

Supplementary Figures

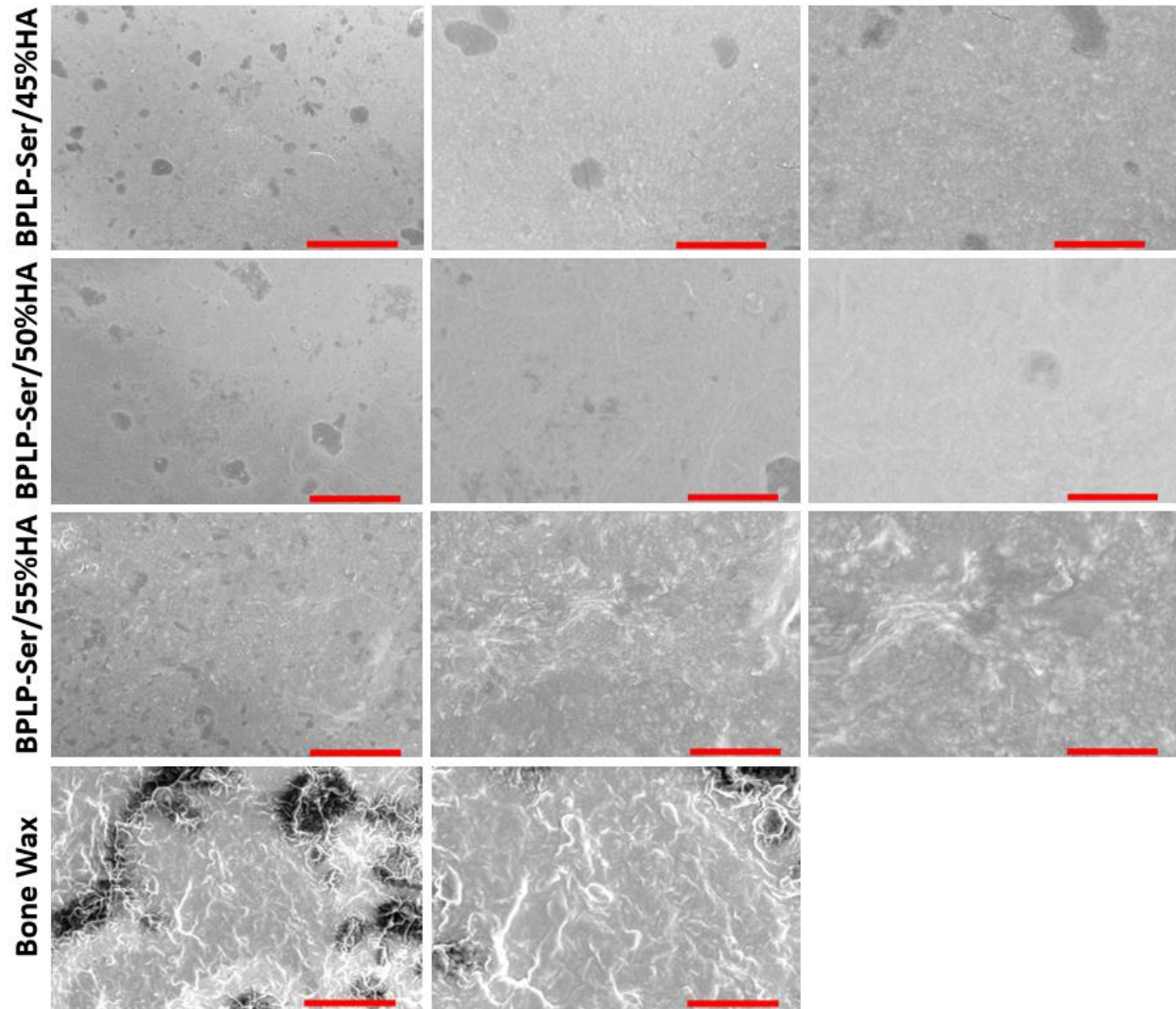


Figure S1: SEM images of bone wax and BPLP-Ser putty with 45%, 50% and 55%HA. Scale bar =20um, 10um, and 5um for the left, center, and right columns, respectively.

