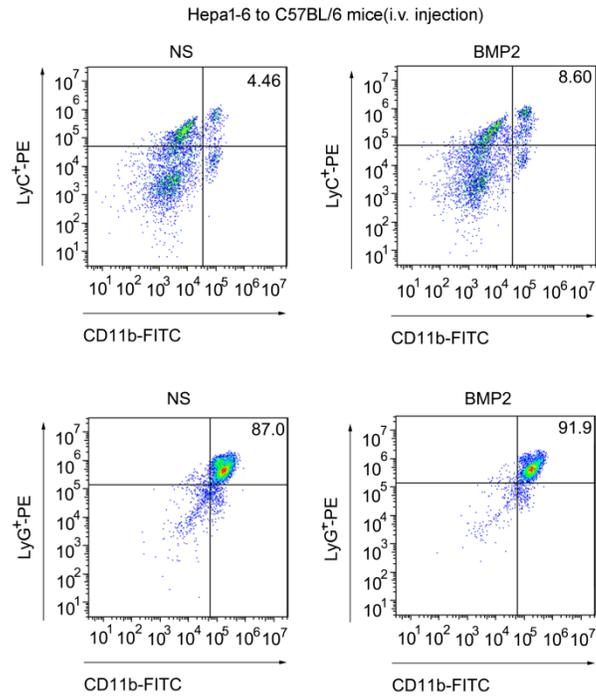
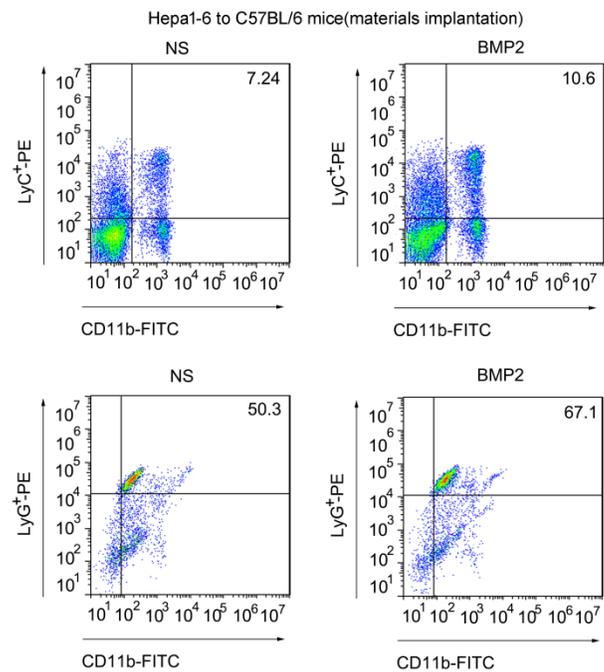


