SUPPLEMENTARY FIGURE LEGENDS

Supplemental Figure 1: Confocal images showing co-localization of IFN-ε and pan-cytokeratin confirming IFN-ε is expressed in epithelial cells. IFN-ε (green) and pan-cytokeratins (red) in the vagina, endocervix, rectum or lung tissues from uninfected rhesus macaques were detected using immunofluorescence staining. Rabbit anti-IFN-ε and mouse anti-pan-cytokeratin antibodies (Mak6) were used as primary antibodies, and anti-rabbit-Alexa 488 and anti-mouse Alexa 594 were used as secondary antibodies. The merged panel shows the co-localization (yellow) of IFN-ε and Mak6 over the differential interference contrast (DIC) images of the designated tissues.
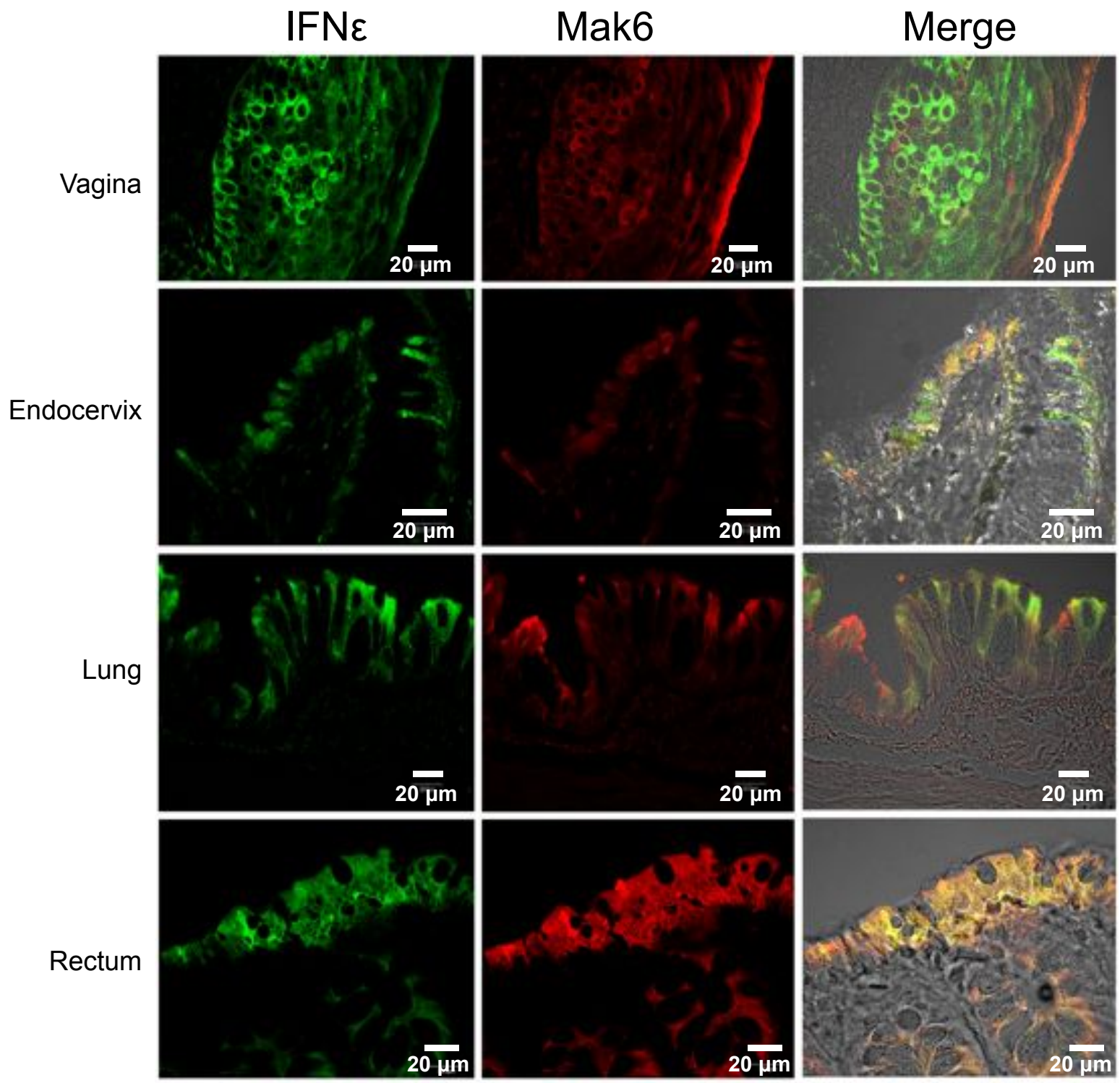
Supplemental Figure 2:Rabbit IgG isotype control for IHCS of rhesus macaque tissues. Rabbit IgG was incubated in the same concentration as IFNE antibody on respective tissues under the same IHCS conditions as used for IFNE staining. Each image is representative of at least 3 sections from at least 3 animals for each tissue examined. Scale bars are drawn to 100 μm.