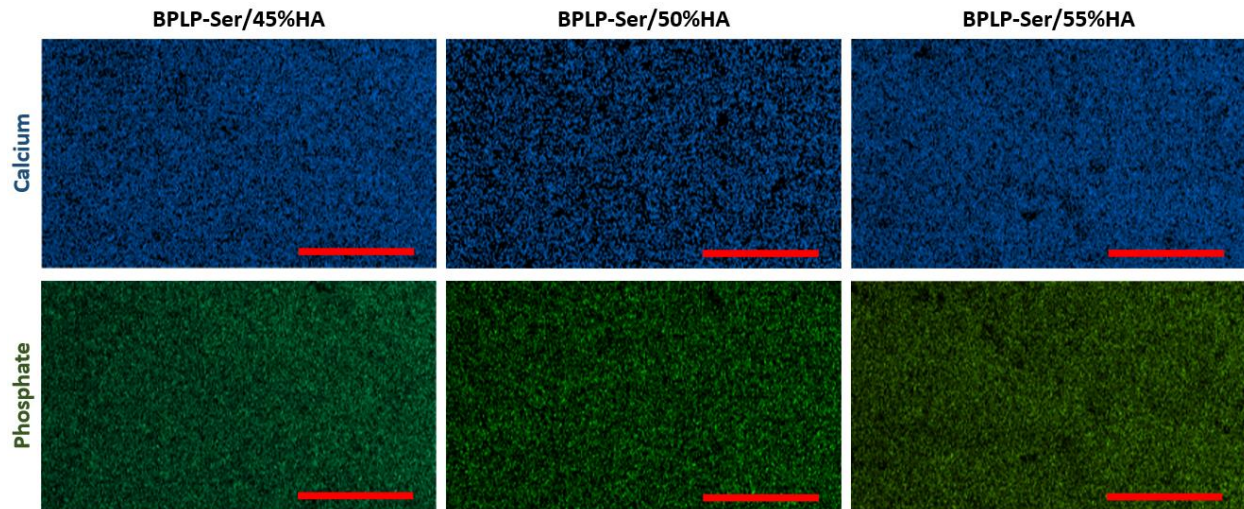


Figure S2: EDS images of BPLP-Ser putty with 45%, 50% and 55%HA. Scale bar =250um.

