



Supporting Information

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Preprogrammed Long-Term Systemic Pulsatile Delivery of
Parathyroid Hormone to Strengthen Bone

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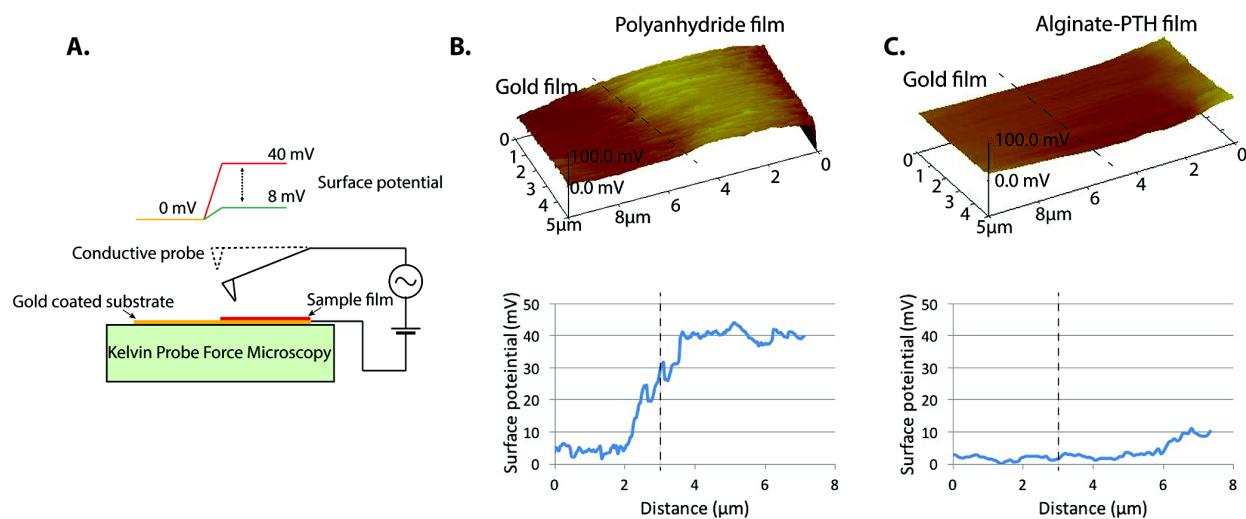
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Figure S1. Surface characterization of the PA films and drug films: Schematic illustration of the KPFM used to measure the surface potential of the films (A); Surface potential map and the potential difference between gold substrate and a PA film (B) or alginate-PTH film (C).

