Supporting Information

Synergetic osteogenesis of Extracellular Vesicles and loading RGD Colonized on the 3D-printed Titanium Implants

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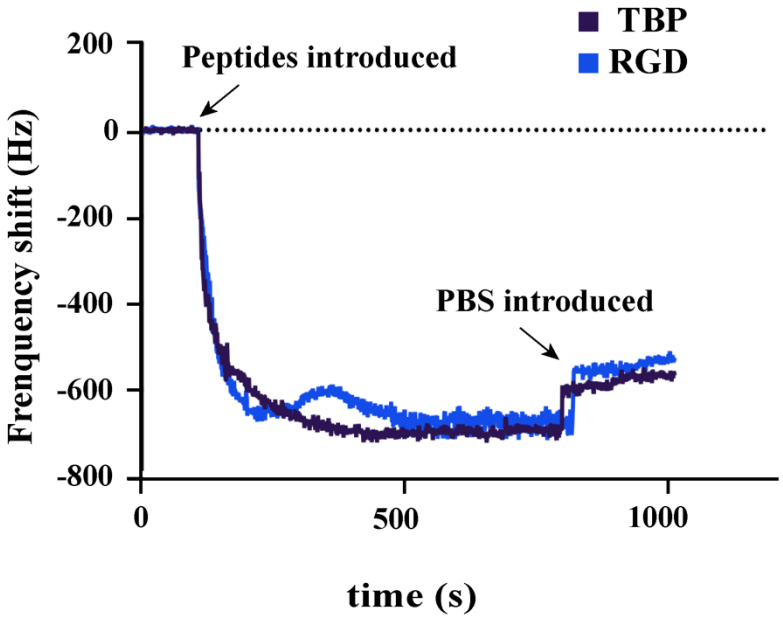

Figure S 1. QCM analyze the combination ability of TBP and RGD with titanium surface. TBP: TBP-CP05, RGD: RGD-CP05.

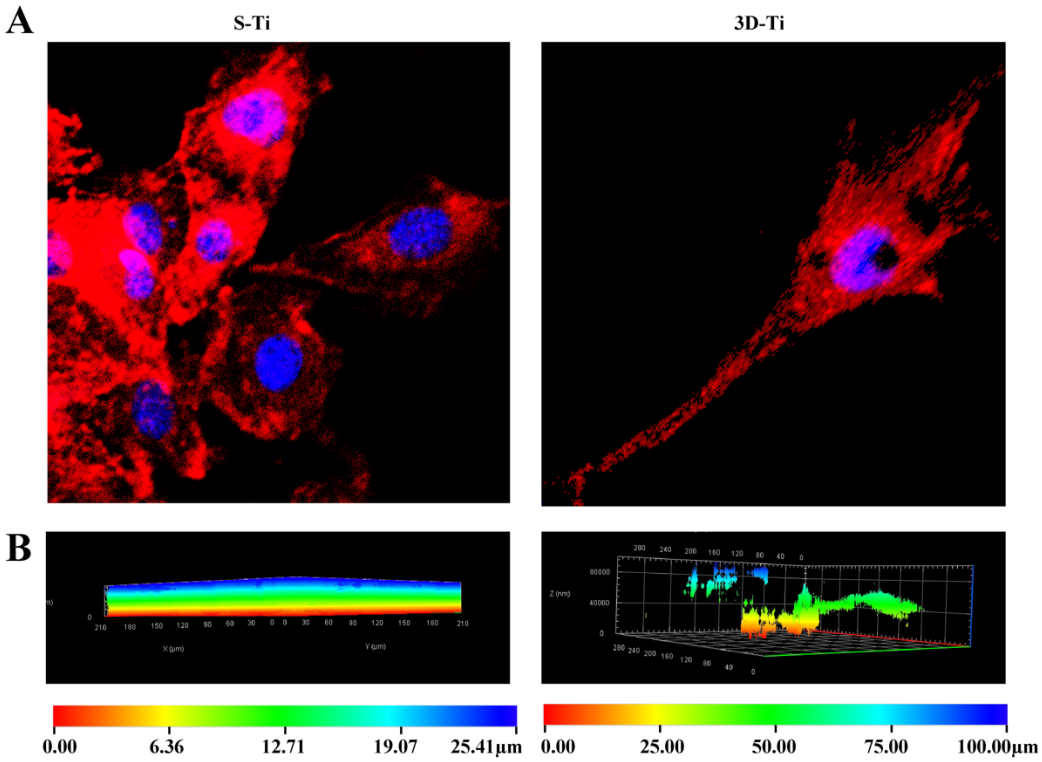

Figure S 2. (A) Confocal micrographs and (B) depth analysis of BMSCs on smooth and 3D-printer titanium surface after 48 h of culture (40×). Phalloidin is colored red and nuclei are colored blue.