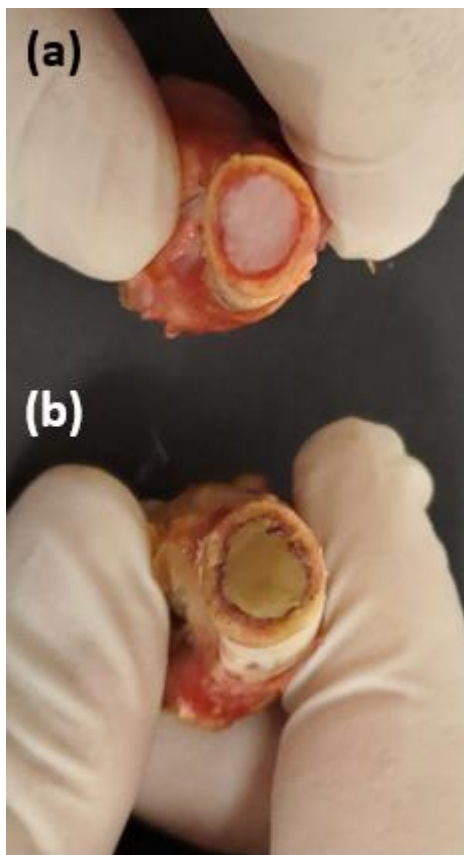
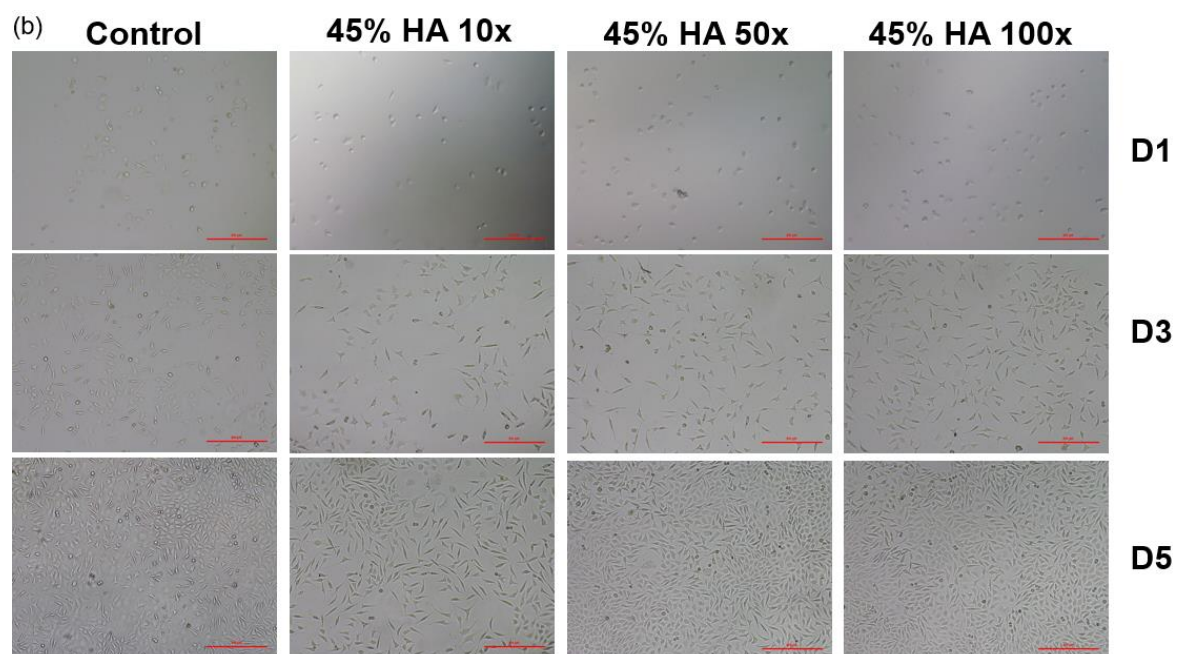
