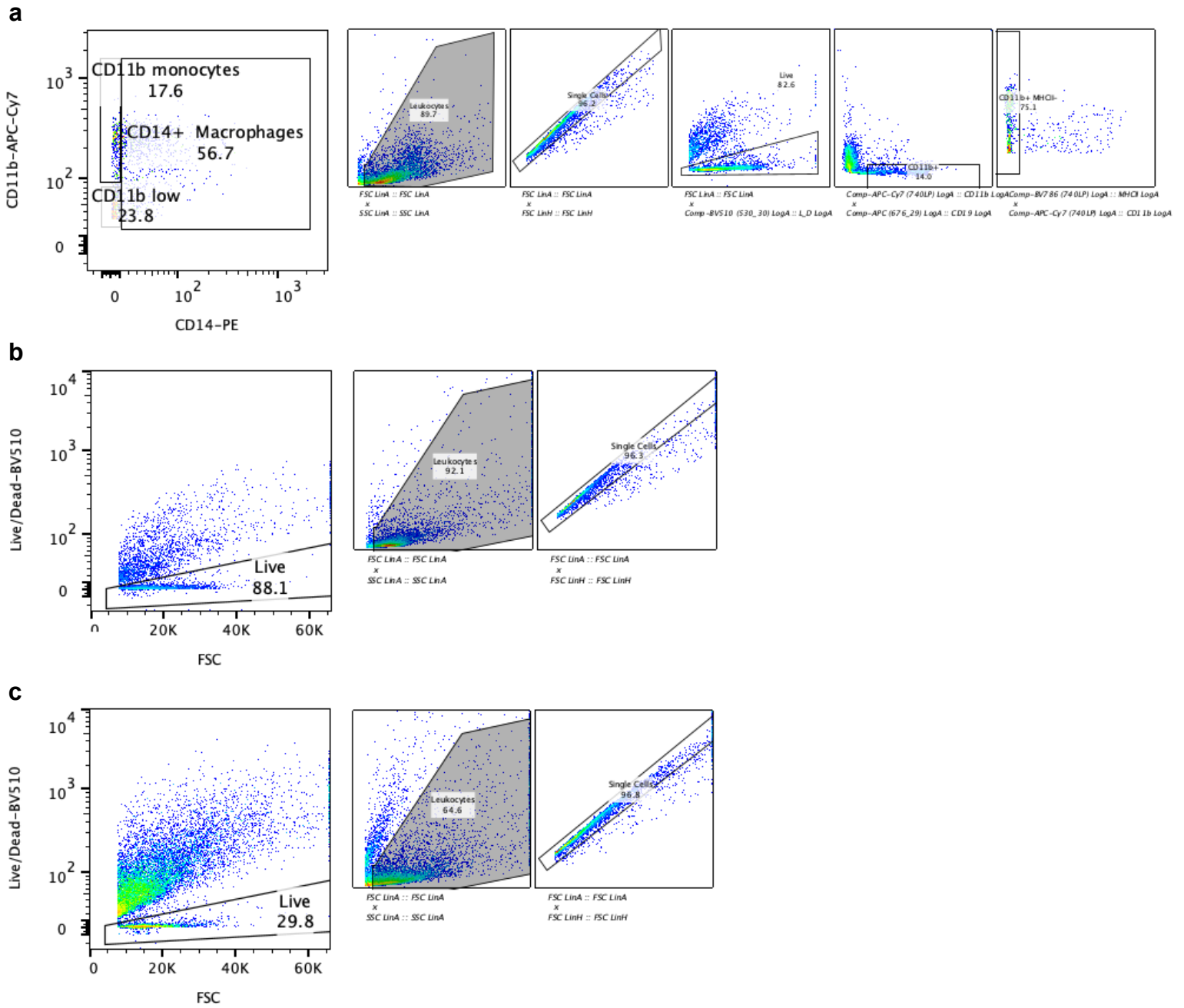


Supplementary Fig. 1 | Histologically-resolvable and Marburg virus disease (MVD)-like viral tissue/cell tropism in IM bats.