## Supplementary Material

A



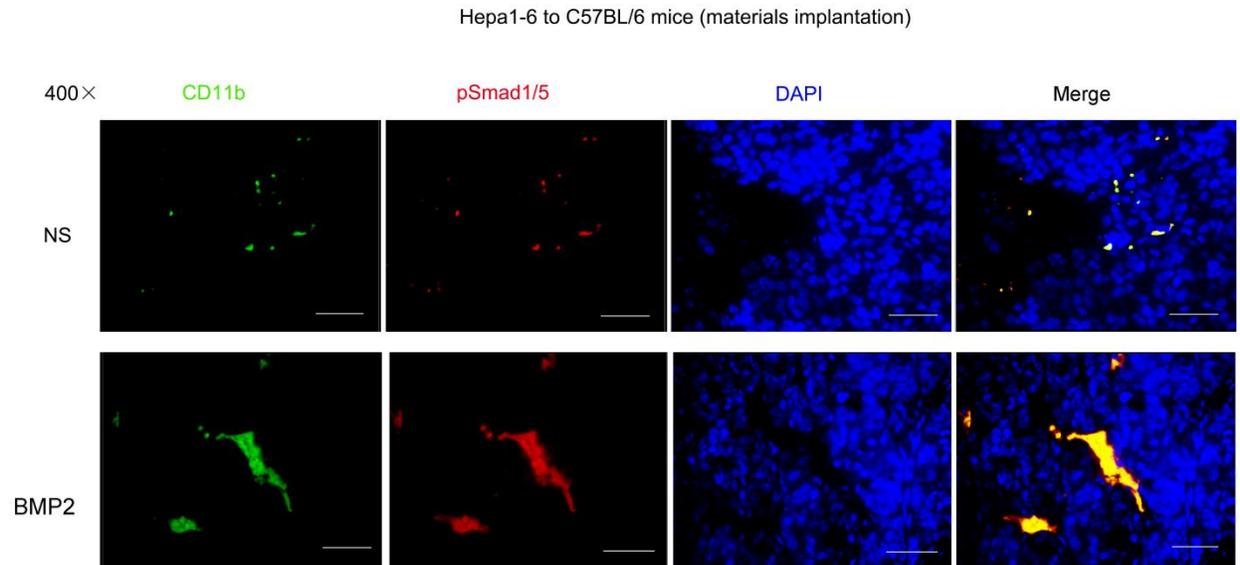
B



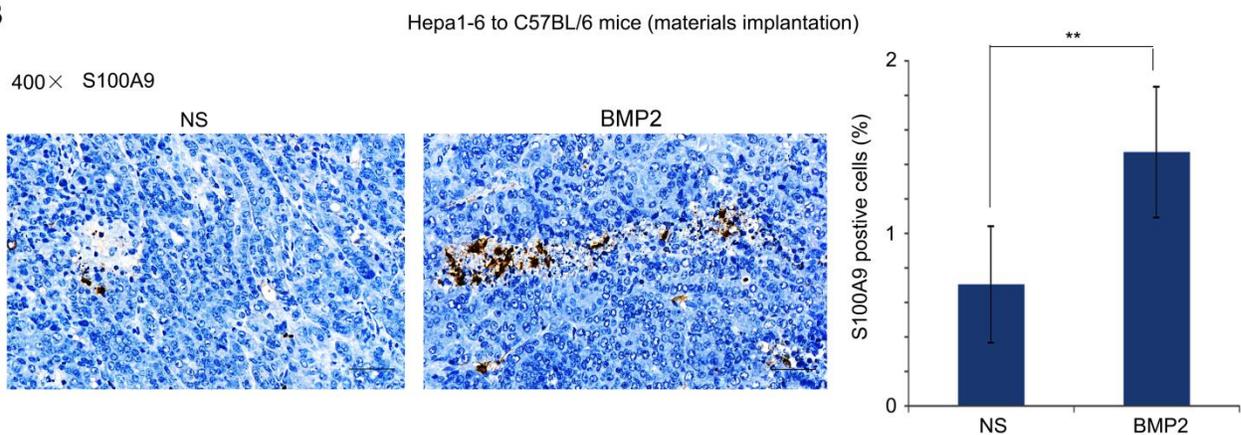
**Supplementary Figure 1. BMP2 promoted the expansion of MDSCs in peripheral blood.**

- (A) Represent flow cytometric images of monocyte derived MDSCs and polymorphonuclear derived MDSCs from rhBMP2 solution intravenously injected C57BL/6 mice.
- (B) Represent flow cytometric images of monocyte derived MDSCs and polymorphonuclear derived MDSCs from rhBMP2 collagen gels implanted injected C57BL/6 mice.

A



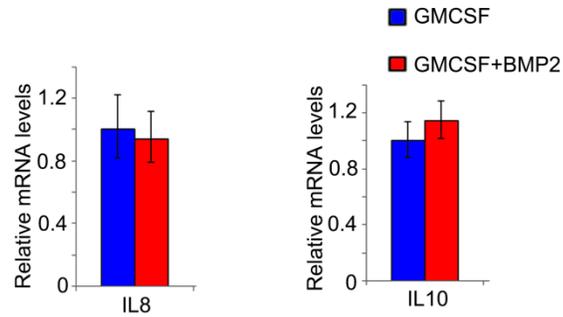
B



**Supplementary Figure 2. BMP2 promoted the infiltration of MDSCs into Hepa1-6 tumors.**

(A) Immunofluorescence images of subcutaneous Hepa1-6 tumor samples from rhBMP2 collagen gels implanted ICR mice. Blue: DAPI, Green: CD11b-FITC, Red: Smad1/5/8-TRITC. Scale bar: 100 $\mu$ m.

