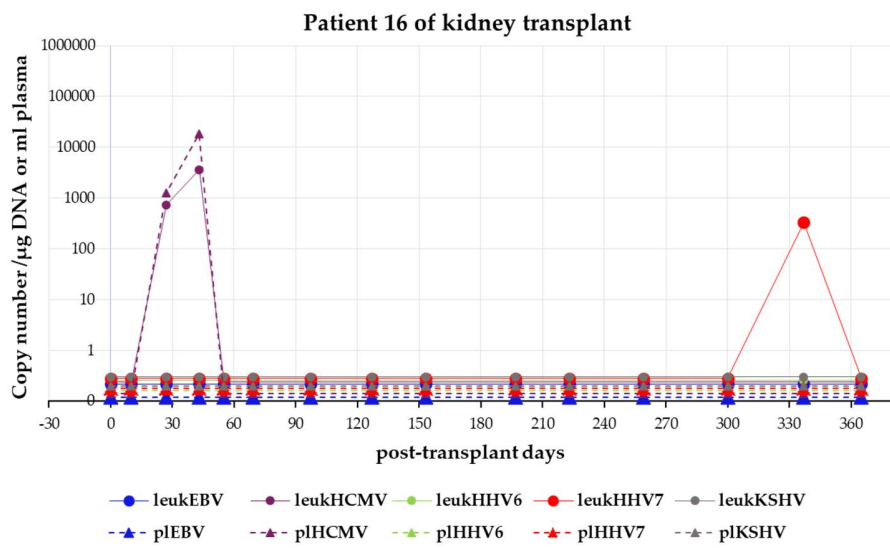
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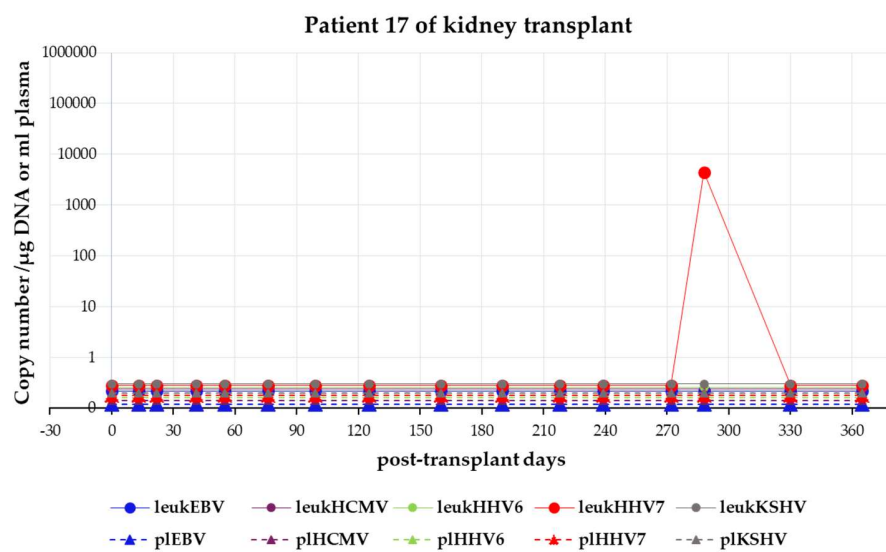
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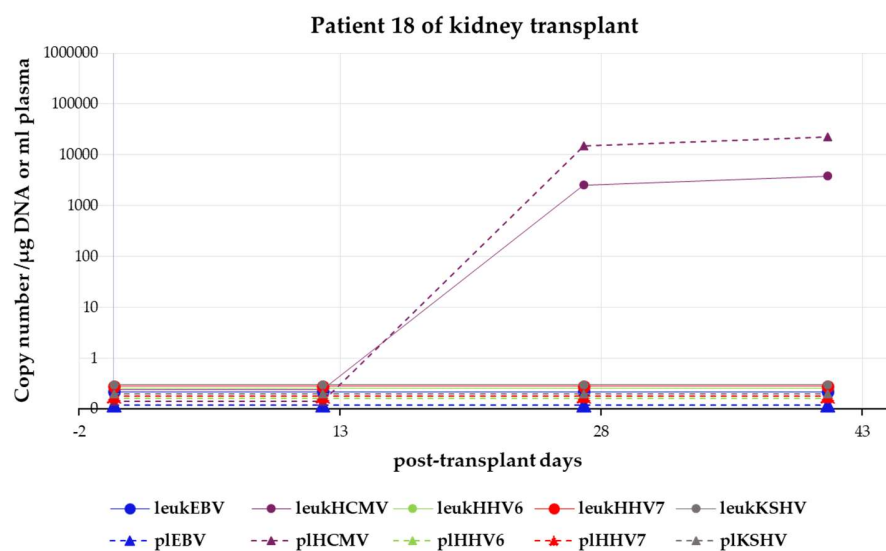
(o)