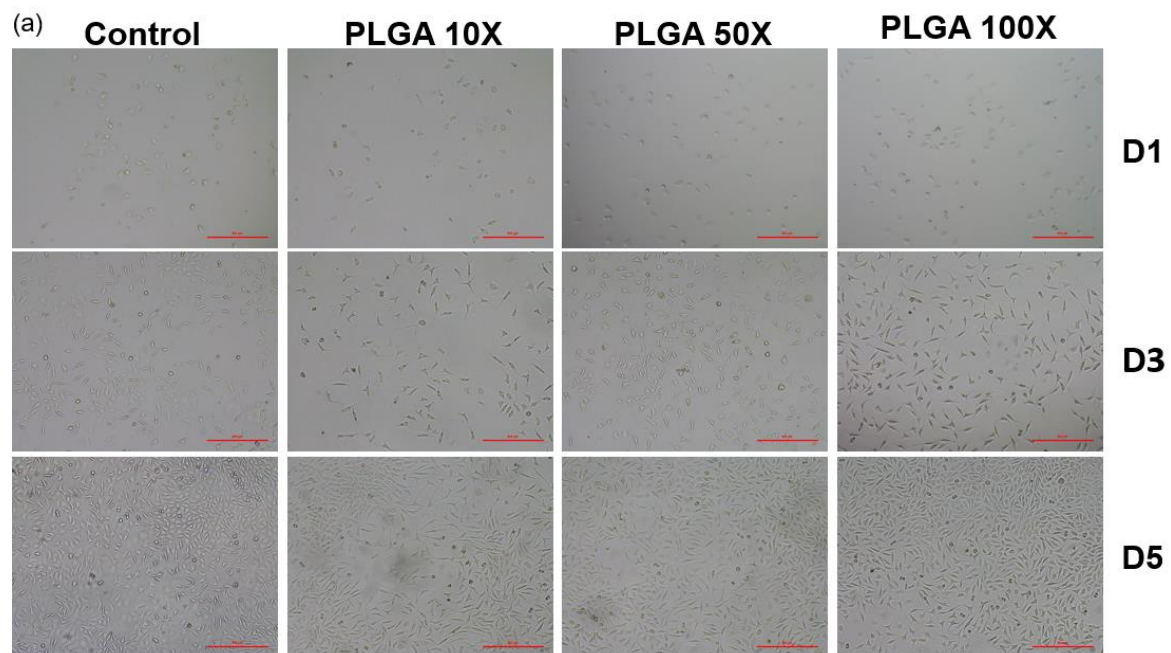