a, H&E staining; $n=5$ bats. Bar (scale): $20\mu\text{m}$. **b**, MARV ISH showing lack of MARV replication foci. Bar: $200\mu\text{m}$. **c**, Dual MARV ISH (red) and Iba1 IHC (brown). MARV RNA in tissue macrophages (MΦ, arrow) and adrenal cortical cells. Bar: $10\mu\text{m}$. **d**, MARV ISH signal in inflammatory foci of high-replicating (high-rep) DM12 bats. Bar: $200\mu\text{m}$. **e**, MARV ISH signal in adrenal cortical cells. Bar: $10\mu\text{m}$. **f**, H&E. CPE of MARV in adrenal cortical cells include cytoplasmic vacuolation, occasional necrosis (arrow) and rare eosinophilic to amphophilic cytoplasmic inclusions (arrow, inset); $n=3$ bats. Bar: $10\mu\text{m}$. **g**, MARV ISH. Bar: $80\mu\text{m}$. **h**, MARV ISH. G: granulosa cells, T: theca cells. Bar: $20\mu\text{m}$. **i**, MARV ISH. Bar: $100\mu\text{m}$. **j**, MARV ISH. Bar: $10\mu\text{m}$. **k**, H&E; $n=5$ bats. Bar: $20\mu\text{m}$. **l**, Dual ISH-IHC. MARV RNA in Iba1⁺ glomerular cells. Bar: $10\mu\text{m}$. **m**, H&E. CPE of MARV in renal cortical epithelial cells include cytoplasmic vacuolation and occasional pyknosis (arrow); $n=3$ bats. Bar: $10\mu\text{m}$. **n**, MARV ISH. Bar: $10\mu\text{m}$. **o**, Dual ISH-IHC. Scattered MARV RNA in bladder wall (arrows). Bar: $200\mu\text{m}$. **p**, Dual ISH-IHC. Intense MARV RNA within Iba1⁺ tissue MΦ. Bar: $20\mu\text{m}$. **q**, MARV ISH. Bar: $80\mu\text{m}$. **r**, Intense MARV ISH signal within smooth muscle cells. Bar: $20\mu\text{m}$. **s**, MARV ISH. Bar: $200\mu\text{m}$. **t-u**, Dual ISH-IHC. **t**, MARV RNA within Iba1⁺ tissue MΦ, mesothelial cells and focally within smooth muscle cells (arrow). **u**, Intense MARV signal within Iba1⁺ lamina propria MΦ. Bars: $20\mu\text{m}$. **v**, H&E. Intraepithelial and lamina propria hemorrhage; $n=1$ bat. Bar: $10\mu\text{m}$. **w**, MARV ISH. Bar: $20\mu\text{m}$. **x**, H&E; $n=5$ bats. Bar: $20\mu\text{m}$. **y**, MARV ISH. Bar: $80\mu\text{m}$. **z**, H&E. Focus of epithelial cell necrosis (arrow); $n=1$ bat. Bar: $20\mu\text{m}$. **aa**, MARV ISH. Bar: $80\mu\text{m}$. Inset: MARV RNA in epithelial cells (bar: $10\mu\text{m}$). Hematoxylin counterstain (all ISH/dual assays).



Supplementary Fig. 2 | Flow cytometric analysis and gating ancestry of immune cell populations.

a, Splenocytes from a representative bat were live/dead stained, then gated for leukocytes, single cells, live cells, then specific cell types as indicated. Viable cell proportions were used to calculate the total cells per tissue per animal. **b-c**, Axillary lymph node (ALN) cells from a representative Dex bat (**b**) or Neg bat (**c**) with gating ancestry.

Target mRNA	GenBank Entry Weblink	RNAscope Catalog ID	Probe Design Notes
<i>CD14</i>	https://www.ncbi.nlm.nih.gov/nuccore/XM_016166396.1	861218	20ZZ probe named Rae-CD14 targeting 164-1146 of XM_016166396.1
<i>CD79a</i>	https://www.ncbi.nlm.nih.gov/nuccore/XM_016129923.1	861228	20ZZ probe named Rae-CD79A targeting 2-957 of XM_016129923.1
<i>CD3e</i>	https://www.ncbi.nlm.nih.gov/nuccore/XM_016155454.1	861248	20ZZ probe named Rae-CD3E targeting 109-1067 of XM_016155454.1
<i>TNF</i>	https://www.ncbi.nlm.nih.gov/nuccore/XM_016121699.1	878031-C2	20ZZ probe named Rae-TNF targeting 359-1490 of XM_016121699.1
<i>IL10</i>	https://www.ncbi.nlm.nih.gov/nuccore/XM_016129276.1	878041-C2	20ZZ probe named Rae-IL10 targeting 2-1244 of XM_016129276.1
<i>IL6</i>	https://www.ncbi.nlm.nih.gov/nuccore/XM_016159525.1	878051-C2	20ZZ probe named Rae-IL6 targeting 3060-4182 of XM_016159525.1
Marburg virus 371bat NP/VP40	https://www.ncbi.nlm.nih.gov/nuccore/FJ750958	853531	39ZZ probe named V-MARV-NP-VP40 targeting 3060-4182 of FJ750958.1
ERB PPIB	https://www.ncbi.nlm.nih.gov/nuccore/XM_016141088.1	573731	20ZZ probe named Rae-PPIB targeting 71-974 of XM_016141088.1

Supplementary Table 1. | ERB- or MARV-specific RNA probes used for ISH assays in this study.