(p)

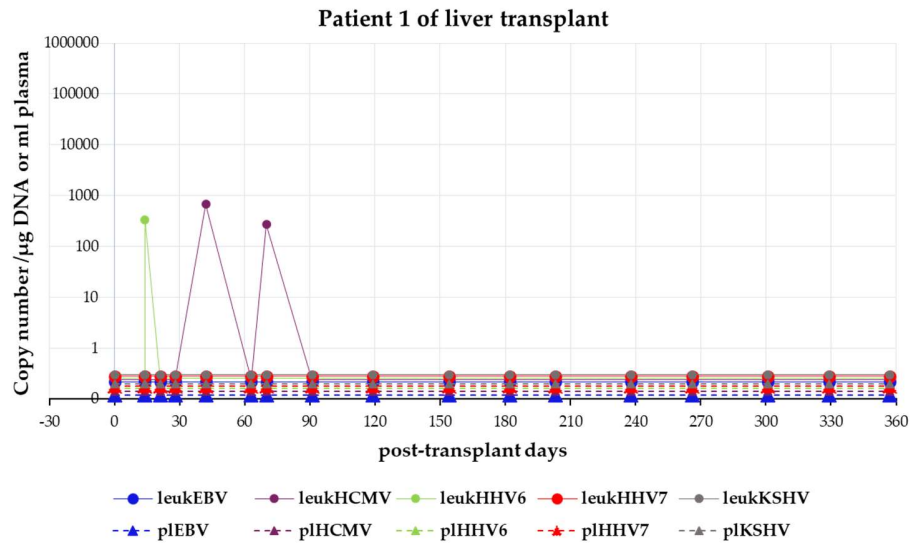


(q)

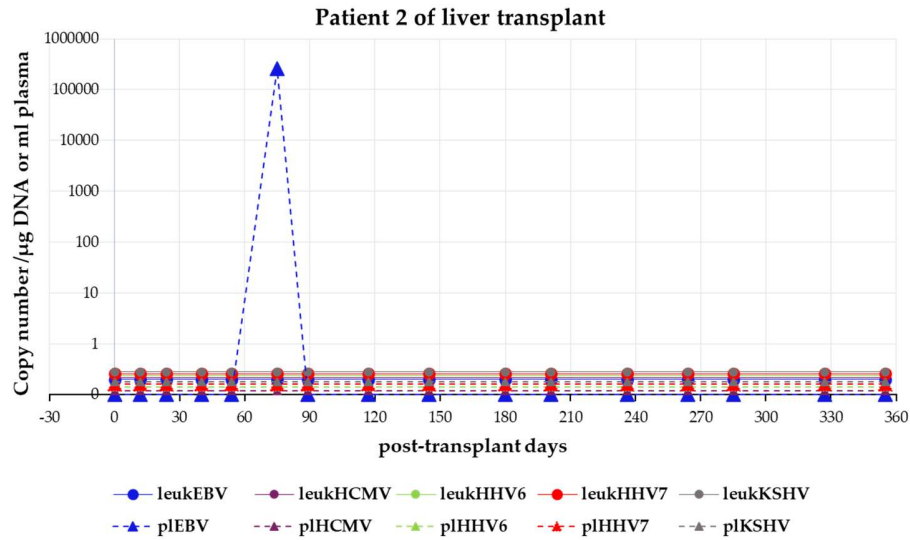


(r)

