Supporting information for

Zero-order release of gossypol improves its antifertility effect and reduces its side effects simultaneously

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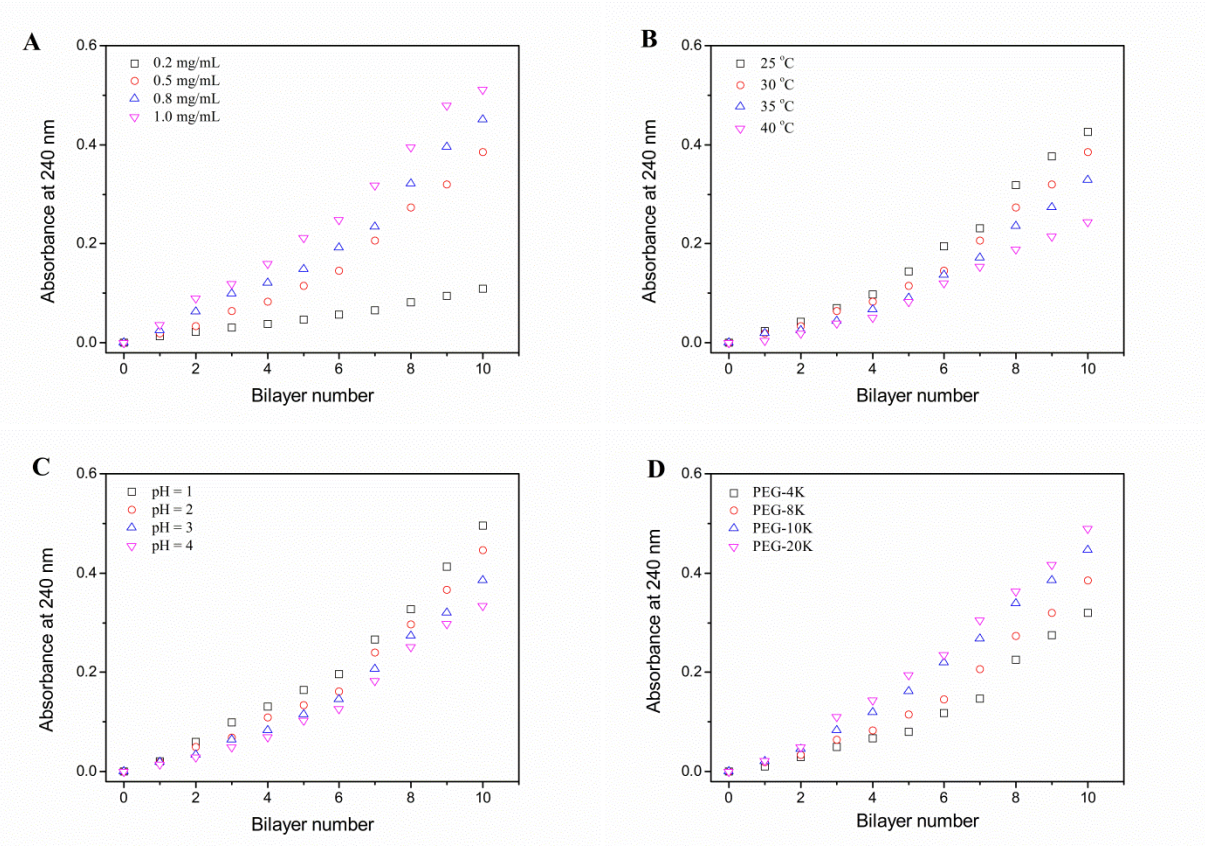

Figure S1. Growth of PEG/Gossypol films under various conditions. (A) PEG-8K and gossypol were assembled at different concentrations as indicated. T = 30 ^{o}C, pH = 3.0. (B) PEG-8K and gossypol were assembled at different temperatures as indicated. [PEG] = [Gossypol] = 0.5 mg/mL, pH = 3.0. (C) PEG-8K and gossypol were assembled at different pHs as indicated. [PEG] = [Gossypol] = 0.5 mg/mL, T = 30 ^{o}C. (D) PEG with different molecular weights were assembled with gossypol. [PEG] = [Gossypol] = 0.5 mg/mL, T = 30 ^{o}C, pH = 3.0.

