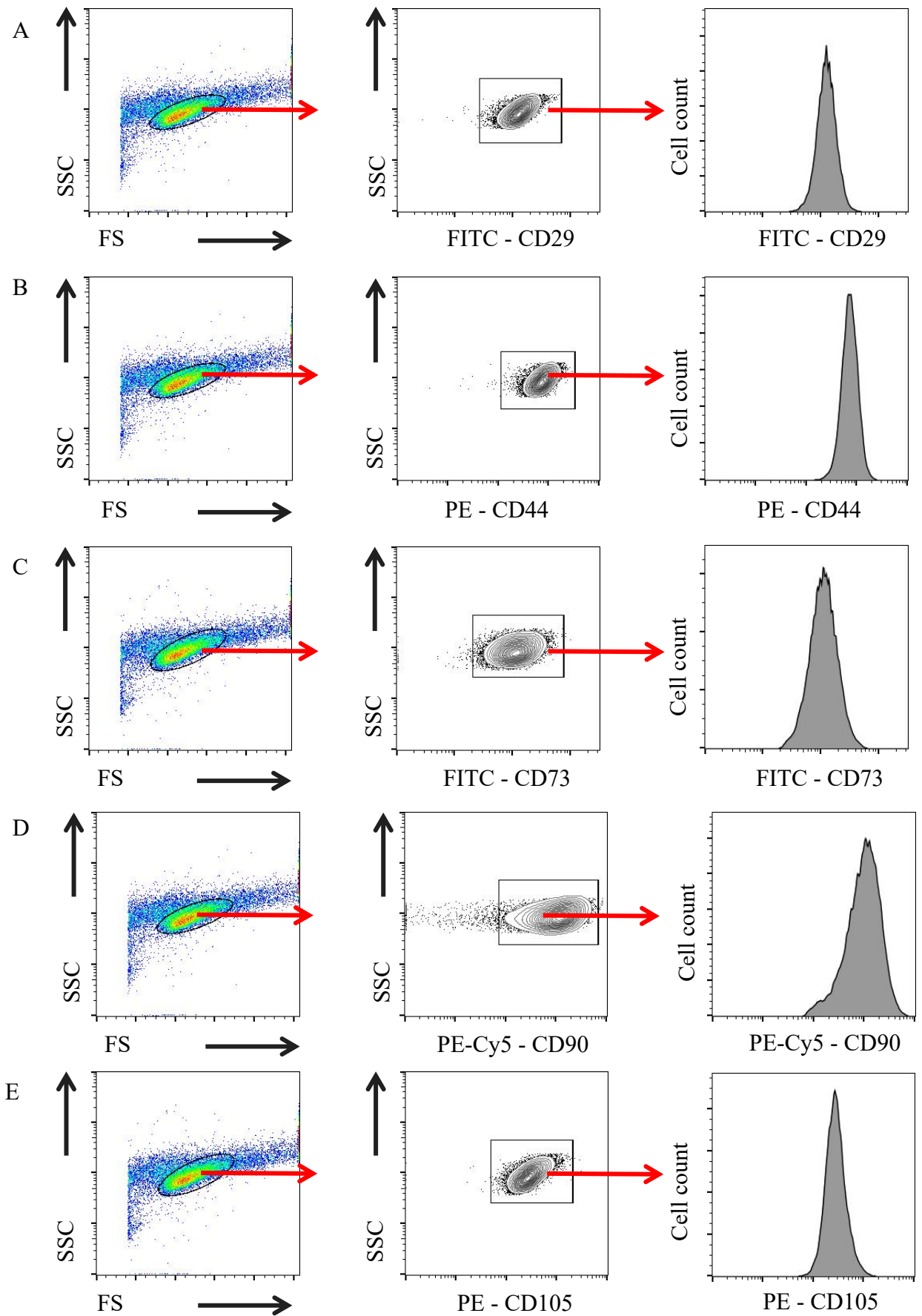
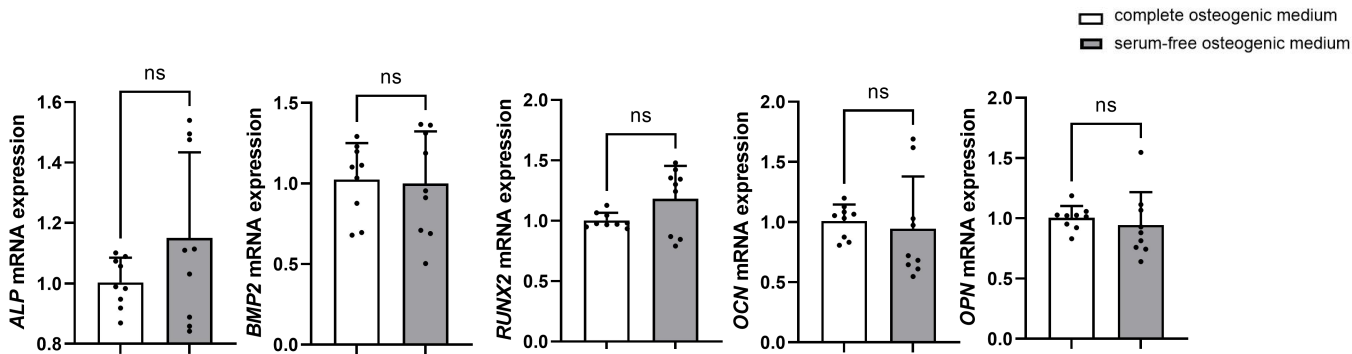
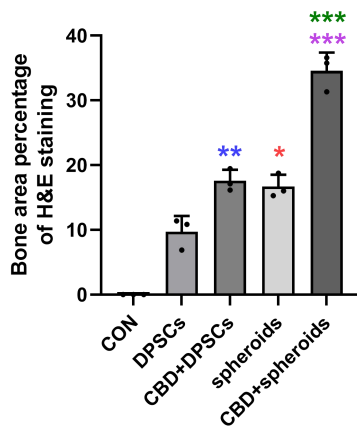