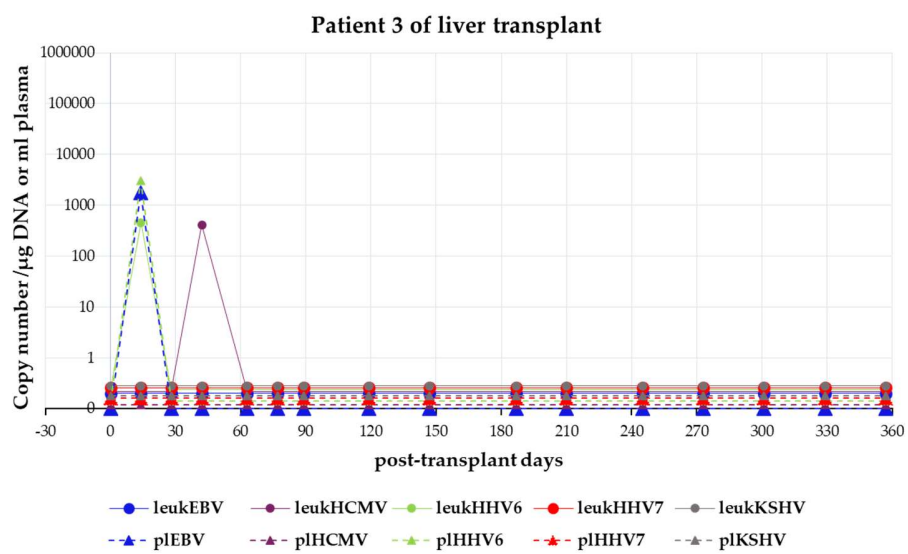
**Supplementary Figure S3.** Kinetics of infection of liver-transplanted pediatric patients. (a)-(j): Patients 1 to 10. The follow up period is shown in the X axis. Samples of day 0 were collected on the same day of transplant just before the surgery. Viral loads determined as the copy number/ $\mu\text{g}$  of DNA (leukocytes) or copy number/ml (plasma) are shown in the Y axis. Viruses are color-coded as indicated. Infections detected in leukocytes (leuk) are drawn as continuous lines while those detected in plasma (pl) are drawn as dotted lines. Horizontal lines below one viral copy indicate that virus was undetected.



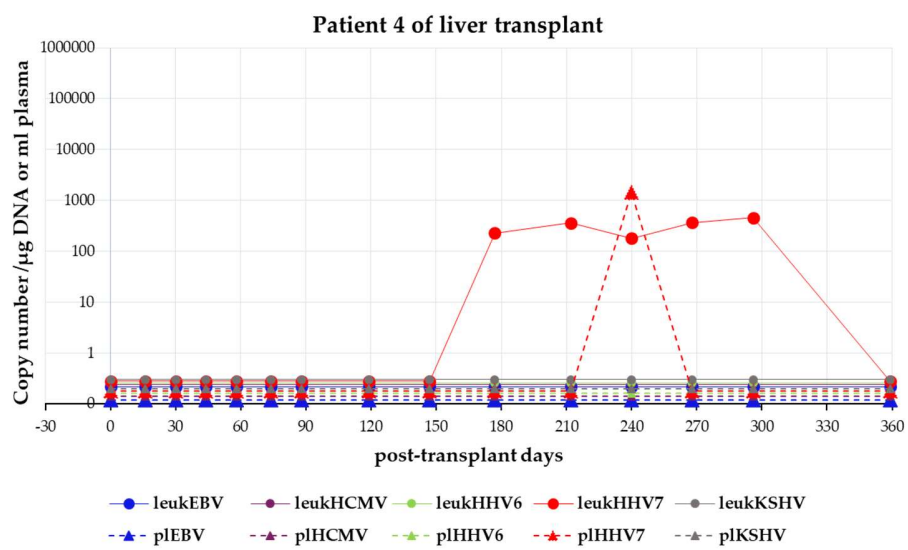
(a)