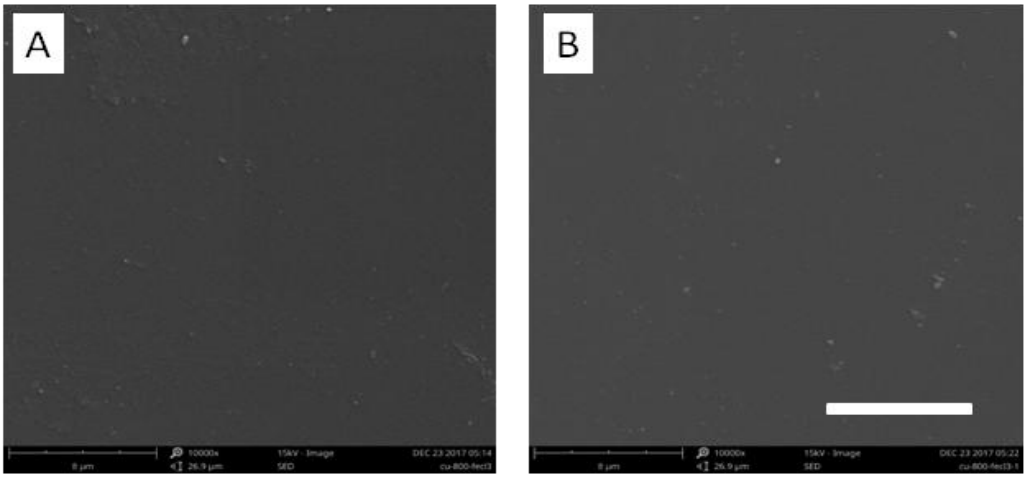

Figure S2. SEM images of a 10-bilayer (A) and a 20-bilayer (B) PEG-8K/Gossypol film. Scale bar: 8 μm.

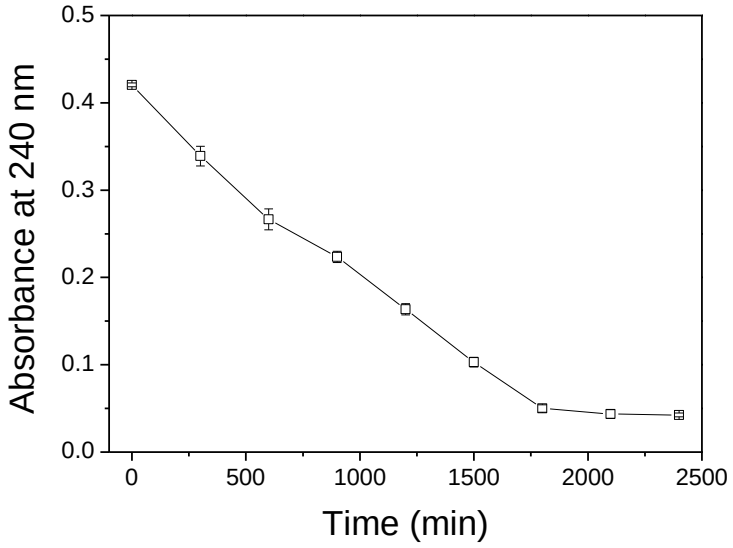

Figure S3. Absorbance of a $(PEG\text{-}8K/gossypol)_{10}$ film in soaked in 50 mM pH 7.4 phosphate buffer at 37°C.