## Supplementary Materials

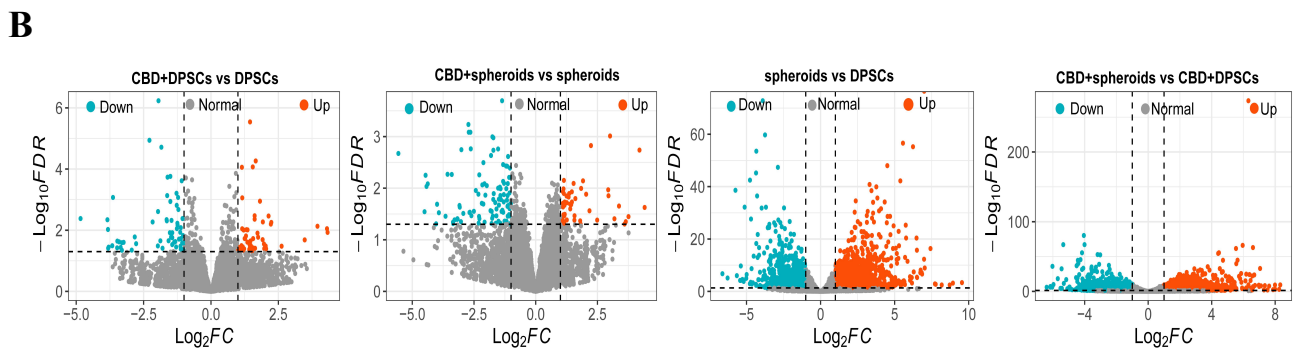
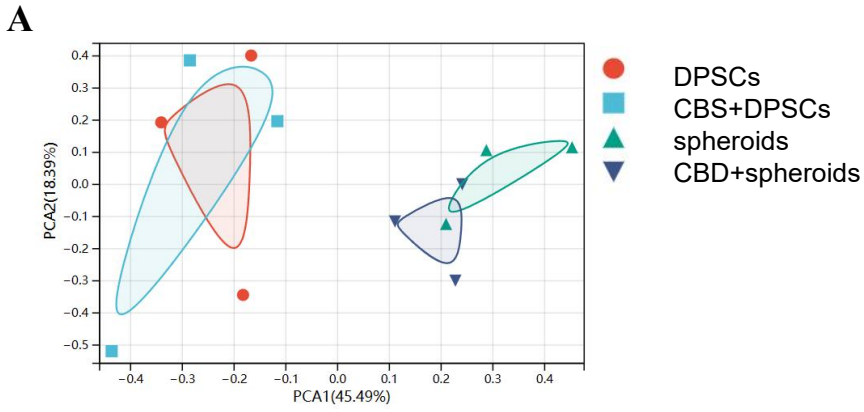


**Supplementary Figure 1.** Gating strategy of individual populations, which including (A) FITC - CD29, (B) PE - CD44, (C) FITC - CD73, (D) PE-Cy5 - CD90 and (E) PE - CD105 .

**A****B****Supplementary Figure 2.**

(A) ALP, BMP2, OCN, RUNX2, and OPN mRNA expression at day 7 in DPSCs cultured in different medium.