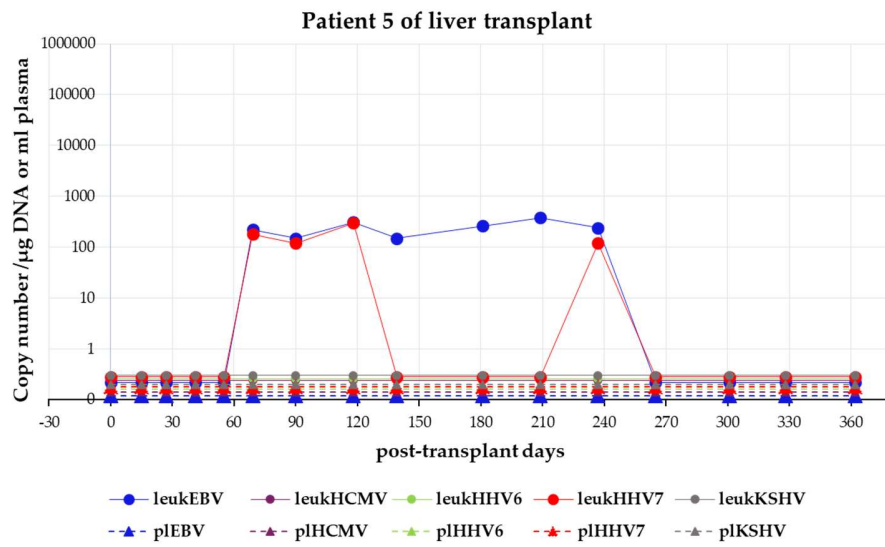
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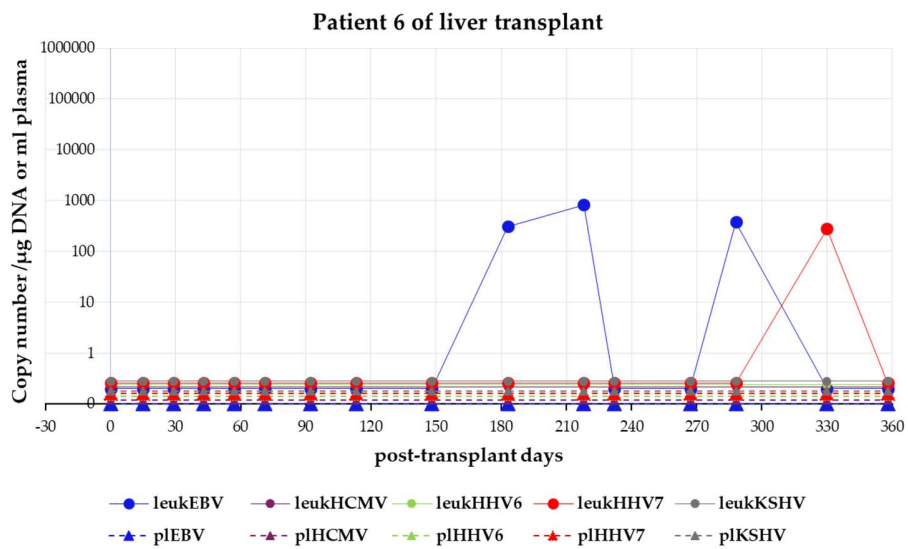
(c)



(d)

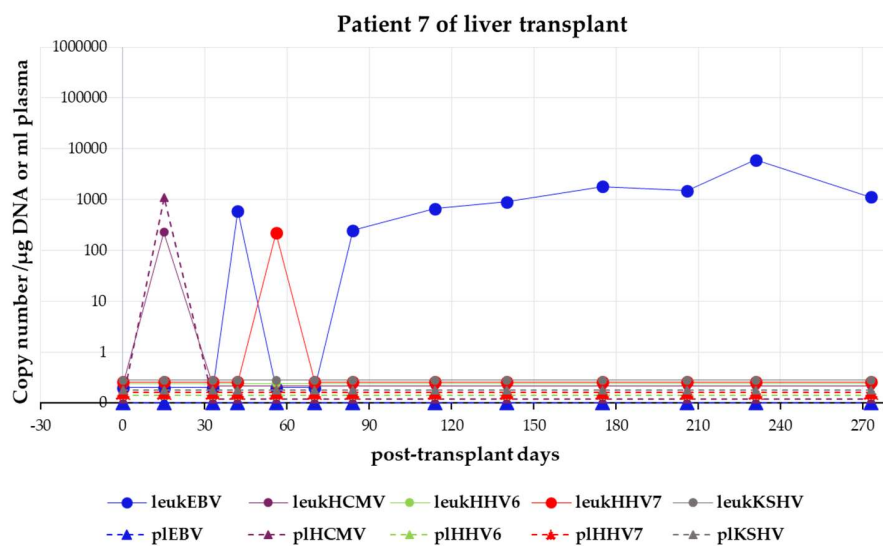


(e)

