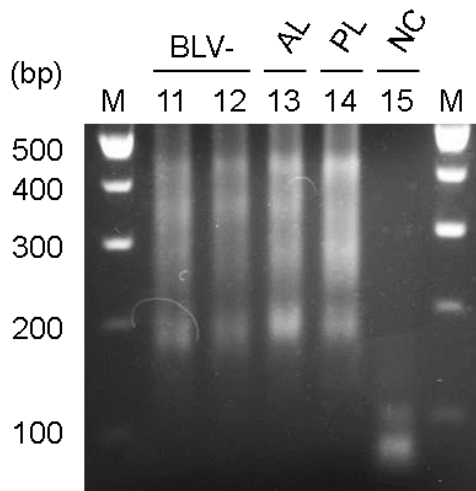
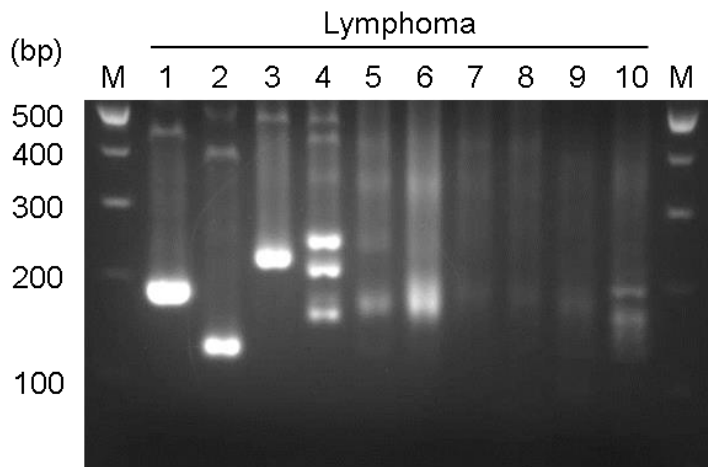


1

2 **FIG S1** Flow cytometry analysis to assess cell-marker expression and population
 3 diversity. Cell-marker expression of peripheral blood mononuclear cells from bovine
 4 leukemia virus-uninfected cattle or cattle with lymphoma was analyzed by flow
 5 cytometry. The results were evaluated as percentages of positive cells and numbers of
 6 different cell populations.

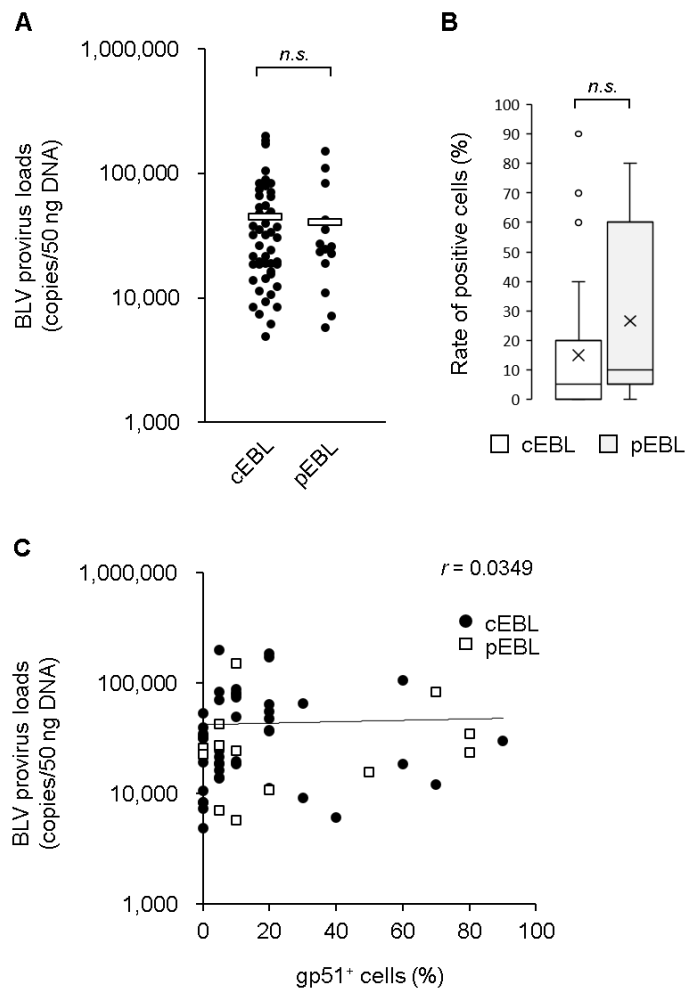
7



8

9 **FIG S2** PCR-based IgH analysis to confirm B-cell clonality. Amplification of the gene
 10 encoding the IgH region of interest was performed using DNA extracted from peripheral
 11 blood mononuclear cells (PBMCs) and tissue samples of cattle with or without
 12 lymphoma. Representative PCR products run on an ethidium bromide-stained 3% Tris-
 13 borate-EDTA agarose gel. Lane: 1, PBMCs; 2, solid tumor in heart; 3, superficial
 14 cervical lymph node; 4, PBMCs; 5, solid tumor in heart; 6–8, PBMCs; 9, solid mass in
 15 rib bone; 10, solid tumor in thymus; 11–14, PBMCs; 15, double-distilled water; M, 100-
 16 bp DNA ladder; AL, aleukemic; PL, persistent lymphocytosis; NC, negative control.