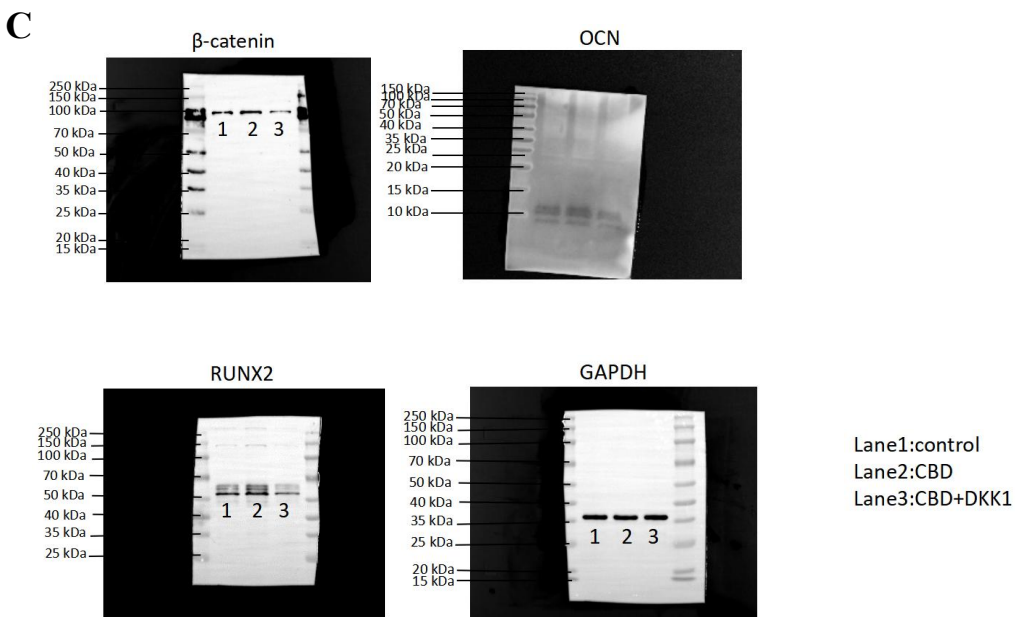
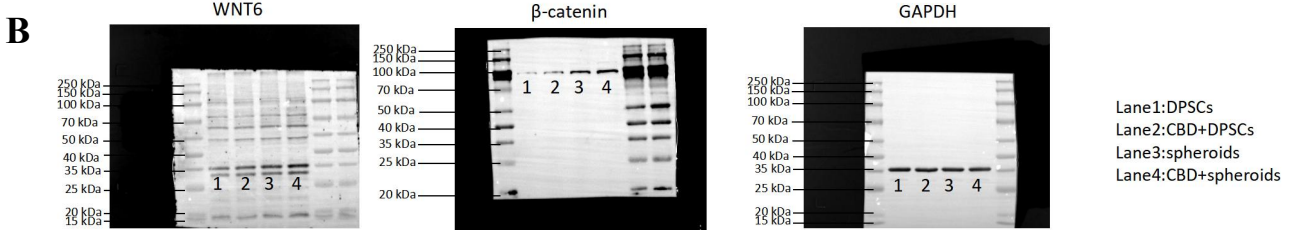
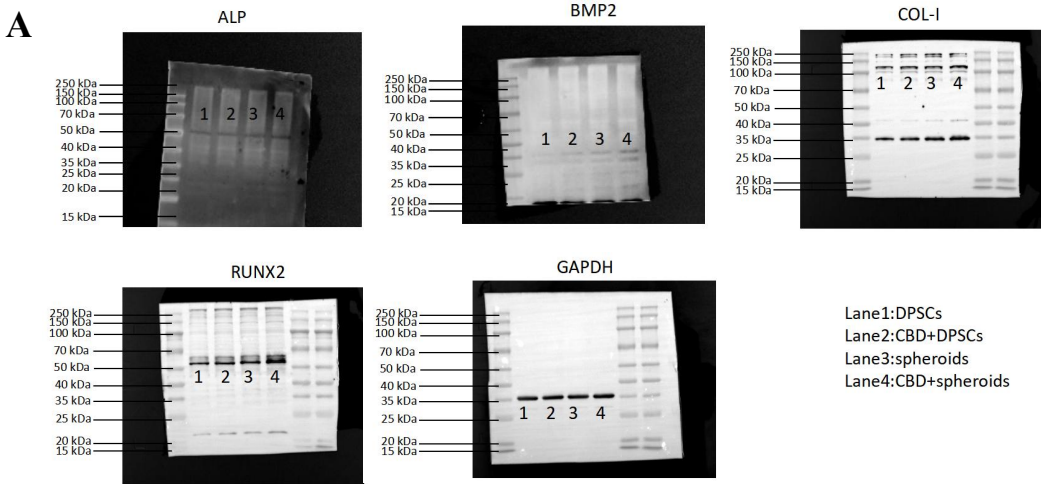
(B) HE staining assayed qualification of new bone area to total area ratios. Data were presented as the mean  $\pm$  SD (n=3). Significant difference compared different groups, \*P<0.05, \*\*P<0.01, and \*\*\*p<0.001; compared between DPSC and CBD+DPSC groups in blue; compared between DPSC and spheroids groups in red; compared between spheroids and CBD+spheroids groups in green; compared between CBD+DPSC and CBD+spheroids groups in purple.



**Supplementary Figure 3.** Transcriptome analysis of DPSC and microspheroids treated with or without CBD.

(A) The Principal Component Analysis (PCA).

(B) Volcano plot showing DEGs.



**Supplementary Figure 4.** Raw images for Western blotting experiments.

(A) Uncropped blot images presented in Fig 4C.

(B) Uncropped blot images presented in Fig 7F.

(C) Uncropped blot images presented in Fig 7H.