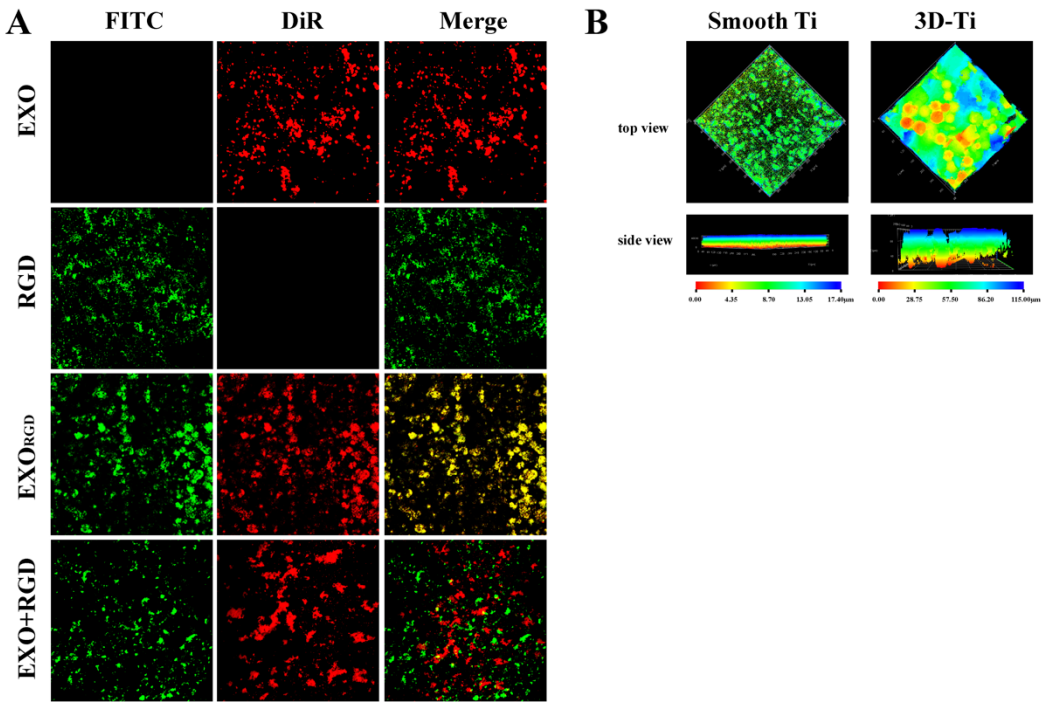

Figure S 3. (A) CLSM showed the colocalization of DiR-labeled EV and FITC-labeled RGD of EVs, RGD and EVs_{RGD} on smooth titanium discs. (B) The CLSM depth analysis of 3D-construction fluorescence of EVs_{RGD} colabeled by FITC and DiR on smooth and 3D-printed titanium discs.

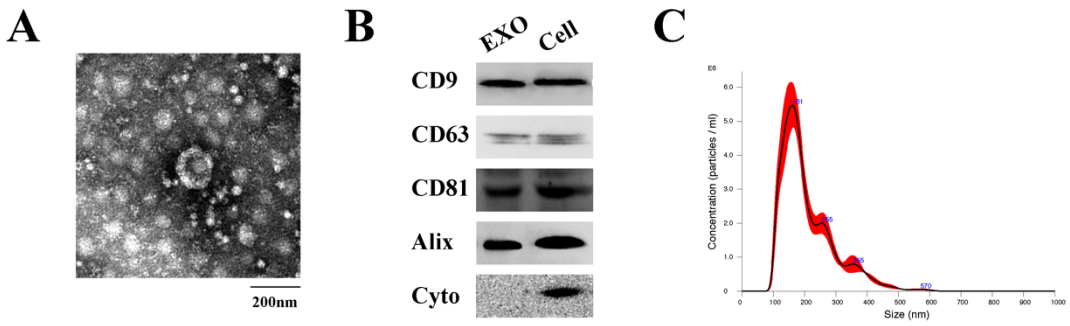

Figure S 4. (A) The shape of EVs was analyzed by TEM. (B) Western blot results examined the expression of surface markers CD9, CD63, CD8, Alix and the no-expression of cellular surface markers Cyto on the EVs. (C) The size of EVs was analyzed by NTA.