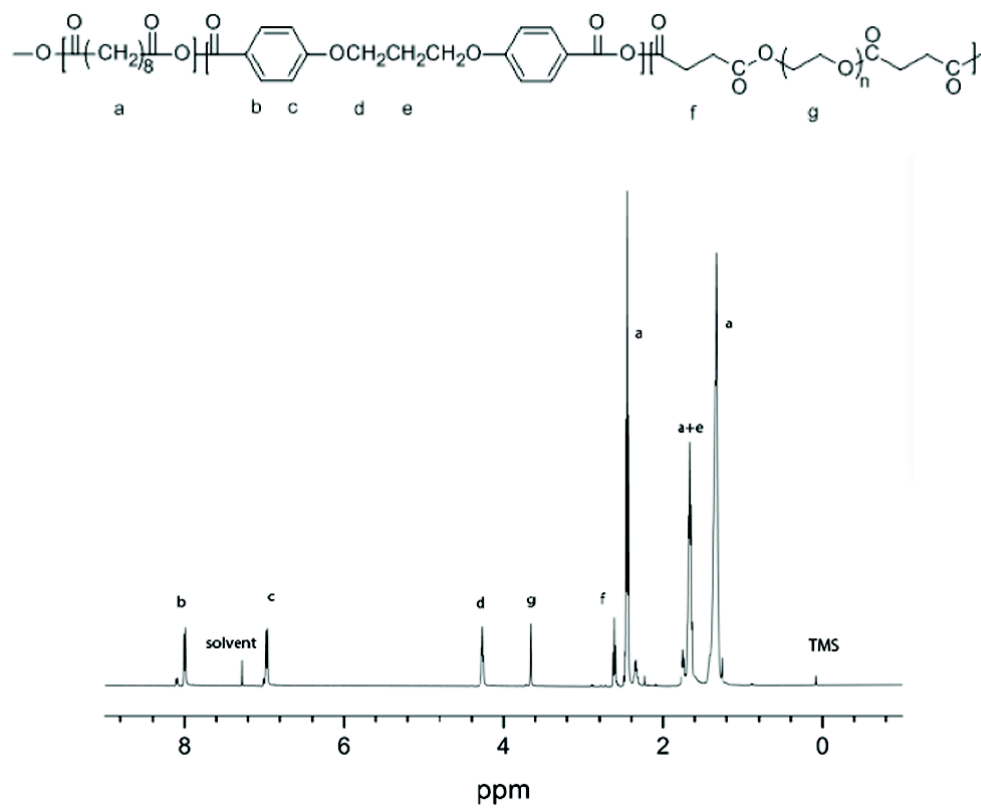


Figure S2. ^1H NMR (400 MHz, CDCl_3) spectrum of an poly(SA-CPP-PEG).

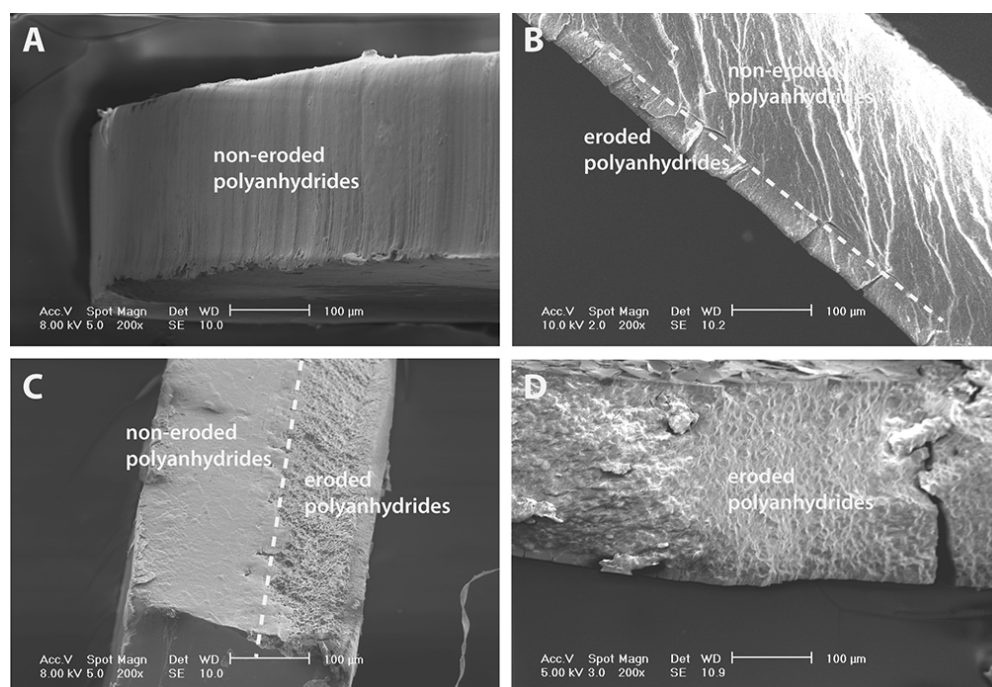


Figure S3. Degradation behavior of PA films. SEM micrographs of untreated PA stored under vacuum (A) and PA specimens with different compositions after erosion in 0.1M PBS at 37°C for 12 h: (B) SA/ CPP/ PEG=80/20/0, (C) SA/ CPP/ PEG=80/20/2, (D) SA/ CPP/ PEG=80/20/10.

