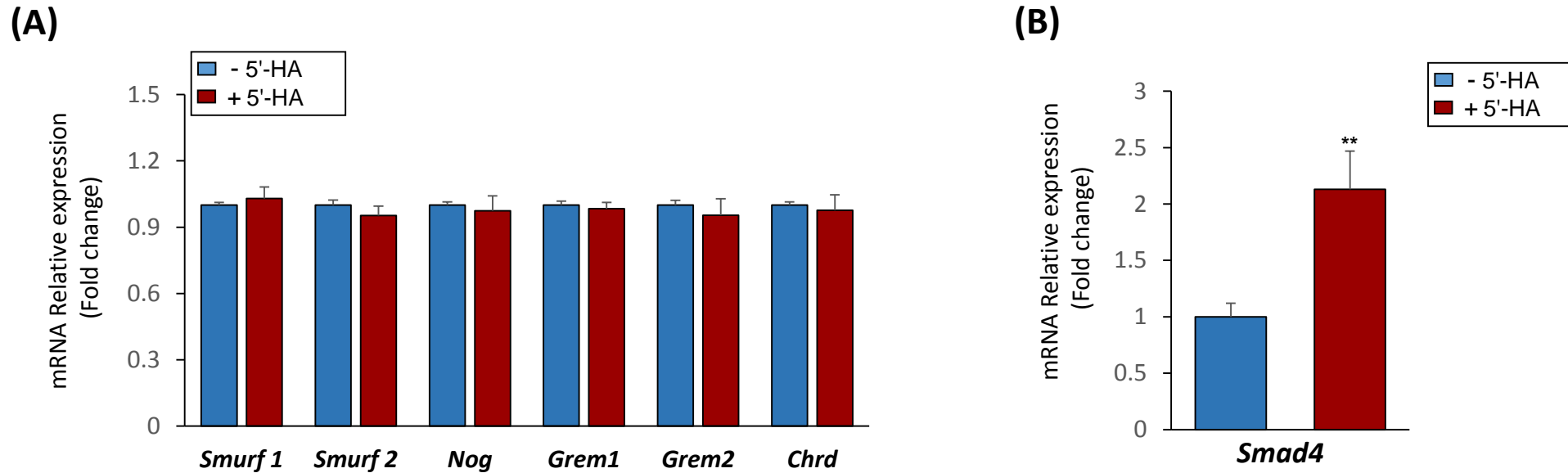


## Additional file 3: Figure S3



**Figure S3: Effect of 5'-HA on gene expression of BMPs antagonists and Smad4**

(A) 5'-HA did not affect the mRNA expression of BMPs antagonists including *Smurf1/2*, *Nog*, *Gremlin1/2* and *Chrd*, while (B) stimulating the transcription of *Smad4* gene as measured by qPCR analysis. mBMSCs cells were induced to osteoblast differentiation using BMP2 (50 ng/ml) in the absence (- 5'-HA) or the presence of 5'-HA (50  $\mu$ M) (+ 5'-HA). Each target gene was normalized to reference genes and represented as fold change over non-induced control. Values are mean  $\pm$  SD of three independent experiments, (\* $p < 0.05$ , \*\* $p < 0.005$  compared to control without 5'-HA).