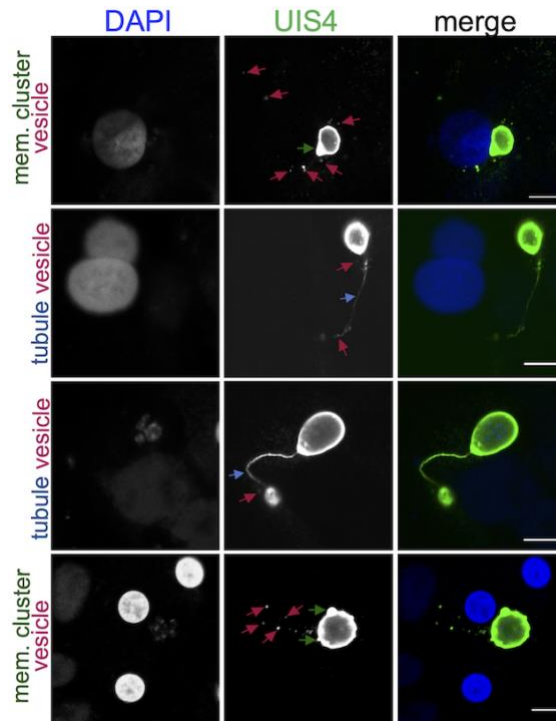
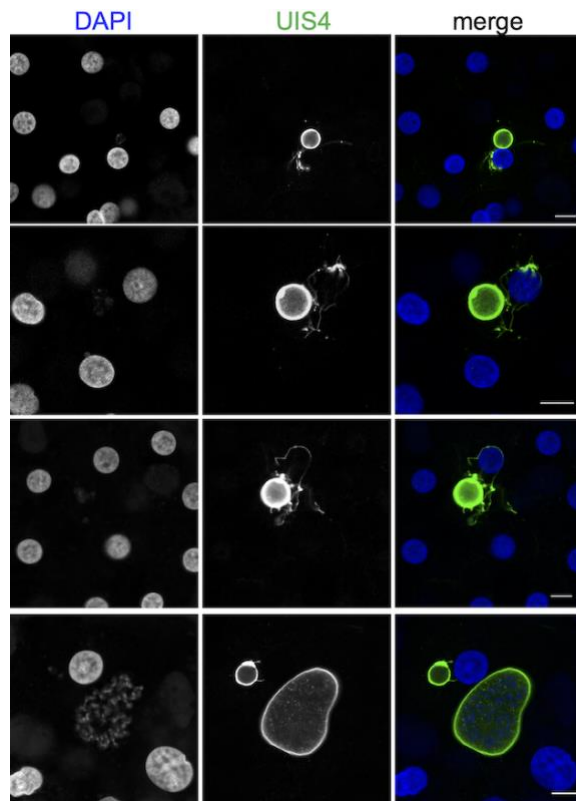


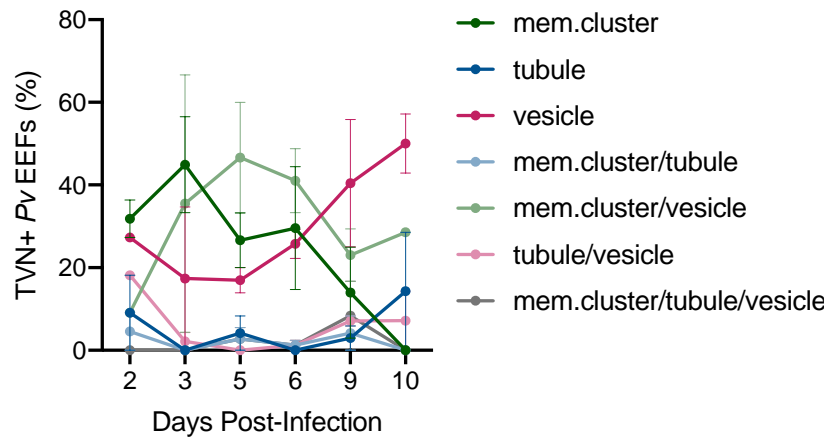
Supplemental Figure 1. *P. vivax* variation in size 8 dpi. (A) Representative confocal images of *P. vivax* hypnozoites in PHH at 8 dpi, defined by EEF area <math>< 60 \mu\text{m}^2</math>. (B) Representative confocal images of *P. vivax* schizonts in PHH at 8 dpi, defined by EEF area >math>> 200 \mu\text{m}^2</math>. (A-B) Cells stained with DAPI (blue) and anti-*PvUIS4* (green). Scale bar is 10 μm .