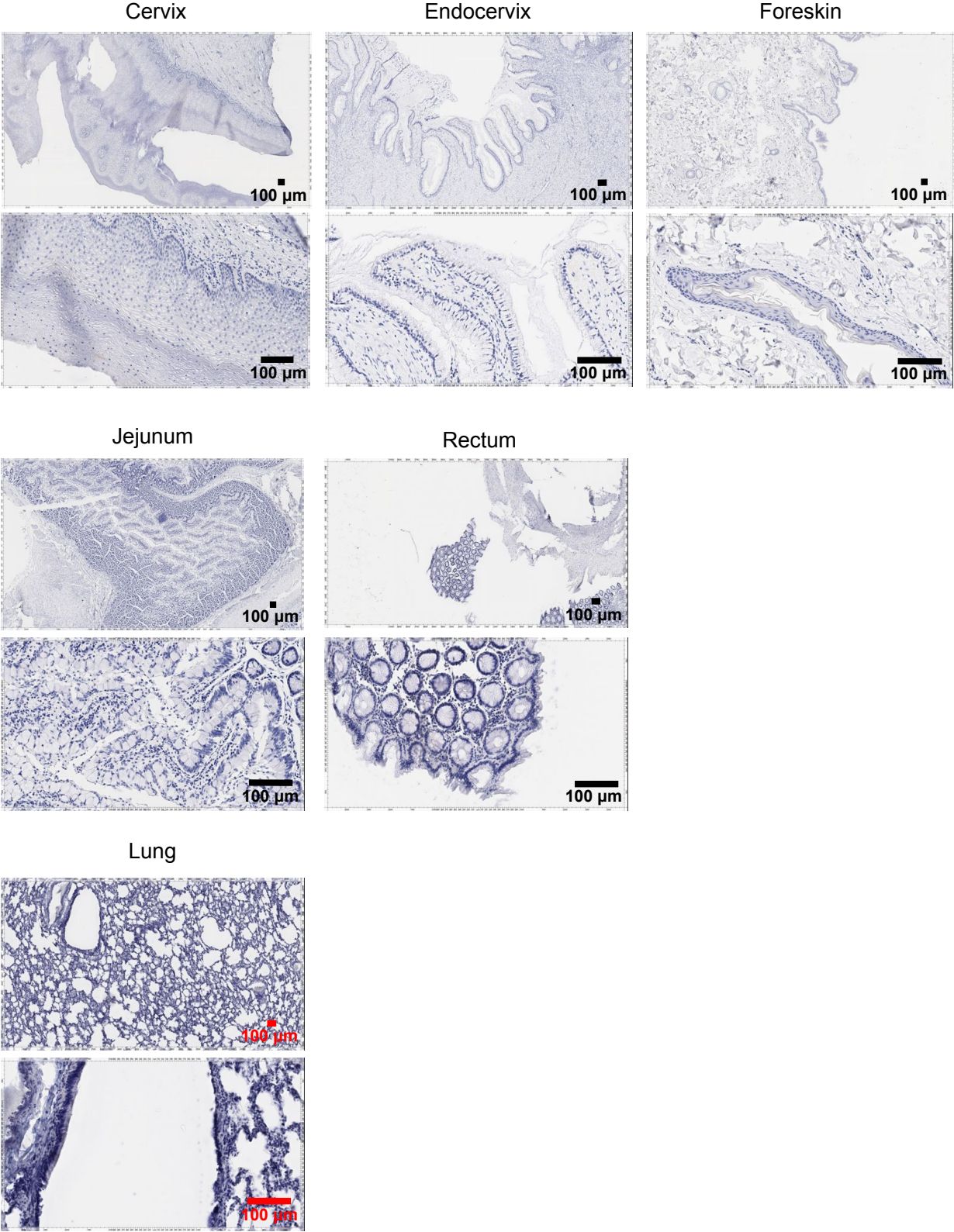**Supplemental Figure 3: An anti-human IFN-ε antibody specifically stains IFN-ε proteins, as demonstrated by peptide antigen and antibody competition assays.** IFN-ε peptide antigen or HTLV envelope peptide and antibody competition staining assays on rectal tissues of an SIV-uninfected rhesus macaque. Human anti-IFN-ε antibody at a working dilution of 1:400 or 1:800 was incubated at room temperature for 2 h without IFNE or HTLV peptide antigen (no peptide) or with peptide antigen at a 5:1 (5X), 10:1 (10X) molar ratio, respectively, prior to a standard IHCS procedure.