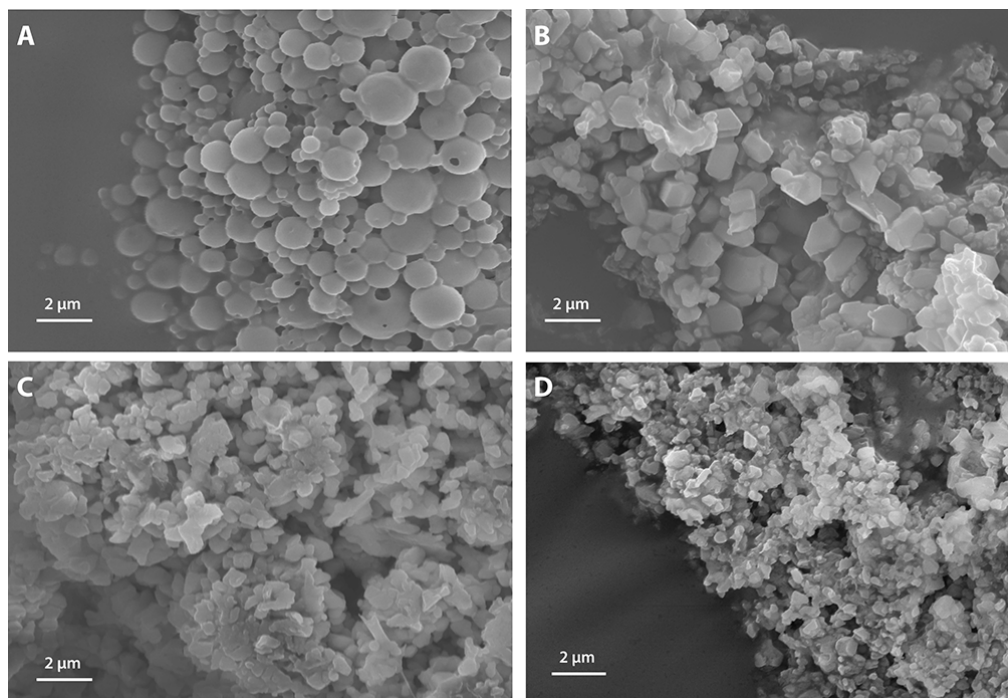


Figure S4. Degradation behavior of PA microspheres. SEM micrographs of untreated PA microspheres stored under vacuum (A) and PA microspheres with different compositions after erosion in 0.1M PBS at 37°C for 12 h: (B) SA/ CPP/ PEG=80/20/0; (C) SA/ CPP/ PEG=80/20/2; (D) SA/ CPP/ PEG=80/20/10.

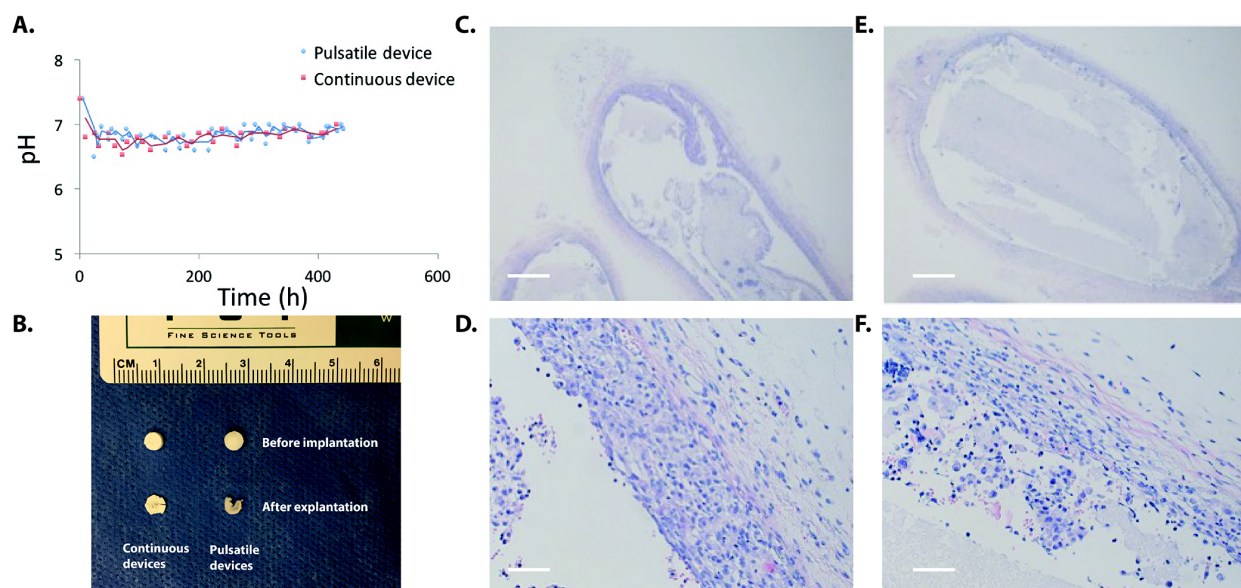


Figure S5. The degradation of pulsatile and continuous release devices *in vitro* and *in vivo*. (A) Change of solution pH value over time (drug delivery devices were immersed in 1 ml 0.1M PBS at 37°C). (B) Drug delivery devices before implantation and after 3-week implantation. H&E staining of pulsatile device at low (C), and high (D) magnification. H&E staining of continuous release device at low (E) and high (F) magnification. Scale bar: 1mm (C and E) and 50 μ m (D and F).