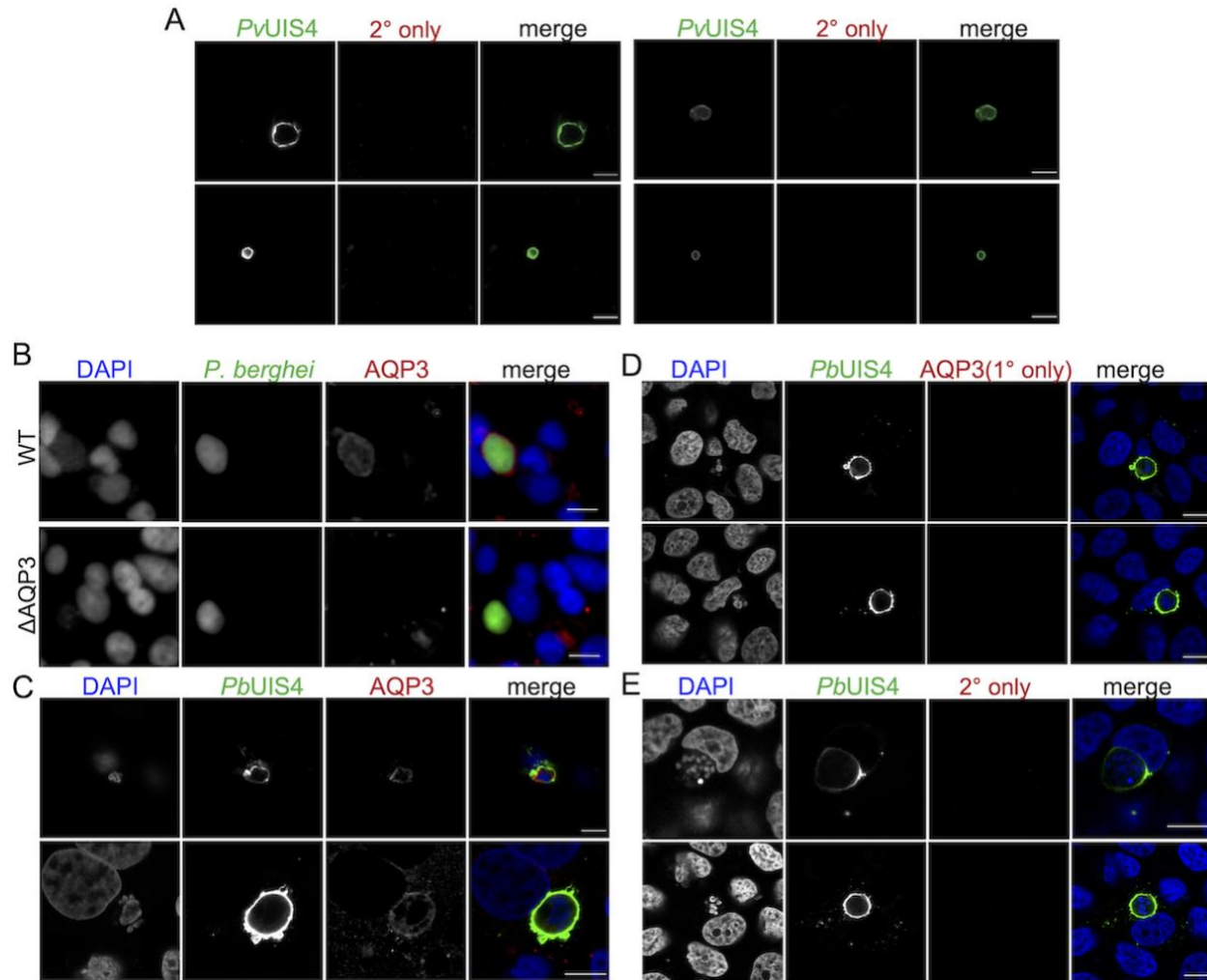
Supplemental Figure 2. *P. vivax* TVN+ EEFs contain multiple features. Confocal images of *P. vivax* EEFs with TVN features in PHH at 8 dpi. Cells stained with DAPI (blue) and anti-*PvUIS4* (green). Examples of TVN features observed are indicated as extended membrane cluster (mem. Cluster, green arrow), tubule (blue arrow), and vesicle (magenta arrow). Scale bar is 10 μ m.