Figure S3: Sealing of the medullary cavity of a chicken femur using (a) Bone Wax and (b) BPLP-Ser/50%HA.



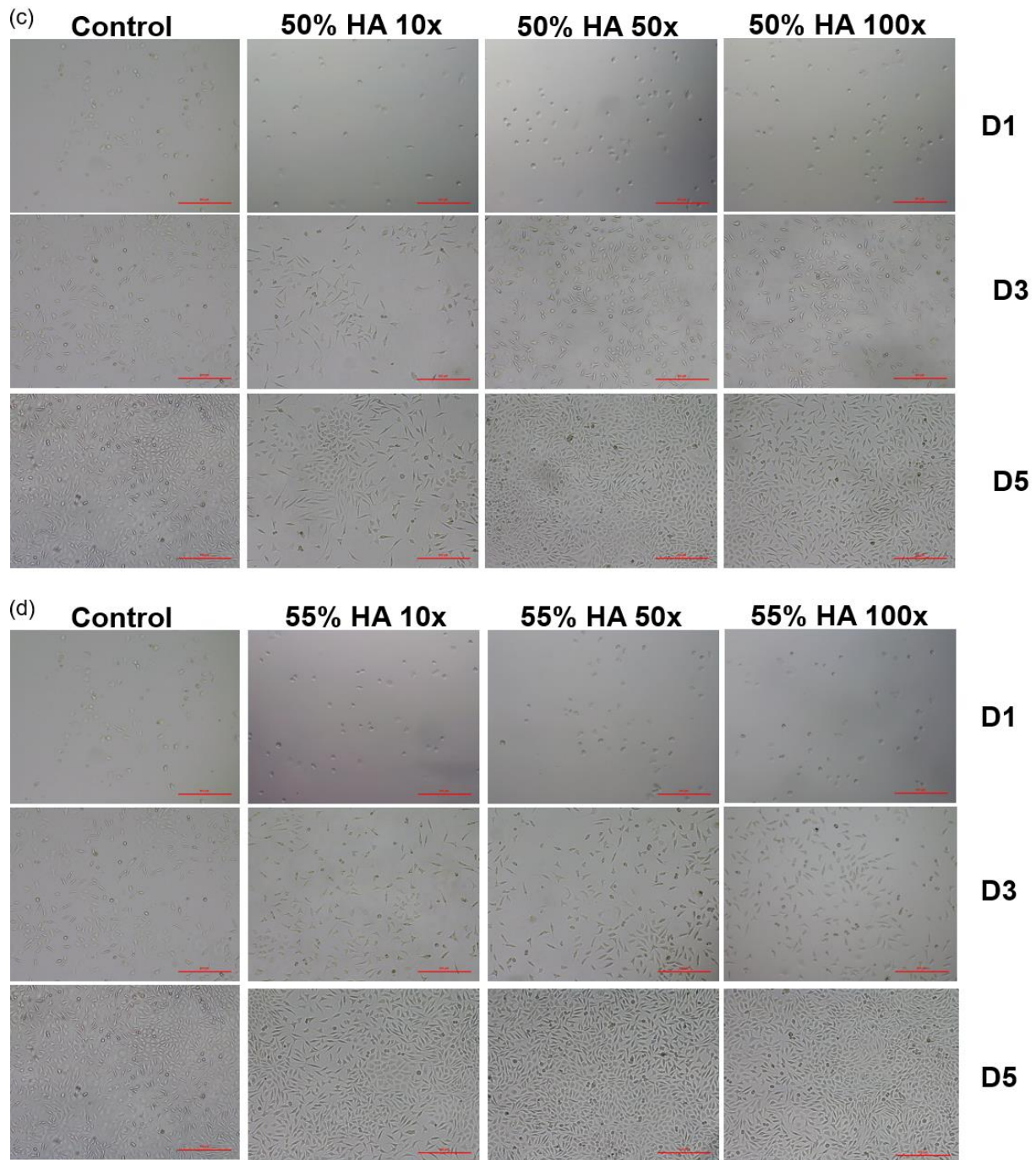


Figure S4: Images of the proliferation assay of (a) PLGA, and BPLP-Ser putties with (b) 45%, (c) 50%, and (d) 55% HA against L929 cells at day 1, day 3, and day 5. Scale bar =300um.

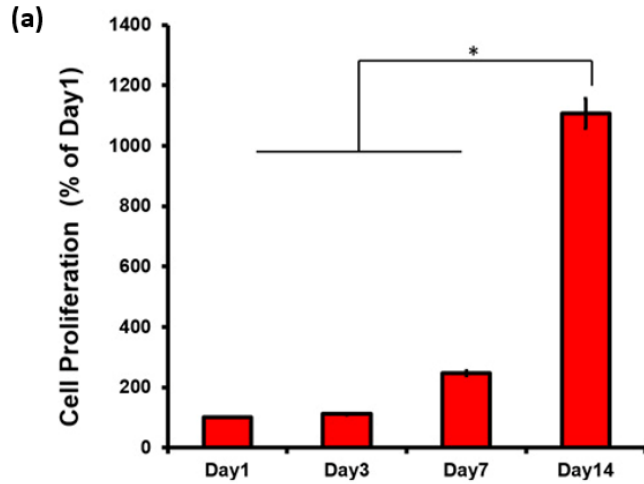


Figure S5: Proliferation of hMSCs on BPLP-Ser/50%HA putty. * $p > 0.05$, $n \geq 3$.

