

## Supplementary information for

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**Fig. S1** Picture illustration of Masson stained images of rabbit femoral condyles 12 weeks after implantation of titanium alloy scaffolds. Red-stained areas in Masson staining in this picture represent immature and incompletely mineralized osteoid, which is widely present in the growth plate region and at the scaffold interface (e.g., the areas indicated by yellow triangular arrowheads). Blue-stained tissue corresponds to mature and mineralized bone, which is widely distributed in the cortical and trabecular regions of normal bone (e.g., the areas indicated by asterisks). T=Ti6Al4V scaffold; F=Fibrous tissue; BM=Bone marrow.

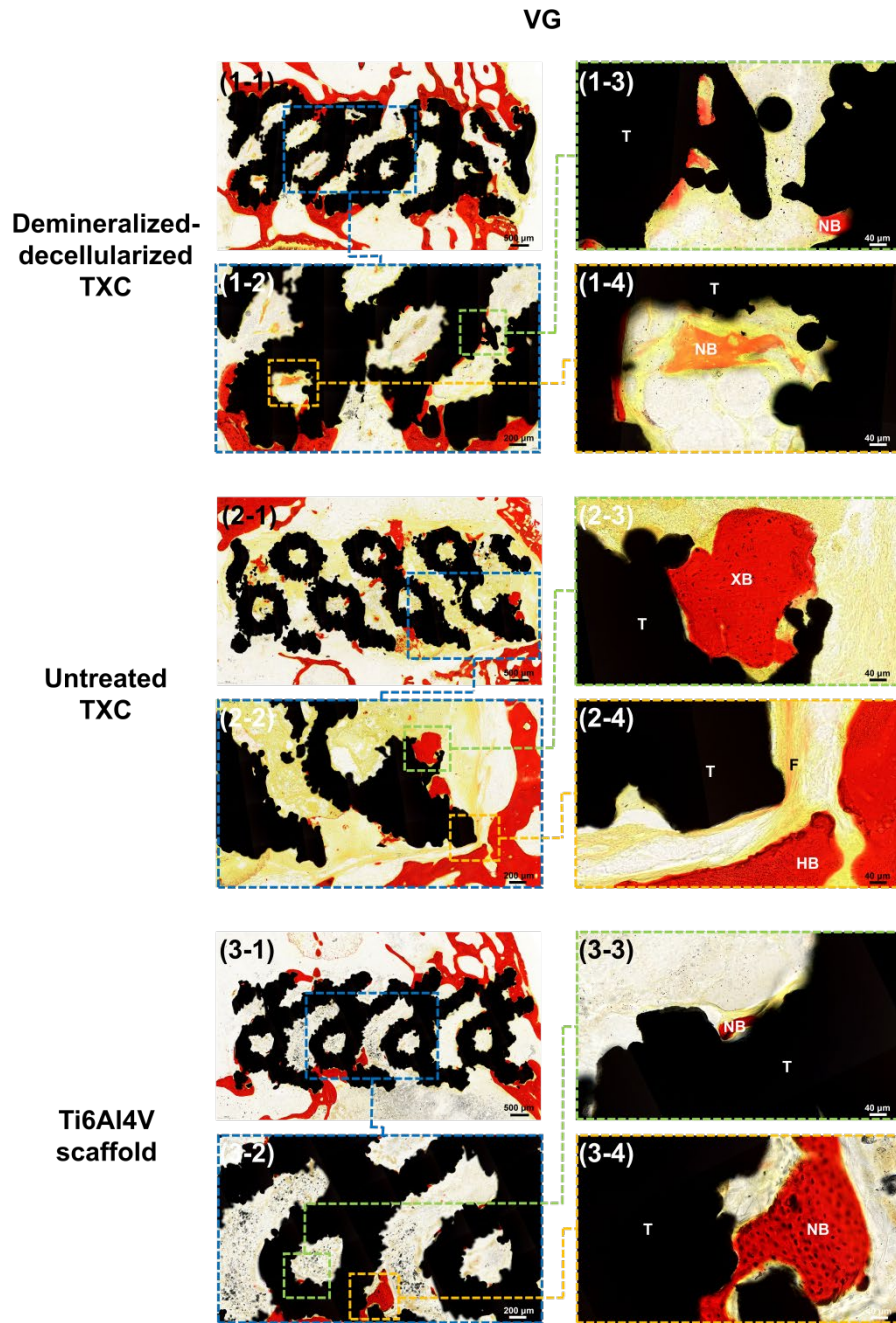


**Fig. S2** VG staining and higher-magnification views of rabbit femoral condyles 12 weeks after implantation of Ti6Al4V scaffolds, untreated TXC and demineralized-decellularized TXC. At the scaffold interface, yellow regions represent immature, incompletely mineralized osteoid-like tissue, whereas the red regions represent mature, mineralized bone. T=Ti6Al4V scaffold; F=Fibrous tissue; NB=New bone; HB=Host bone; XB=xenogeneic bone.

**Table S1. Primer sequences of genes**

| Gene subtype                    | Oligonucleotide Primers (5'-3')                    |
|---------------------------------|----------------------------------------------------|
| <i>ALP</i>                      | F: GCTATCTGCCTTGCCTGTATC<br>R: GGTGCTTTGGGAATCTGTG |
| <i>BMP-2</i>                    | F: TGAGGATTAGCAGGTCTTT<br>R: GCTGGATTTGAGGCGTTT    |
| <i>Runx-2</i>                   | F: GGACTGTGGTTACCGTCAT<br>R: GGAGGATTTGTGAAGACTGTT |
| <i><math>\beta</math>-actin</i> | F: CCTCTATGCCAACACAGT<br>R: AGCCACCAATCCACACAG     |