Cohort	Neg					Dex					M6					M12				DM6					low-rep DM12		high-rep DM12		
	Bat1	Bat2	Bat3	Bat4	Bat5	Bat1	Bat2	Bat3	Bat4	Bat5	Bat1	Bat2	Bat3	Bat4	Bat5	Bat1	Bat2	Bat3	Bat4	Bat1	Bat2	Bat3	Bat4	Bat5	Bat1	Bat2	Bat3	Bat4	Bat5
Liver	0 (n=3)	-	0 (n=4)	0 (n=3)	0 (n=3)	0 (n=3)	0 (n=3)	0 (n=3)	0 (n=3)	0 (n=3)	1 (n=3)	1 (n=3)	2 (n=3)	1 (n=3)	2 (n=4)	0 (n=3)	0 (n=3)	0 (n=3)	0 (n=3)	3 (n=3)	3 (n=3)	3 (n=3)	3	3 (n=4)	0 (n=3)	0 (n=3)	3 (n=4)	3 (n=4)	4 (n=4)
Spleen	0 (n=3)	-	0 (n=4)	0 (n=3)	0 (n=3)	0 (n=3)	0 (n=3)	0 (n=3)	0 (n=3)	0 (n=3)	2 (n=3)	1 (n=3)	1 (n=2) 2 (n=1)	0 (n=3)	2	1 (n=1)/ 0 (n=2)	1 (n=2)/ 0 (n=1)	0 (n=3)	1 (n=1) 0 (n=2)	3 (n=3)	-	4 (n=4)	2	3 (n=3)	0 (n=3)	0 (n=3)	3 (n=4)	3 (n=4)	3 (n=4)
Axillary lymph node	0 (n=3)	-	0 (n=4)	0 (n=3)	-	-	-	0 (n=3)	0 (n=3)	0 (n=3)	2 (n=3)	0 (n=3)	1 (n=3)	0 (n=3)	1	0 (n=3)	1 (n=1)/ 0 (n=2)	0 (n=3)	0 (n=3)	2 (n=2) 1 (n=1)	-	3 (n=4)	2	2 (n=3)	1 (n=1)/ 0 (n=2)	-	2 (n=4)	1 (n=4)	2 (n=4)
Bone marrow	0 (n=3)	-	0	-	-	-	-	-	-	0 (n=3)	0 (n=3)	-	-	-	0	-	-	-	-	-	-	-	0	0 (n=3)	-	-	-	-	-
Mesenteric lymph node	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	3	-	3	-	-	2	3	2
Lymph node, other	0 (n=3)	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	-	-	-	-	3 (n=3)	2	1 (n=3)	-	-	-	-	3
Skin, inoculation site	-	-	-	-	-	-	-	-	-	-	3 (SC only)	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	2	1
Skin, other - caudal abdomen/perineum	-	-	-	-	-	-	-	-	-	-	0	-	-	-	2	-	-	-	-	-	-	3	-	-	-	-	0	0	1
Skeletal muscle	0 (n=3)	-	-	-	-	-	-	-	-	0 (n=3)	-	-	-	-	0	-	0	-	-	-	-	0	-	-	-	-	0	-	-
Thymus	-	-	-	-	-	0 (n=3)	-	-	-	-	-	-	-	-	0 (n=4)	-	-	-	-	-	-	0 (n=3)	3	2 (n=1) 1 (n=3)	-	-	-	-	-
Aorta	0 (n=3)	-	-	-	-	0 (n=3)	-	-	-	-	0 (n=3)	-	-	-	0 (n=4)	-	0	-	-	-	0 (n=3)	0 (n=3)	0	0 (n=4)	-	-	0	-	0
Heart	0 (n=3)	-	0 (n=3)	-	-	0 (n=3)	-	-	0 (n=3)	0 (n=3)	0 (n=3)	0 (n=3)	-	-	-	0	0	-	-	0 (n=3)	0 (n=3)	0 (n=3)	1	0 (n=4)	-	-	1	-	0
Lung	0 (n=3)	-	0 (n=3)	-	-	0 (n=3)	-	-	0 (n=3)	0 (n=3)	0 (n=3)	-	0 (n=3)	0 (n=4)	-	0	0	-	-	0 (n=3)	0 (n=3)	-	-	1 (n=3)	-	-	1	1	2
Trachea	0 (n=3)	-	0	-	-	0 (n=3)	-	-	-	-	-	-	-	-	0 (n=4)	-	0	-	-	-	-	1 (n=3)	0	0 (n=3) 1 (n=1)	-	-	-	0	0
Esophagus	0 (n=3)	-	0	-	-	0 (n=3)	-	-	-	-	-	-	-	-	0	-	0	-	-	-	-	2 (n=3)	0	1 (n=3)	-	-	2	0	1
Stomach	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	0	-	1	-	-	3	3	3
Pancreas	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0	-	0	-	-	-	-	2	-	-	-	-	1	0	1
Small intestine	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0	-	0	-	-	-	-	2	-	2	-	-	3	3	3
Mesentery	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0	-	0	-	-	-	-	2	2	1	-	-	2	2	2
Colon	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0	0	0	-	-	-	-	2	-	2	-	0 (n=3)	3	2	3
Colonic lymph node	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0	0	0	-	-	-	-	-	-	-	0 (n=3)	-	2	2 (n=3)	-
Kidney	0 (n=3)	-	-	-	-	0 (n=3)	-	-	0 (n=3)	0 (n=3)	0 (n=3)	0 (n=3)	0 (n=3)	0 (n=4)	-	0	0	-	-	0 (n=3)	0 (n=3)	0 (n=3)	1	1 (n=4)	-	-	1	1	1
Urinary bladder	-	-	0	-	-	-	-	-	-	-	0 (n=3)	-	-	-	0	-	-	-	-	-	-	-	-	2	-	-	1	2	3
Adrenal gland	0 (n=3)	-	-	-	-	-	-	-	-	-	-	0 (n=3)	-	-	0 (n=4)	-	0	-	-	0 (n=1)	0 (n=3)	0 (n=3)	-	1 (n=2) 0 (n=2)	-	-	3	2	3
Vagina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	1 (SM only)	-	-	-	-	-	0	1
Uterus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	1	-	-	-	-	-	3	3
Ovary	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	3
Testis	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	-	-
Penis	-	-	-	-	-	-	-	-	-	-	1 (SM only)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 (ET)	-	-
Brain	-	-	0	-	-	-	-	-	-	-	0	-	-	-	0	-	0	-	-	-	-	-	-	0	-	-	-	0	0
Eye	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	0	1	1
Tongue	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0	-	0	-	-	-	-	1 (SM only)	-	-	-	-	2	1	1
Salivary gland	0 (n=3)	-	0	-	-	-	-	-	-	0 (n=3)	0 (n=3)	-	-	-	0	-	0	-	-	-	-	0 (n=3)	0	-	-	-	0	0	1 (M-type)