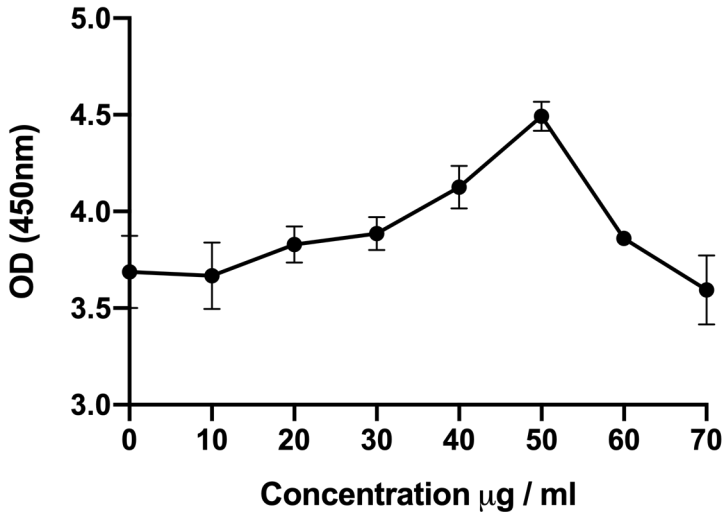

Figure S 5. CCK-8 assay determined most optimum concentration of EVs_{RGD}.

