**Supplementary Figure S4. TAp73 significance in HBZ pathogenesis and its effect on cellular metabolism.**
(A) Sequencing results of Trp73-isoform specific murine knockout models. Each 1bp frameshift resulted in a truncating mutation.
(B) Transcripts per million (TPM) of G6odx (left) and Pfkl (right) in wild-type (WT) or HBZ-Tg mouse CD4+ T cells.
(C) A heatmap of the top 50 differentially altered metabolites among the knockout murine models.

**Supplementary Figure S4. TAp73 significance in HBZ pathogenesis and its effect on cellular metabolism. (Continued)**

(D) Glucose-6-phosphate levels in CD4$^+$ T cells of the murine models (n=3). Calculated ion intensities (AUC) are shown.

(E-G) Knockdown of the human TP73 gene. Schematic diagram showing three kinds of shRNAs for the human TP73 gene (E). mRNA expressions of TAp73 (left) and DNp73 (right) by RT-qPCR in TL-Om1 cells 48 hours after the knockdown (F) (n=3). Immunoblots of TAp73, DNp73 and Tubulin in HEK293T cells with ectopic expression of shRNA (G).

(H) EZH2 transcripts in ATL cells 48 hours after the knockdown (n=3).

(I) A schematic diagram outlining the GFP competition assay. After introducing a construct encoding GFP and shRNA, the percentage of GFP positive cells varies depending on the effect of knockdown on cell survival. This figure was created with BioRender.com.

(J) TAp73 mRNA expression measured by RT-qPCR in TL-Om1 cells 48 hours after shTAp73-2 knockdown (n=3).

(K) GFP competition assay of TL-Om1 cells with shTAp73-2 knockdown (n=3). Lentiviral vectors for knockdown encoded enhanced GFP (EGFP). The date of lentiviral transduction was counted as day 1.

(L and M) Intracellular pH assessed by pHrodo Red AM in ATL55T+ cells on day 8 after transfection. Fluorescence microscopy photographs with EGFP (L) and a flow cytometry histogram (M).

(N) Extracellular lactate from ATL cells on day 8 after transfection (n=3).

(O) Extracellular acidification rate (ECAR) assessed by metabolic flux assay of CD4$^+$ T cells from WT or TAp73 -/- mice (n=3). Glucose, oligomycin and 2-deoxyglucose (2-DG) were injected as the indicated time points.

Results are plotted as mean $\pm$ SD, using one-way ANOVA with post-hoc Tukey (D), Dunnet (F) or Student's t test (H, J, K, N and O). *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$; ns, not significant.