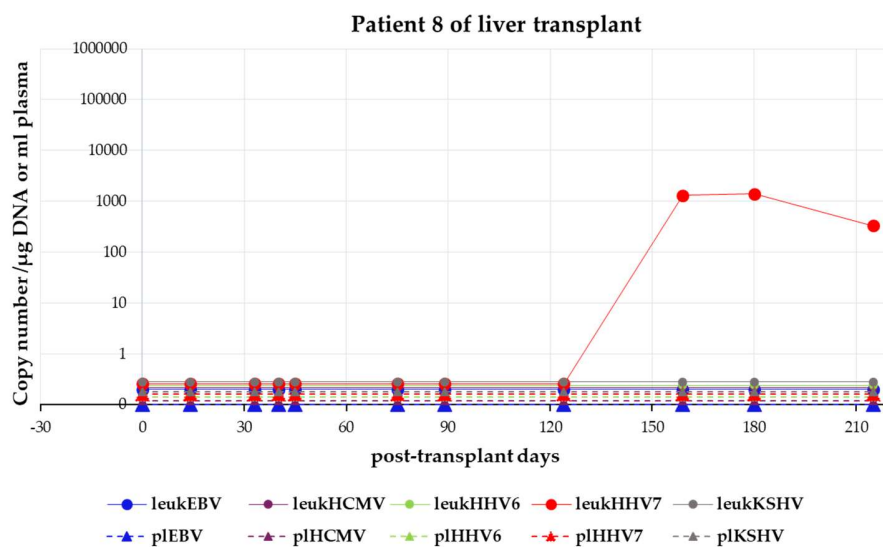


(f)

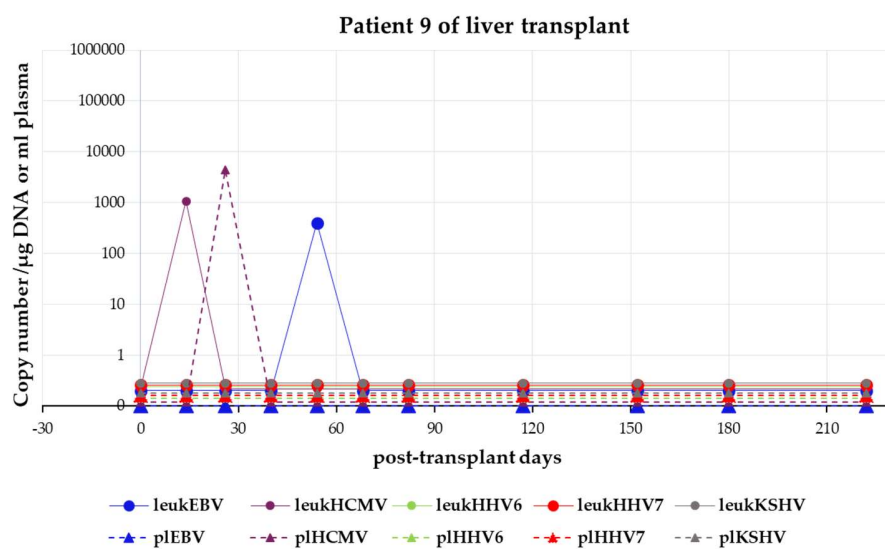




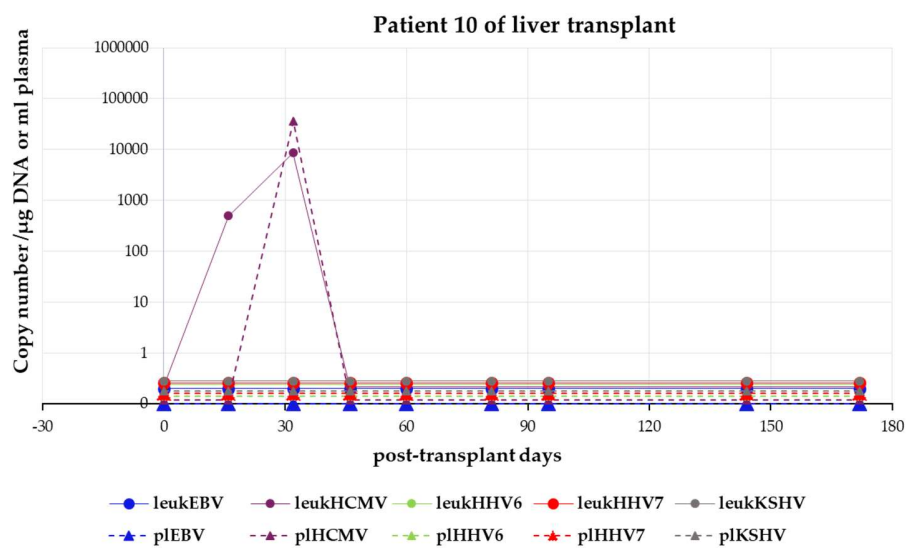
(g)