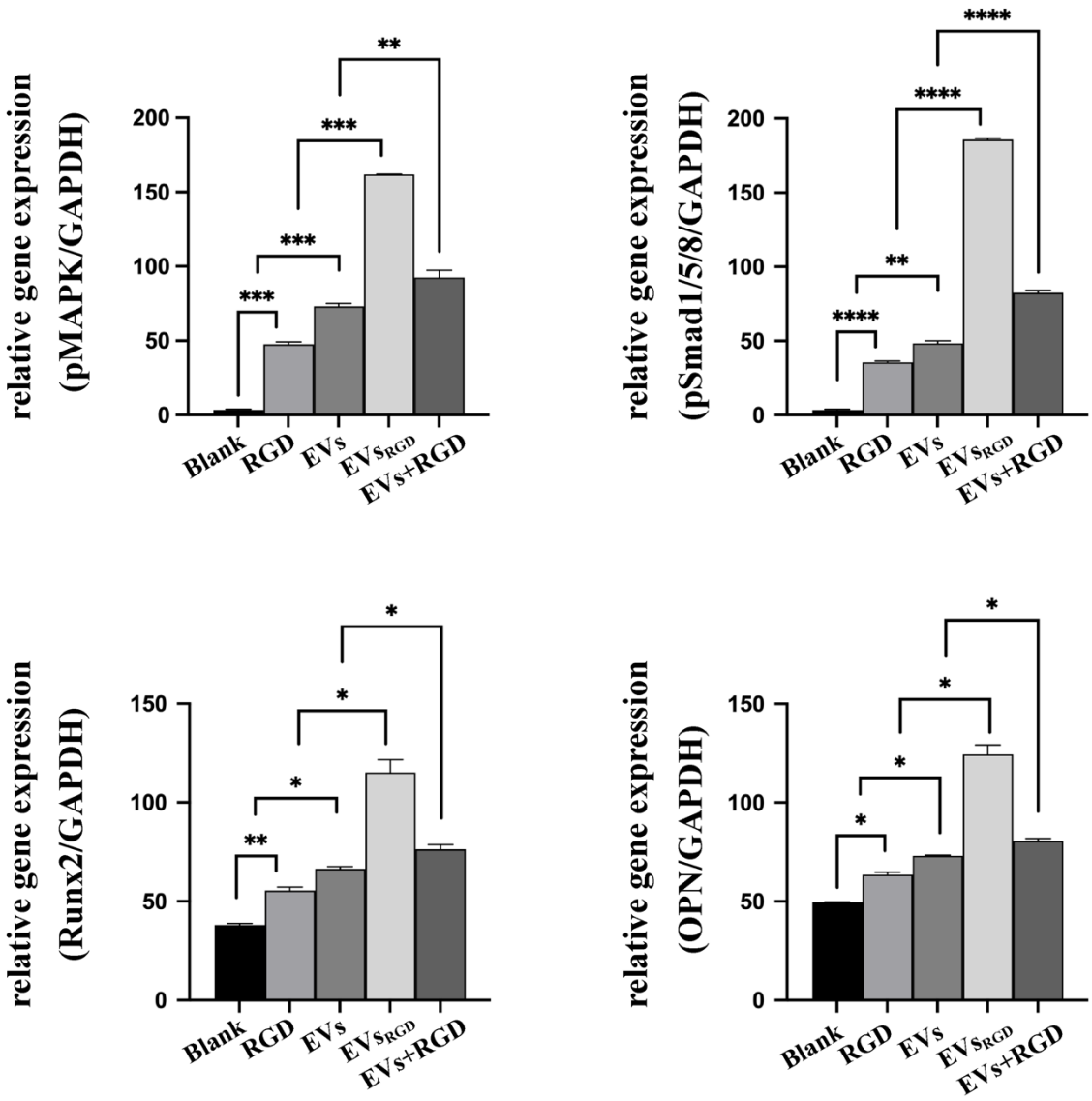

Figure S 6. The quantity analysis of western blot.

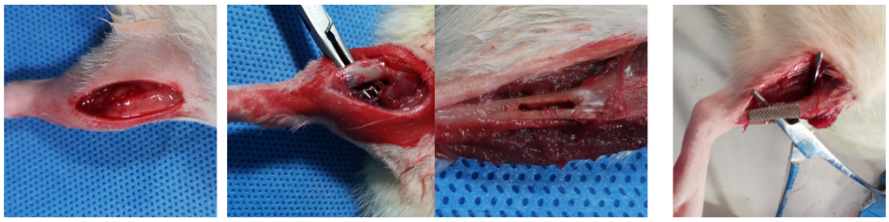

Figure S 7. A 3D-printed titanium implant (2mm in thickness， 8mm in lengthen, 4mm in width) was used to replace the femur bone defection (2mm in width，8mm in lengthen, 4mm in depth) on the rat.

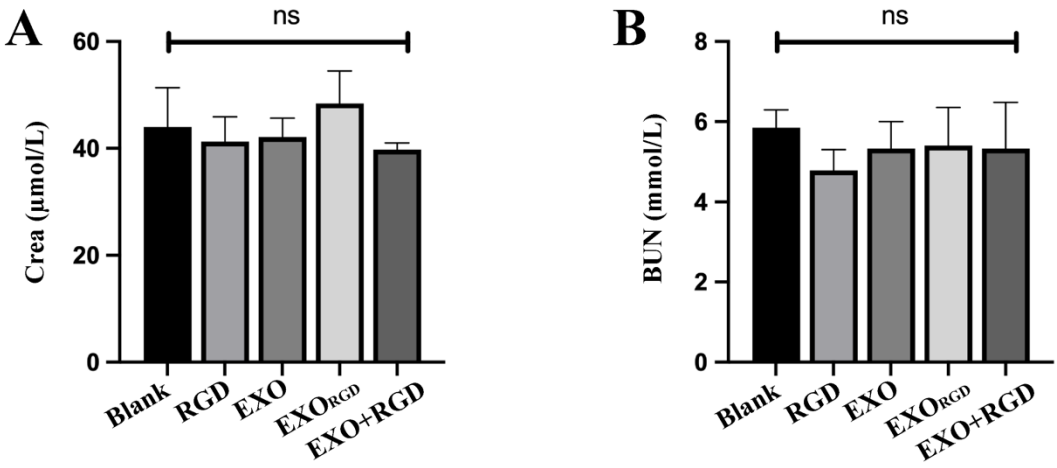

Figure S 8. Measurement of serum Crea and BUN in rats implanted titanium implant treated by RGD, EVs, EVs_{RGD} and EVs+RGD.