Supplemental Figure 4: IFN-ε mRNA expression is unaltered in SIV-infected rhesus macaques. Quantitative RT-PCR of IFN-ε mRNA expression was normalized to GAPDH expression from the rectal tissues of SIV-uninfected rhesus macaques or at 28 days post SIV infection. Data are shown as the mean ± SEM of 3 individual rhesus macaques. There was no significant difference using an unpaired Student's t test.

Supplemental Figure 5: The IFN-ε 5' UTR of the rhesus macaque has 96% identity with human and non-human primates. MUSCLE alignment of the IFN-ε 5'UTR nucleotide sequence from non-human primates, humans and mice. Transcription factor binding sites are shaded in yellow, and black boxes highlight nucleotide mismatches from mouse and non-human primates. Transcription factor binding sites were determined based on conservation of human IFN-ε 5' UTR and Hardy et. al. as a reference [7].

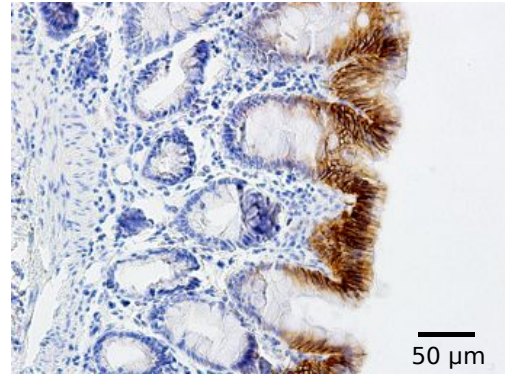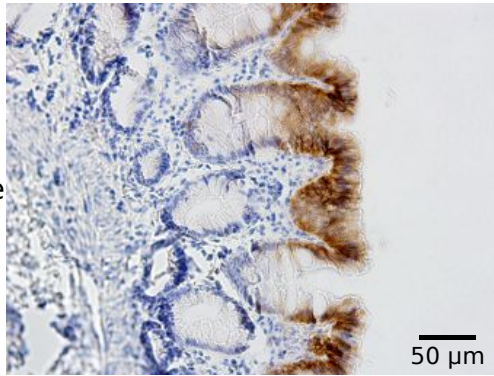|	IFNε	Mak6	Merge
Vagina			
Endocervix			
Lung			
Rectum			

