

Electronic Supplementary Information

Development of an Accurate and Proactive Immunomodulatory Strategy to Improve Bone Substitute Material-Mediated Osteogenesis and Angiogenesis

Figure S1. The bone regeneration of unfilled cranial defects at 6 and 12 weeks after surgery. A. Representative superficial, coronal and sagittal images of untreated cranial bone defects at 6 and 12 weeks post-surgery. B. Histological analysis of bone formation at 12 weeks by H&E and Masson's trichrome staining.

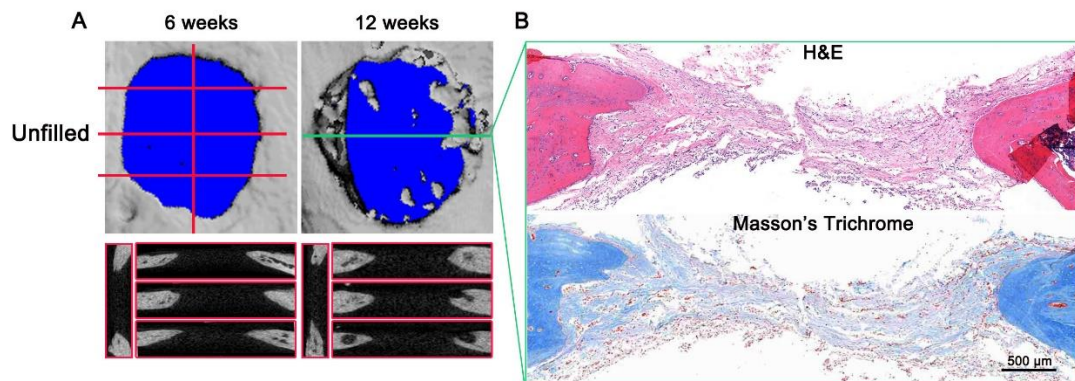


Figure S2. IL-4 treatment does not affect their osteogenic ability of BMSCs. Untreated and IL-4 (10 ng/mL) treated BMSCs were cultured in growth medium or osteogenic induction medium for 14 days. The cells were stained with Alizarin Red and quantified. Undiff: BMSCs cultured in standard medium only. Diff: osteogenic medium. n.s. no significant.

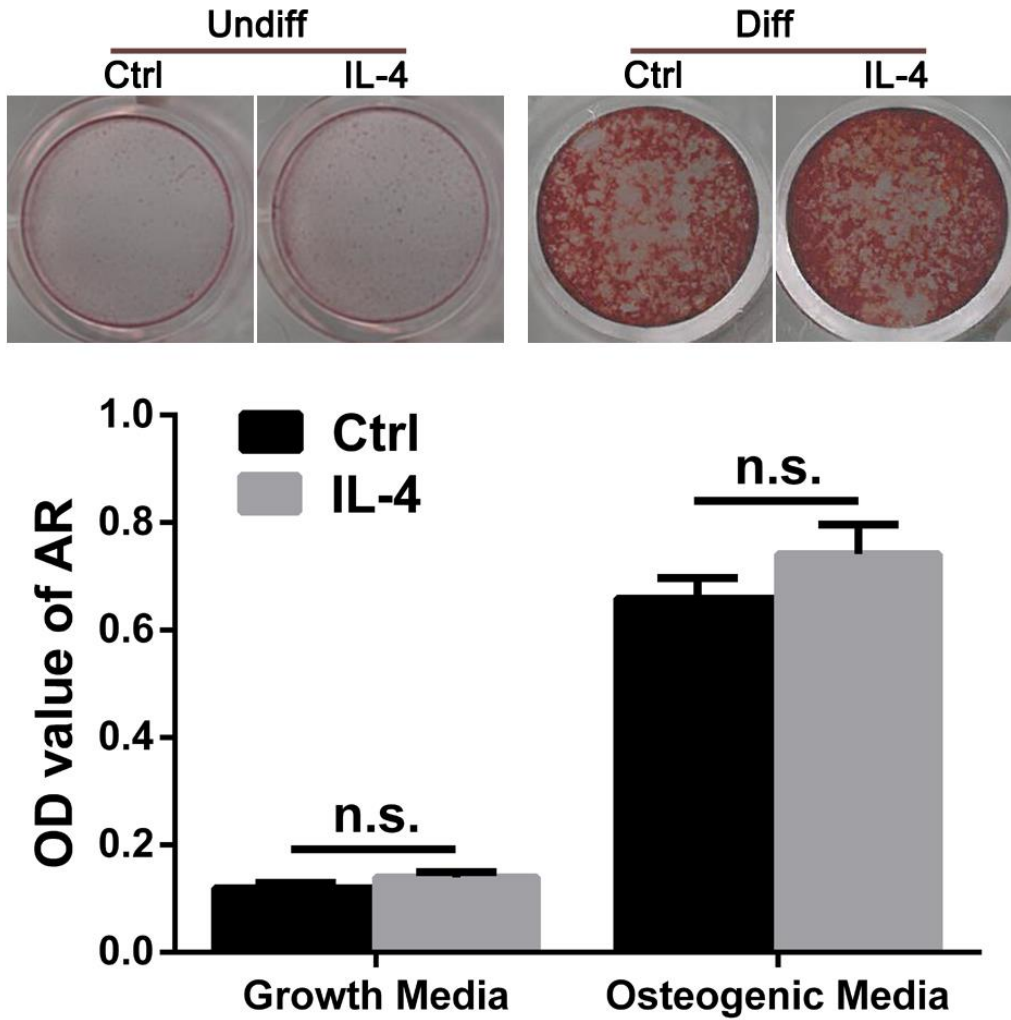


Table S1. Primer sequences used for RT-PCR.

Gene name	Sequences of primers for PCR	
	Forward or Reverse	Sequence (5'-3')
TNF- α	Forward	GTCCATTCCTGAGTTCTG
	Reverse	GAAAGGTCTGAAGGTAGG
IL-1 β	Forward	GTATGGGCTGGACTGTTTC
	Reverse	GCTGTCTGCTCATTACG
IL-6	Forward	GAGGATACCACTCCCAACAGACC
	Reverse	AAGTGCATCATCGTTGTTTCATACA
Retnl- α	Forward	CTTTCCTGAGATTCTGCCCCAG
	Reverse	CACAAGCACACCCAGTAGCA
Arg1	Forward	CAGAAGAATGGAAGAGTCAG
	Reverse	CAGATATGCAGGGAGTCACC
CD206	Forward	TACAGCTCCACGCTATGGATT
	Reverse	CACTCTCCCAGTTGAGGTACT
GAPDH	Forward	CACTCACGGCAAATTCAACGGCAC
	Reverse	GACTCCACGACATACTCAGCAC
ALP	Forward	GAAAGAGAAAGACCCCAGTTAC
	Reverse	ATACCATCTCCCAGGAACAT
COL1	Forward	CGTGGAACCTGATGTATGCT
	Reverse	ACTCCTATGACTTCTGCGTCTG
OPN	Forward	CGCATTACAGCAAACACTCAG
	Reverse	GTCATCGTCGTCGTCATCAT
Runx2	Forward	CGAAATGCCTCTGCTGTTAT
	Reverse	CGTTATGGTCAAAGTGAACTCT
BMP2	Forward	CGTCAAGCCAAACACAAACA
	Reverse	AGTCATTCCACCCCACATCA
OCN	Forward	GAACAGACAAGTCCCACACAG
	Reverse	CAGGTCAGAGAGGCAGAATG
β -actin	Forward	CCTCTATGCCAACACAGT
	Reverse	AGCCACCAATCCACACAG