(h)



(i)



(j)

**Supplementary Table 1.** Analysis of formation of auto-dimers of the primers

and probes used for detection of EBV, HCMV and  $\beta$ -actin.

Virus-gene (primer/probe)	Maximum G Delta
	(kcal/mol)
EBV-BALF5 (F)	-5.12
EBV-BALF5 (R)	-4.64
EBV-BALF5 (P)	-9.89
HCMV- UL123 (F)	-13.19
HCMV- UL123 (R)	-5.7
HCMV- UL123 (P)	-9.89
Endogeneous human gene- $\beta$ -actin (F)	-4.67
Endogeneous human gene- $\beta$ -actin (R)	-7.05
Endogeneous human gene- $\beta$ -actin (P)	-16.03

F: Forward, R: Reverse, P: Probe.

**Supplementary Table 2.** Analysis of formation of hetero-dimers of the primers and probes used for detection of EBV, HCMV and  $\beta$ -actin.

Virus-gene (primer/probe)/ virus-gene (primer/probe)	Maximum G Delta (kcal/mol)
EBV-BALF5 (F)/EBV-BALF5 (R)	-8.26
EBV-BALF5 (F)/EBV-BALF5 (P)	-3.61
EBV-BALF5 (R)/EBV-BALF5 (P)	-3.89
HCMV- UL123 (F)/HCMV- UL123 (R)	-6.21
HCMV- UL123 (F)/HCMV- UL123 (P)	-6.21
HCMV- UL123 (R)/HCMV- UL123 (P)	-8.2
Endogeneous human gene- $\beta$ -actin (F)/Endogeneous human gene- $\beta$ -actin (R)	-6.62
Endogeneous human gene- $\beta$ -actin (F)/Endogeneous human gene- $\beta$ -actin (P)	-6.68
Endogeneous human gene- $\beta$ -actin (R)/Endogeneous human gene- $\beta$ -actin (P)	-5.09
EBV-BALF 5 (F)/HCMV- UL123 ( F)	-6.21
EBV-BALF 5 (F)/HCMV- UL123 ( R)	-8.19
EBV-BALF 5 (F)/HCMV- UL123 ( P)	-6.24
EBV-BALF 5 (R)/HCMV- UL123 ( F)	-5.02
EBV-BALF 5 (R)/HCMV- UL123 ( R)	-6.59
EBV-BALF 5 (R)/HCMV- UL123 ( P)	-4.67
EBV-BALF 5 (P)/HCMV- UL123 ( F)	-6.21
EBV-BALF 5 (P)/HCMV- UL123 ( R)	-4.26
EBV-BALF 5 (P)/HCMV- UL123 ( P)	-9.89
Endogeneous human gene- $\beta$ -actin(F)/EBV-BALF5 (F)	-7.81
Endogeneous human gene- $\beta$ -actin (F)/EBV-BALF5 (R)	-9.83
Endogeneous human gene- $\beta$ -actin (F)/EBV-BALF5 (P)	-6.78
Endogeneous human gene- $\beta$ -actin (R)/EBV-BALF5 (F)	-6.59
Endogeneous human gene- $\beta$ -actin (R)/EBV-BALF5 (R)	-10.02
Endogeneous human gene- $\beta$ -actin (R)/EBV-BALF5 (P)	-6.53
Endogeneous human gene- $\beta$ -actin (P)/EBV-BALF5 (F)	-7.81
Endogeneous human gene- $\beta$ -actin (P)/EBV-BALF5 (R)	-6.68
Endogeneous human gene- $\beta$ -actin (P)/EBV-BALF5 (P)	-6.44
Endogeneous human gene- $\beta$ -actin (F)/HCMV- UL123 (F)	-6.62
Endogeneous human gene- $\beta$ -actin (F)/HCMV- UL123 (R)	-10.37
Endogeneous human gene- $\beta$ -actin (F)/HCMV- UL123 (P)	-11.36
Endogeneous human gene- $\beta$ -actin (R)/HCMV- UL123 (F)	-5.09
Endogeneous human gene- $\beta$ -actin (R)/HCMV- UL123 (R)	-3.42
Endogeneous human gene- $\beta$ -actin (R)/HCMV- UL123 (P)	-6.95
Endogeneous human gene- $\beta$ -actin (P)/HCMV- UL123 (F)	-6.21
Endogeneous human gene- $\beta$ -actin (P)/HCMV- UL123 (R)	-7.81
Endogeneous human gene- $\beta$ -actin (P)/HCMV- UL123 (P)	-7.81