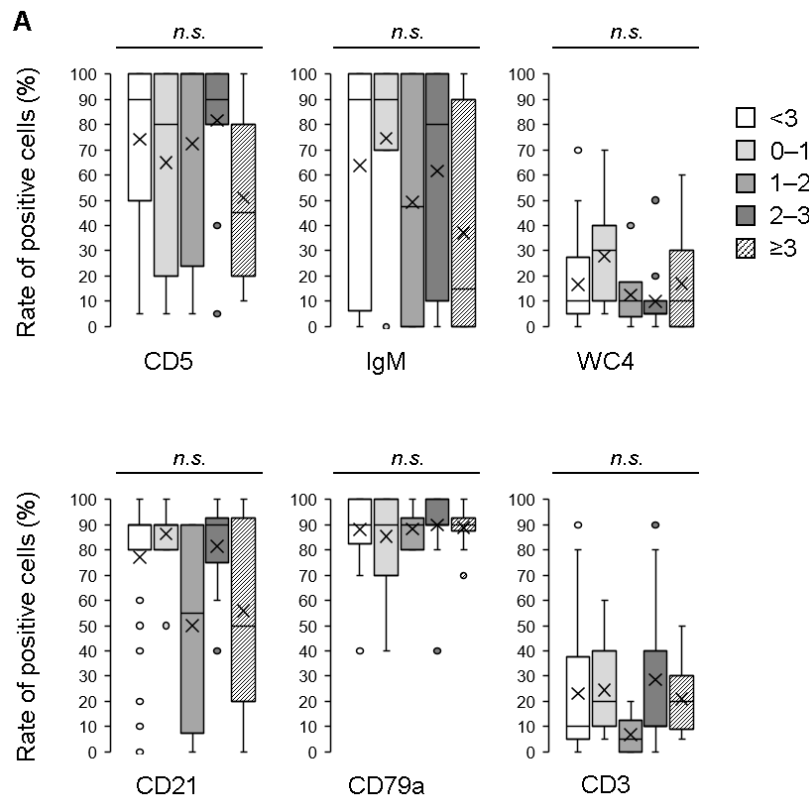
17



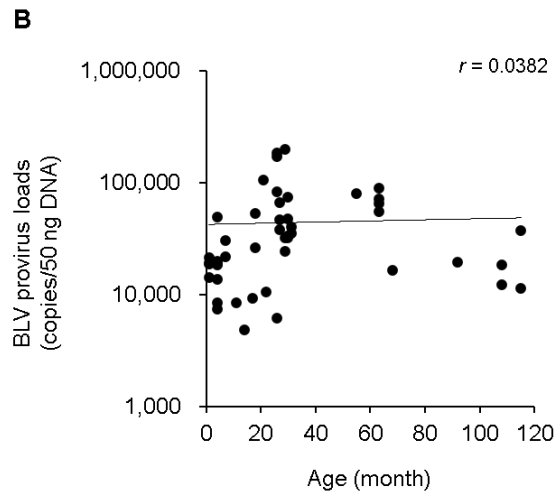
18

19 **FIG S3** Difference in viral replication between two B-cell lymphomas. (A) Bovine
 20 leukemia virus (BLV) provirus loads were compared between the samples from classic
 21 enzootic bovine leukosis (cEBL; $n = 42$), polyclonal EBL (pEBL; $n = 15$). $P = 0.7105$,
 22 Wilcoxon rank sum test. (B) The expression levels of gp51 in cEBL ($n = 41$) and pEBL
 23 ($n = 13$) are shown as box-and-whisker plots. Each box indicates median, lower and
 24 upper quartiles, and whiskers indicate lower and upper extremes. The x-mark indicates
 25 the average, and dots represent outliers that are much greater than normal or much less
 26 than normal. $P = 0.2236$, Wilcoxon rank sum test. (C) Correlation between the BLV
 27 provirus loads and the positive percentages of gp51 expression. $R = 0.0349$.

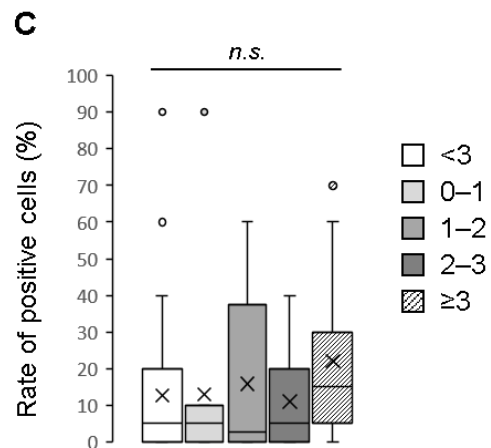
28



29



30



31 **FIG S4** Difference in cell-marker expression and viral replication during early onset of
 32 classic enzootic bovine leukosis (cEBL). (A) The expression levels of six cell markers
 33 in the samples from different ages of cEBL cattle are shown as box-and-whisker plots.
 34 Each box indicates median, lower and upper quartiles, and whiskers indicate lower and
 35 upper extremes. The x-mark indicates the average, and dots represent outliers that are

36 much greater than normal or much less than normal. (B) Correlation between the bovine
37 leukemia virus provirus loads and the age in months of cEBL cattle, $R = 0.0382$. (C)
38 The expression levels of gp51 in the samples from different ages of cEBL cattle are
39 shown as box-and-whisker plots. Numbers indicate age in years of original cattle in
40 each sample. <3 , $n = 32$ (0–1, $n = 11$; 1–2, $n = 6$; 2–3, $n = 15$); ≥ 3 , $n = 10$.

41