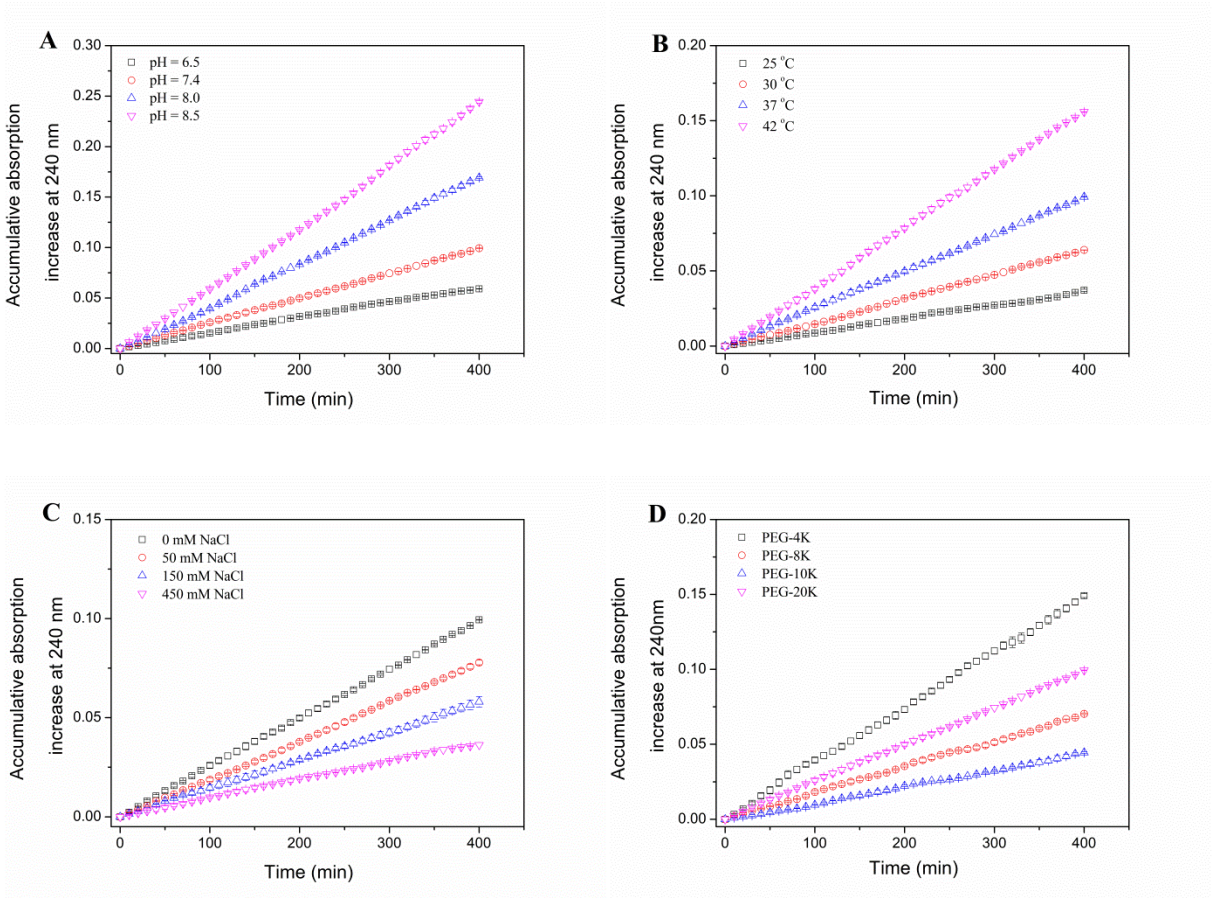

Figure S4. Release profiles of gossypol from $(PEG/Gossypol)_{10}$ films under various conditions. (A) in 50 mM phosphate buffer of various pH as indicated, T=37°C, $(PEG\text{-}8K/Gossypol)_{10}$; (C) in 50 mM pH=7.4 phosphate buffer at various temperatures, $(PEG\text{-}8K/Gossypol)_{10}$; (C) in pH=7.4 50 mM PBS with different concentrations of NaCl, T=37°C, $(PEG\text{-}8K/Gossypol)_{10}$; (D) in 50 mM pH=7.4 phosphate buffer, T=37°C. The films were fabricated from PEG with different molecular weights as indicated.

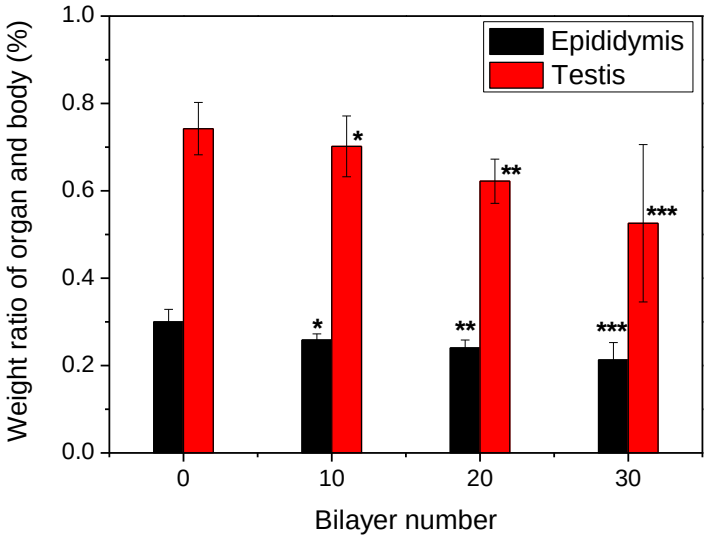

Figure S5. Weight ratios of testis and epididymis for rats implanted with 0(control), 10, 20, and 30-bilayer PEG-8K/Gossypol films. Data are mean±SD (n=5). * $p < 0.05$; ** $p < 0.01$; *** $p < 0.005$ (compared to control group).

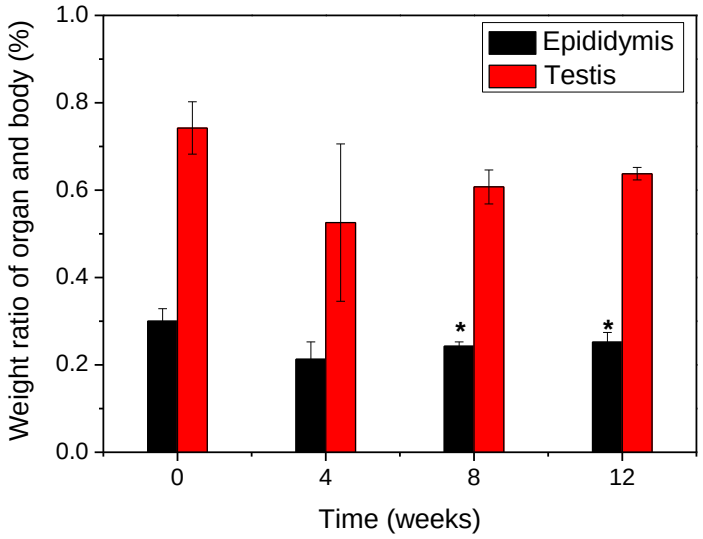

Figure S6. Weight ratios of testis and epididymis for rats implanted with a 30-bilayer PEG-8K/Gossypol film. Data are mean±SD (n=5). * $p < 0.05$; ** $p < 0.01$; *** $p < 0.005$. (compared to 4 week group).