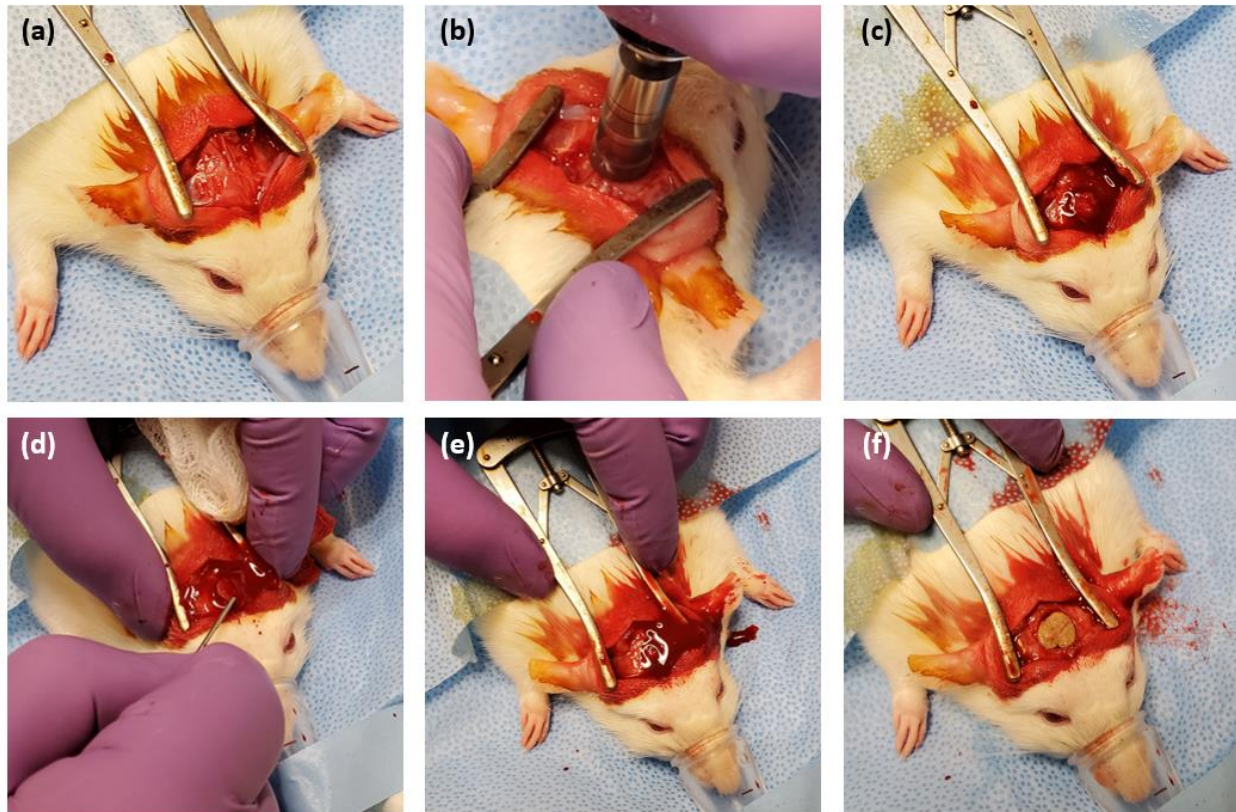


Figure S6: Surgical procedure: (a) exposure of calvarium, (b) and (c) trephining of 8mm critical size full thickness defect, (d) and (e) removal of calvarial bone disk, (f) implantation of BPLP-Ser/50%HA putty. Significant bleeding is observed upon cutting and removal of calvarial bone (c), (d) and (e) which abates upon placement of the putty (f).