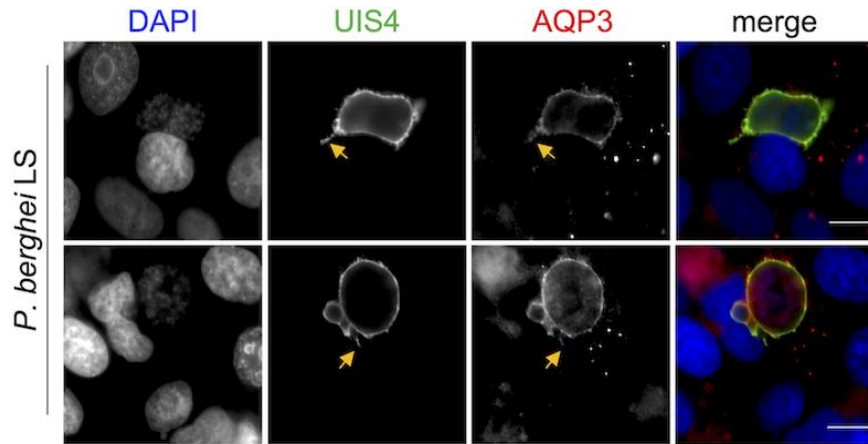
Supplemental Figure 3. *P. vivax* TVN features 8 dpi. (A) Representative confocal images depicting *P. vivax* parasites in PHH at 8 dpi with tubules associating with the host nucleus. Cells stained with DAPI (blue) and anti-*Pv*UIS4 (green). Scale bar is 10 μ m.



Supplemental Figure 4. *P. vivax* TVN displays varying features throughout liver stage infection. EEFs displaying one or more TVN feature throughout *P. vivax* infection of PHH (2–10 dpi). Data reported as mean \pm SEM (>30 parasites assessed, n=2 biological replicates).



Supplemental Figure 5. Antibody controls for AQP3 in *P. vivax* and *P. berghei*. (A) Representative confocal images of *P. vivax* EEFs stained with *PvUIS4* (green) and donkey anti-rabbit Alexa Fluor® 568-conjugated secondary antibody (red) without prior anti-AQP3 primary staining. (B) Representative widefield microscopy images of *P. berghei* liver stage infections in wild type and Δ AQP3 HuH7 cells. Cells stained with DAPI (blue), anti-*PbUIS4* (green), and anti-*HsAQP3* (red). Scale bar is 10 μ m. (C) Representative confocal images of *P. berghei* EEFs stained with DAPI (blue), *PbUIS4* (green), and AQP3 primary & secondary antibody (red). (D) Representative confocal images of *P. berghei* EEFs stained with DAPI (blue), *PbUIS4* (green) and AQP3 primary antibody (red) without secondary antibody staining. (E) Representative confocal images of *P. berghei* EEFs stained with DAPI (blue), *PbUIS4* (green) and donkey anti-rabbit Alexa Fluor® 568-conjugated secondary antibody (red) without prior anti-AQP3 primary staining. (A-E) Scale bar is 10 μ m.



Supplemental Figure 6. AQP3 localizes to the TVN during *P. berghei* liver stage infection. Representative widefield microscopy images of *P. berghei* liver stage infections exhibiting TVN features at 2 dpi. Cells stained with DAPI (blue), anti-*Pb*UIS4 (green), and anti-*Hs*AQP3 (red). *P. berghei*-infected HuH7 cells show localization of AQP3 to TVN features (yellow arrows). Scale bar is 10 μ m.