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.



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 green; compared between CBD+spheroids groups in green; compared between CBD+DPSC and CBD+spheroids groups in green; compared between green; compared between green; compared between green; compared between green; compared green; com

Α



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.

| A | ALP | BMP2 | COL-I |
|---|--|---|--|
| 1 | 250 HDa 100 | 250 kDa 150 kDa 150 kDa 100 kDa 100 kDa 70 kDa 70 kDa 1 100 kDa 20 kDa 100 kDa 1 100 kDa 20 kDa 100 kDa 20 kDa 100 kDa 20 kDa 25 kDa 25 kDa 12 kDa 15 kDa | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ |
| | RUNX2 | GAPDH | |
| | 250 k03 100 k0a 70 k0a 50 k0a 40 k0a 35 k0a 35 k0a | 250 kDa 100 kDa 70 kDa 50 kDa 40 kDa | Lane1:DPSCs Lane2:CBD+DPSCs Lane3:spheroids Lane4:CBD+spheroids |

1 2 3 4

25 kDa

20 kDa 15 kDa

| п | WNT6 | | | |
|---|--|--|--|--|
| R | 250 kBa 100 kDa 70 kDa 50 kDa 40 kDa 25 kDa | 250 kDa 150 kDa 70 kDa 40 kDa 35 kDa 25 kDa 20 kDa | | |

25 kDa

20 kDa 15 kDa

| platerin | | β- | ca | te | ni | n |
|----------|--|----|----|----|----|---|
|----------|--|----|----|----|----|---|

| | | | | _ |
|-------------------|---|-------|----------------|---|
| kDa kDa kDa | | | | |
| kDa —— | 1 | 2 3 4 | And Address of | |
| kDa | | | | |
| kDa | | | | |
| kDa | - | | | |
| kDa ——— | | | | |
| kDa ——— | - | | | |
| | | | | |

| 250 kDa 150 kDa 100 kDa | | | | - | |
|-------------------------------|---|-----|-----|----|--|
| 70 kDa — | | | | _ | |
| 50 kDa | - | | | _ | |
| 40 kDa | | | | -= | |
| 25 kDa — | - | 1 2 | 3 4 | 1 | |
| 29 kBa= | | | | | |

GAPDH

Lane1:DPSCs Lane2:CBD+DPSCs Lane3:spheroids Lane4:CBD+spheroids





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.