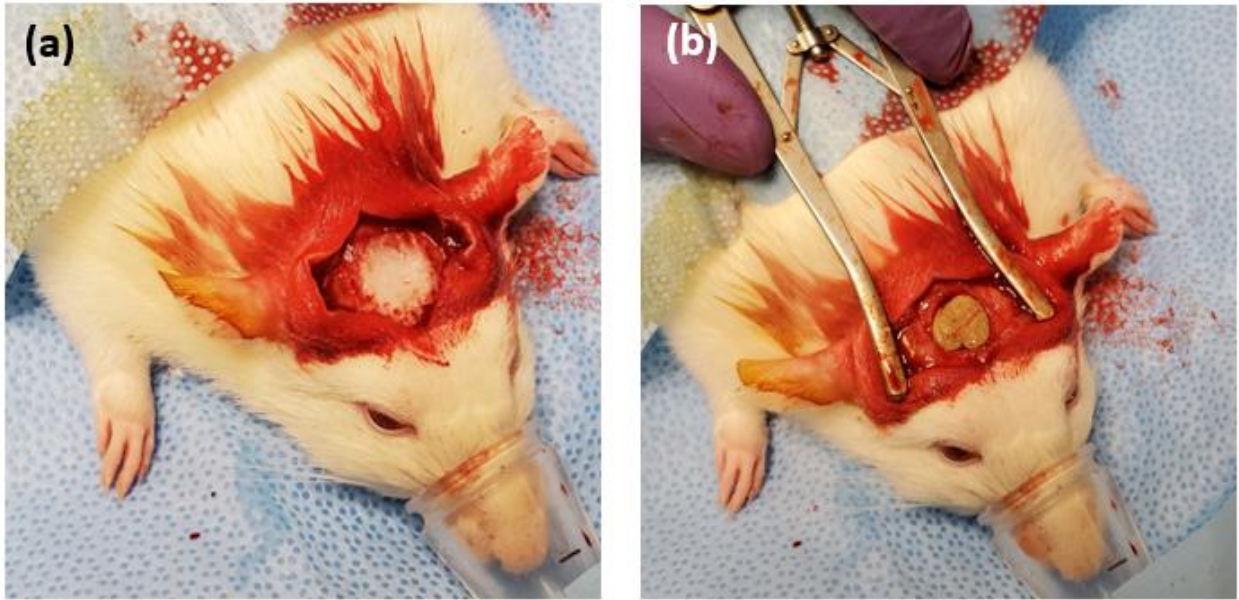


Figure S7: Implantation of (a) bone wax and (b) BPLP-Ser/50%HA attenuates bleeding in a similar manner.

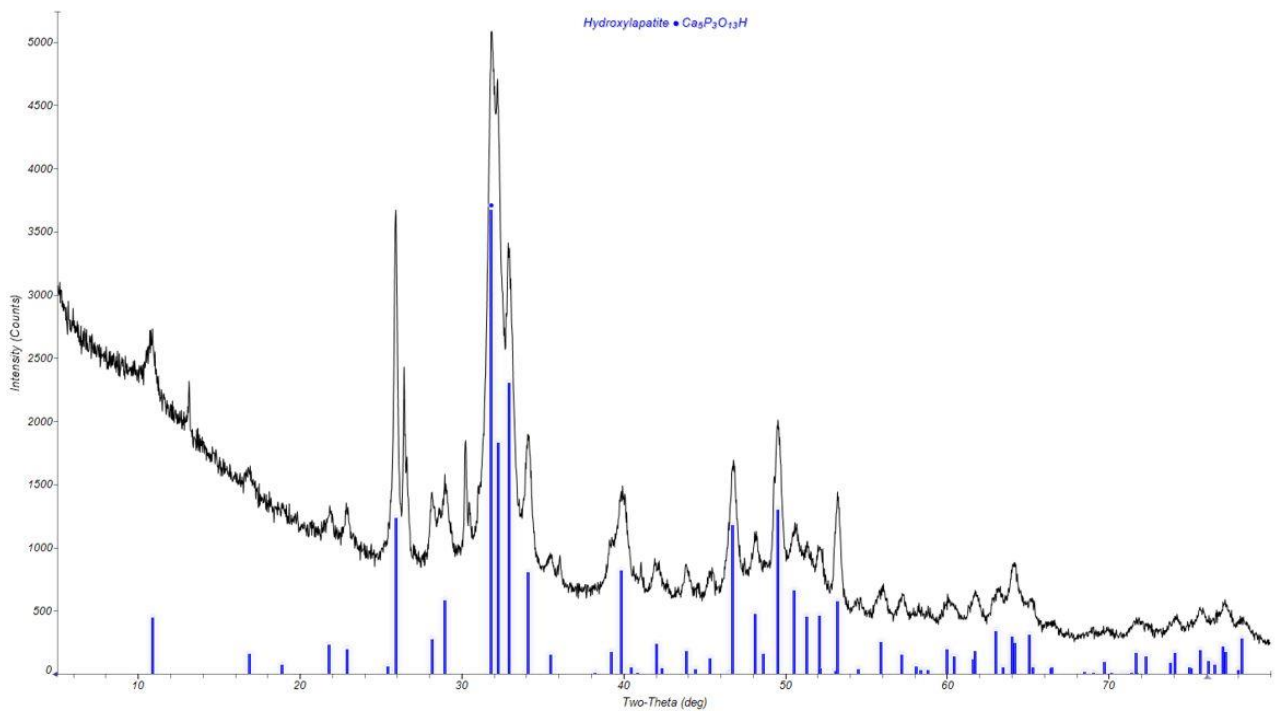


Figure S8: XRD spectrum of hydroxyapatite. The black spectrum corresponds to the HA utilized in this work while blue bars represent the XRD standard for HA.