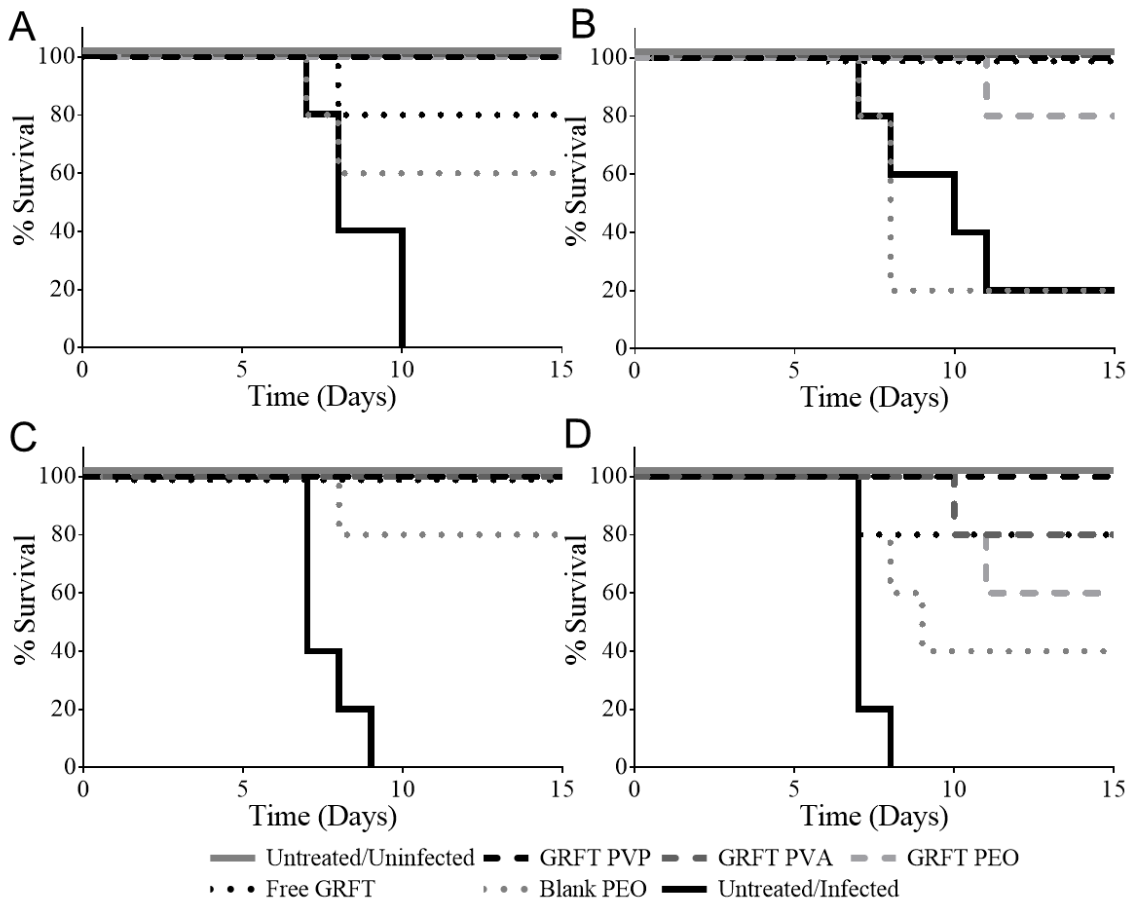
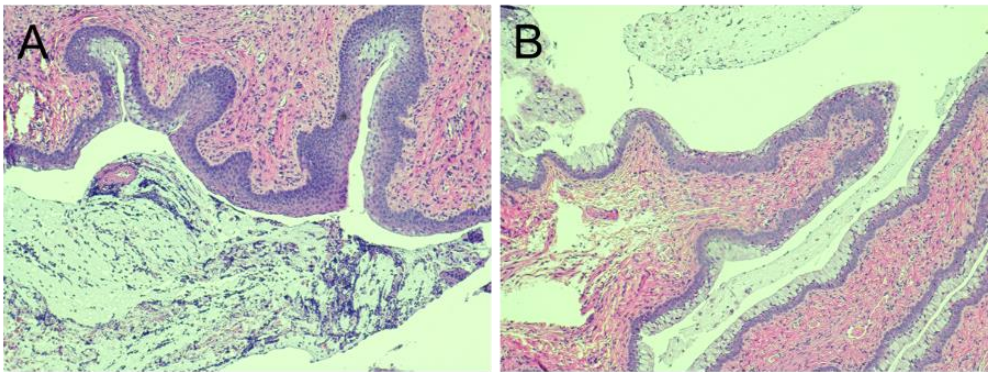
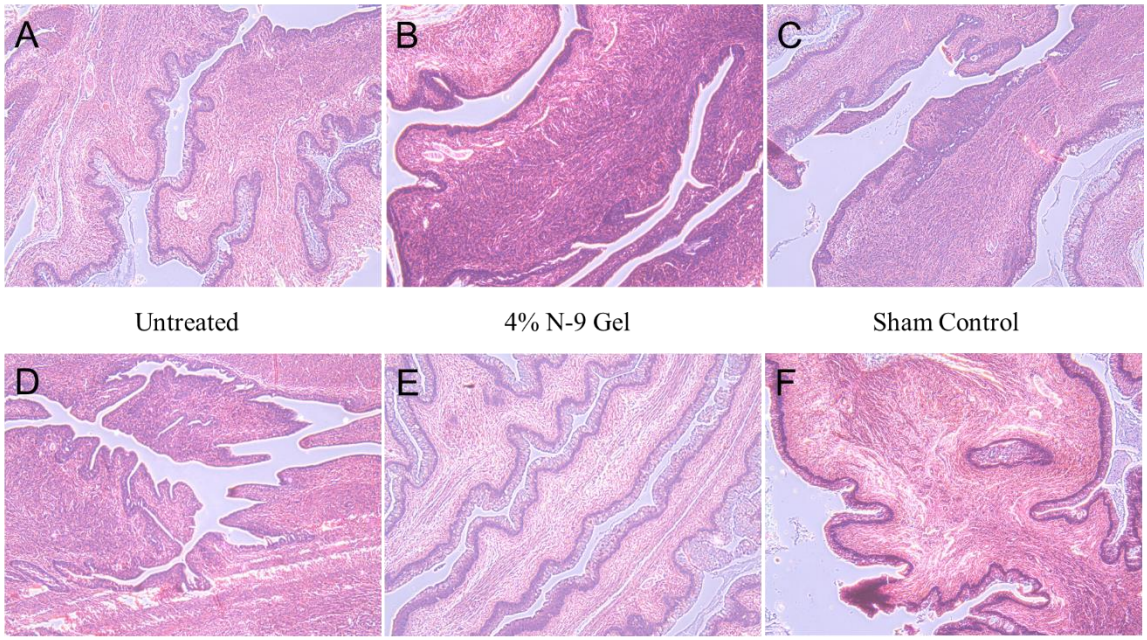