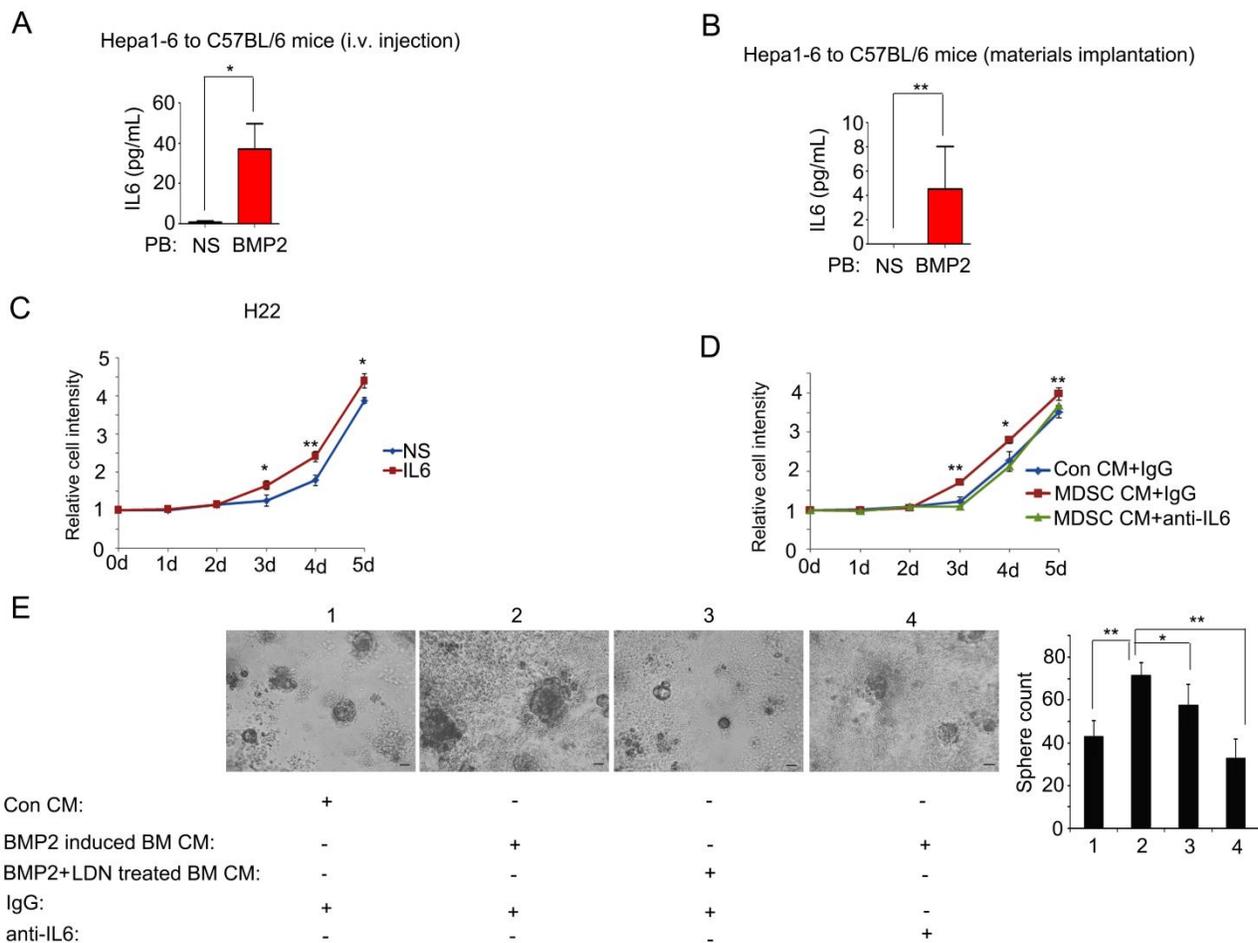
(B) Immunohistochemistry images indicated the expression of S100A9 of subcutaneous Hepa1-6 tumor samples from rhBMP2 collagen gels implanted ICR mice. Scale bar: 50 $\mu$ m. Average percentages of S100A9 positive cells of at least three fields were shown on the right. \*\*:  $P < 0.01$ .