Supplemental Figure 2

Cervix

100 µm

100 µm

Endocervix

100 µm

100 µm

Foreskin

100 µm

100 µm

Jejunum

100 µm

100 µm

Rectum

100 µm

100 µm

Lung

100 µm

100 µm
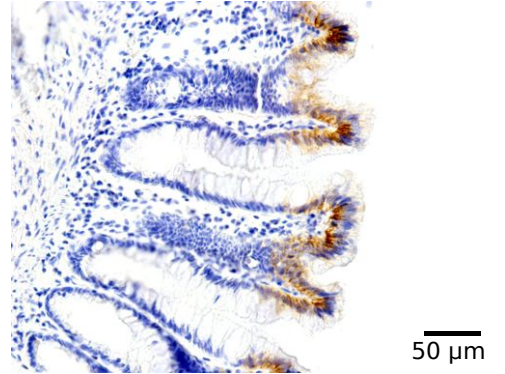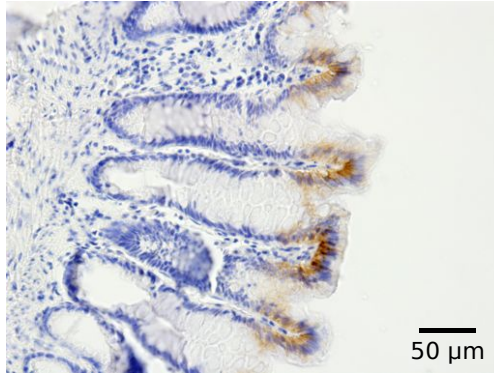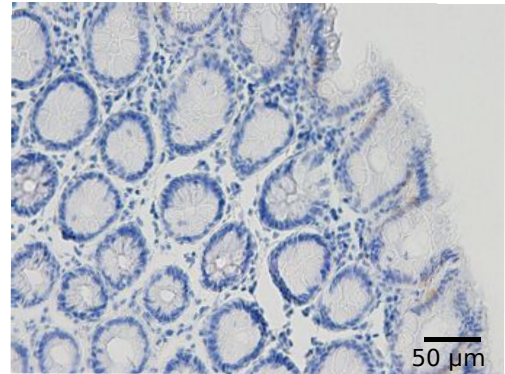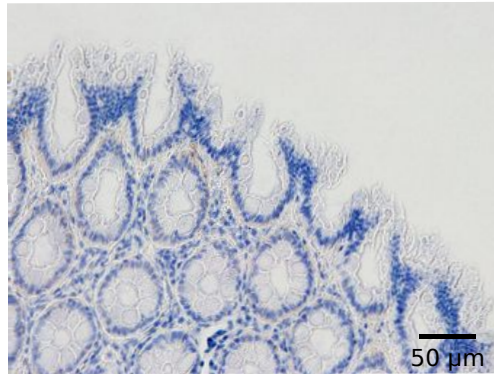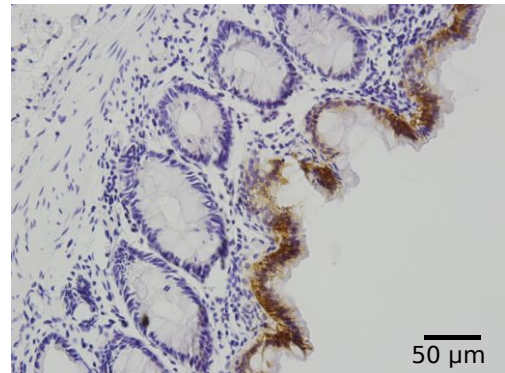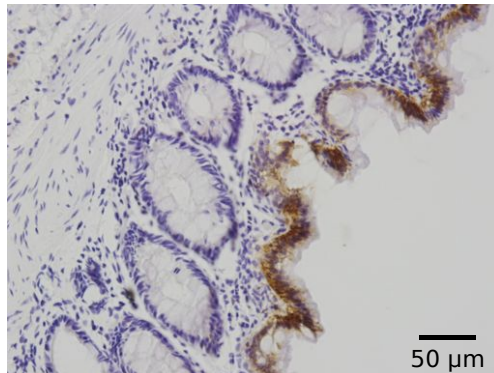
Supplemental Figure 3
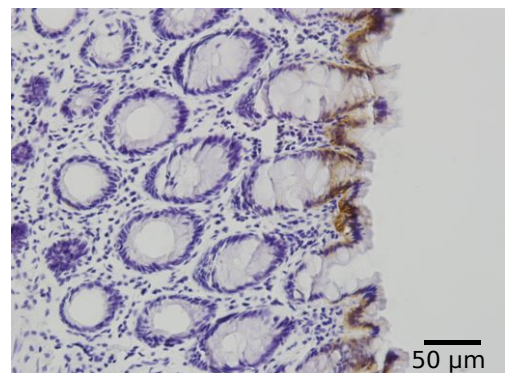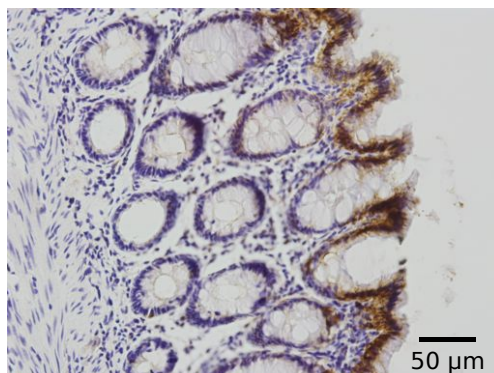
Supplemental Figure 4

Supplemental Figure 5