F: Forward, R: Reverse, P: Probe.

**Supplementary Table 3.** Analysis of formation of auto-dimers of the primers and probes used for detection of HHV6, HHV7 and KSHV.

Virus-gene (primer/probe)	Maximum G Delta (kcal/mol)
HHV6-U31 (F)	-3.61
HHV6-U31 (R)	-3.61
HHV6-U31 (P)	-4.89
HHV7-U57 (F)	-4.87
HHV7-U57 (R)	-8.74
HHV7-U57 (P)	-13.19
KSHV-LANA (F)	-5.99
KSHV-LANA (R)	-3.61
KSHV-LANA (P)	-3.61

*F: Forward, R: Reverse, P: Probe.*

**Supplementary Table 4.** Analysis of formation of hetero-dimers of the primers and probes used for detection of HHV6, HHV7 and KSHV.

Virus-gene (primer/probe)/ virus-gene (primer/probe)	Maximum G Delta (kcal/mol)
HHV6-U31 (F)/HHV6-U31 (R)	-3.61
HHV6-U31 (F)/HHV6-U31 (P)	-3.55
HHV6-U31 (R)/HHV6-U31 (P)	-9.76
HHV7-U57 (F)/HHV7-U57 (R)	-4.64
HHV7-U57 (F)/HHV7-U57 (P)	-5.24
HHV7-U57 (R)/HHV7-U57 (P)	-5.24
KSHV-LANA (F)/KSHV-LANA (R)	-6.97
KSHV-LANA (F)/KSHV-LANA (P)	-8.09
KSHV-LANA (R)/KSHV-LANA (P)	-8.09
HHV6-U31 (F)/HHV7-U57 (F)	-4.52
HHV6-U31 (F)/HHV7-U57 (R)	-5.19
HHV6-U31 (F)/HHV7-U57 (P)	-5.19
HHV6-U31 (R)/HHV7-U57 (F)	-3.61
HHV6-U31 (R)/HHV7-U57 (R)	-5.12
HHV6-U31 (R)/HHV7-U57 (P)	-8.16
HHV6-U31 (P)/HHV7-U57 (F)	-6.82
HHV6-U31 (P)/HHV7-U57 (R)	-6.69
HHV6-U31 (P)/HHV7-U57 (P)	-8.16
HHV6-U31 (F)/KSHV-LANA (F)	-6.14
HHV6-U31 (F)/KSHV-LANA (R)	-4.65
HHV6-U31 (F)/KSHV-LANA (P)	-7.48
HHV6-U31 (R)/KSHV-LANA (F)	-6.53
HHV6-U31 (R)/KSHV-LANA (R)	-6.53
HHV6-U31 (R)/KSHV-LANA (P)	-3.61
HHV6-U31 (P)/KSHV-LANA (F)	-5.02
HHV6-U31 (P)/KSHV-LANA (R)	-1.95
HHV6-U31 (P)/KSHV-LANA (P)	-6.5
HHV7-U57 (F)/KSHV-LANA (F)	-6.62
HHV7-U57 (F)/KSHV-LANA (R)	-8.19
HHV7-U57 (F)/KSHV-LANA (P)	-8.29
HHV7-U57 (R)/KSHV-LANA (F)	-6.24
HHV7-U57 (R)/KSHV-LANA (R)	-3.89
HHV7-U57 (R)/KSHV-LANA (P)	-6.68
HHV7-U57 (P)/KSHV-LANA (F)	-5.02
HHV7-U57 (P)/KSHV-LANA (R)	-6.97
HHV7-U57 (P)/KSHV-LANA (P)	-6.5

*F: Forward, R: Reverse, P: Probe.*