**Supplementary Figure 3. MDSCs activated by BMP2 did not secrete IL8 or IL10.**

Comparison of relative IL8 and IL10 mRNA levels of bone marrow cells treated with BMP2. \*:

*P*<0.05, \*\*: *P*<0.01



**Supplementary Figure 4. BMP2 inducing MDSCs expansion enhanced liver cancer growth via IL6.**

(A) IL6 concentration in peripheral blood of rhBMP2 solution intravenously injected C57BL/6 mice for NS and rhBMP2 groups were compared. \*:  $P < 0.05$ , \*\*:  $P < 0.01$

(B) IL6 concentration in peripheral blood of rhBMP2 collagen gels implanted C57BL/6 mice for NS and rhBMP2 groups were compared. \*:  $P < 0.05$ , \*\*:  $P < 0.01$

(C) About 3,000 H22 cells were cultured in each well of 96 well plates with vehicle or IL6. Relative cell intensity was measured with a cell-counting kit after indicated time. \*:  $P < 0.05$ , \*\*:  $P < 0.01$

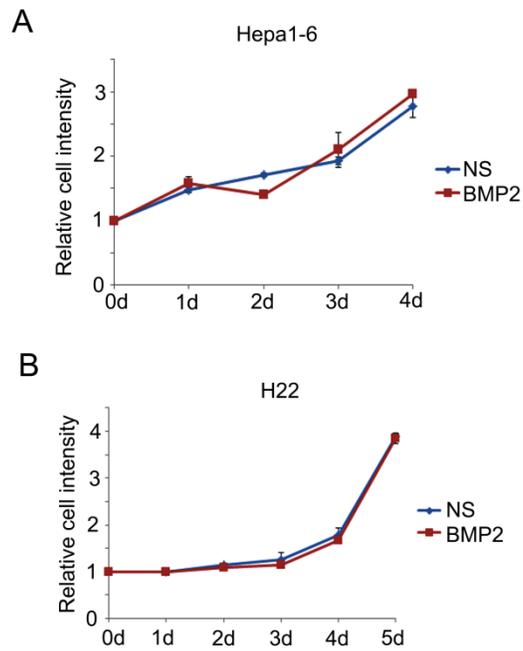
(D) About 3,000 H22 cells were cultured in each well of 96 well plates with indicated treatment.

Relative cell intensity was measured with a cell-counting kit after indicated time. \*:  $P < 0.05$ , \*\*:  $P < 0.01$

*P < 0.01*

(E) Hepa1-6 cells of different treatment were cultured in matrigel to form spheres. Photos were

taken after six days. Scale bars, 10 $\mu$ M.



**Supplementary Figure 5. BMP2 did not affect the proliferation of HCC cells directly.**

(A) About 3,000 Hepa1-6 cells were cultured in each well of 96 well plates with vehicle or BMP2.

Relative cell intensity was measured with a cell-counting kit after indicated time. \*:  $P < 0.05$ , \*\*:  $P < 0.01$

$P < 0.01$

(B) About 3,000 H22 cells were cultured in each well of 96 well plates with vehicle or BMP2.

Relative cell intensity was measured with a cell-counting kit after indicated time. \*:  $P < 0.05$ , \*\*:  $P < 0.01$

$P < 0.01$

Original gels for Fig 5C