Supplementary Table 2. | MARV ISH scores by tissue and cohort in individual ERBs.

For all ISH assays, bat tissues were scored semi-quantitatively: 0 = MARV not detected; 1 = minimally MARV⁺ (1-10% of tissue); 2 = occasionally MARV⁺ (11-25%); 3 = frequently MARV⁺ (25-75%); 4 = extensively MARV⁺ (>75%). Assay replicates per bat were n=1 unless specified in parentheses. Microscopic features and/or cell types assessed in tissues: liver (hepatocytes, Kupffer cells, MΦ, endothelial cells); spleen (MΦ, follicular dendritic cells [fDCs], ellipsoids/endothelium); axillary lymph node (LN; fDCs, MΦ, capsule); mesenteric LN (MΦ, capsule); LN, other (perirenal, mediastinal, submandibular); skin, inoculation site (epidermis, adipocytes, fibroblasts, MΦ, sebaceous glands); skin, other (epidermis, adipocytes, sebaceous glands); skeletal muscle (pectoral, epaxial); heart (valve, endocardium, interstitium); lung (alveolar septa, circulating mononuclear cells); trachea (epithelium, submucosa, adventitia); esophagus (smooth muscle fibers); stomach (interstitium, epithelium); pancreas (acinar cells); small intestine (interstitium, epithelium, smooth muscle fibers, mesothelium); mesentery (adipocytes, mesothelial cells); colon (interstitium, epithelium, smooth muscle fibers, mesothelium); colonic LN (MΦ, fDCs, capsule); kidney (glomerulus, renal tubules, interstitium); urinary bladder (smooth muscle fibers, interstitium); adrenal gland (cortical cells, interstitium); vagina (smooth muscle fibers, epithelium); uterus (smooth muscle fibers, mesothelium, glandular epithelium); ovary (granulosa/theca cells); penis (epithelium, submucosa); eye (conjunctival epithelium); tongue (epithelium, submucosa); salivary gland (acinar cells). SC = subcutis; SM = submucosa; ET = epithelium; M-type = mucous type acinar cells.