Supplemental Figure 1. Individual Kaplan-Meier survival curves from (A) 1st, (B) 2nd, (C) 3rd, and (D) 4th *in vivo* HSV-2 efficacy studies each with n = 5 mice.



Supplemental Figure 2. Images of H&E stained tissue outliers from 24 hr treated tissue. (A) A blank PVA fiber-treated tissue sample replicate demonstrated increased levels of mucin secretion and neutrophil presence; however, no disruption of the vaginal or cervical epithelium was observed. (B) In contrast, a replicate of N-9 treated tissue exhibited inflammatory markers indicated by the presence of peripheral blood mononuclear cells, goblet cell fusions, and epithelial disruption.



Supplemental Figure 3. The *in vivo* safety of rapid-release fibers was assessed by intravaginally administering fibers for 72 hr. Images depict H&E stained tissues of murine reproductive tracts exposed to (A) no treatment, (B) N-9 gel, and (C) sham-treatment, as well as blank (D) PEO, (E) PVA, and (F) PVP fibers for 72 hr. Similar to 24 hr samples, there was no indication of tissue inflammation or epithelial disruption from fiber administration, relative to untreated controls.

Supplemental Table 1. Fiber diameters as a function of polymer formulation and GRFT content. Statistical significance between different polymers with the same GRFT loading is shown as *, while statistical significance between the same polymer type with different GRFT loading is shown as # ($p < 0.05$).

Fiber Formulation	Diameter (nm)
Blank PEO	507 ± 147
Blank PVA	249 ± 84*
Blank PVP	418 ± 137#
PEO 1% GRFT	239 ± 53#
PVA 1% GRFT	220 ± 59
PVP 1% GRFT	242 ± 57
PEO 10% GRFT	243 ± 95*
PVA 10% GRFT	339 ± 99#
PVP 10% GRFT	324 ± 79#