

SI Guide

Brahma safeguards canalization of cardiac mesoderm differentiation

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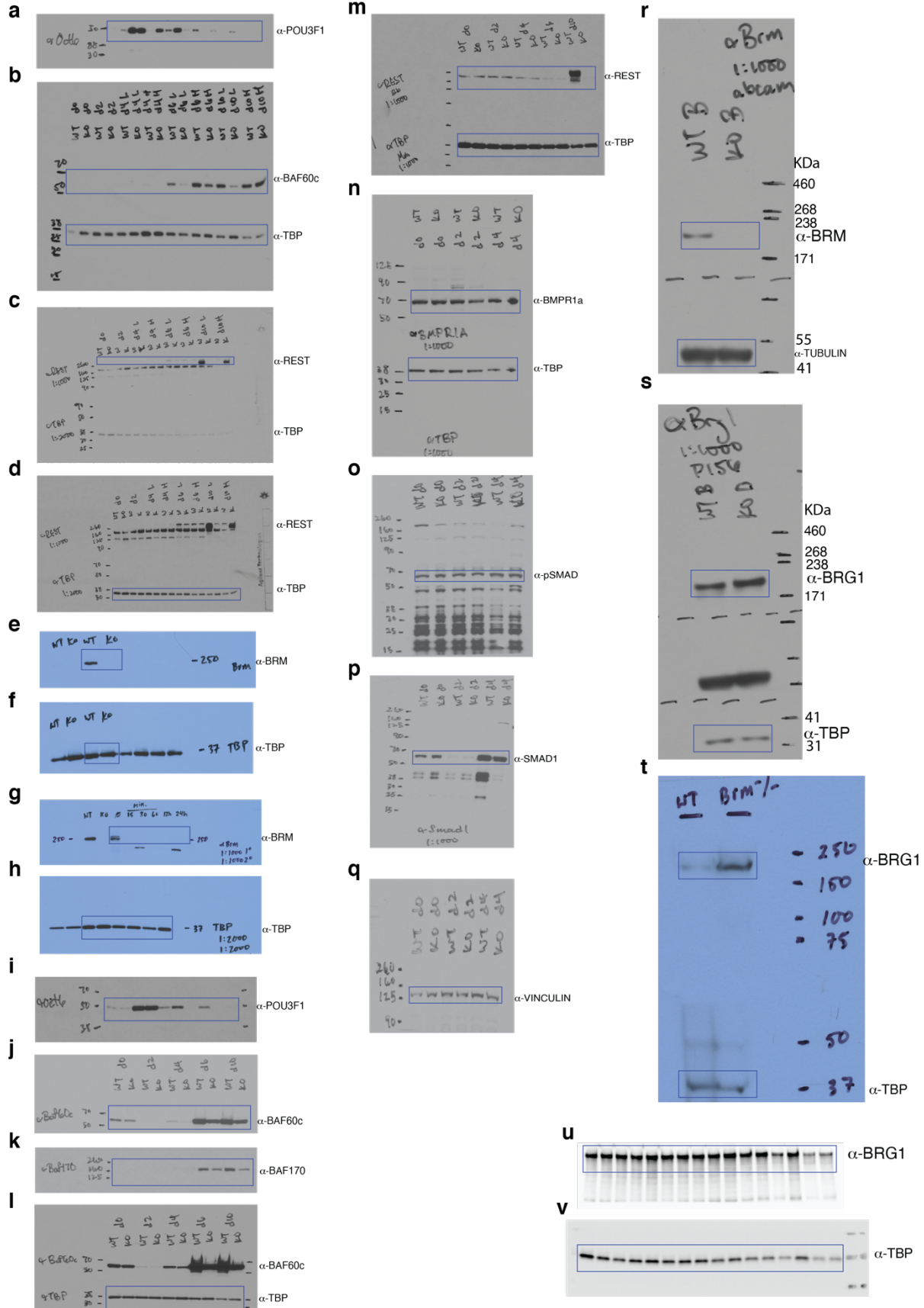
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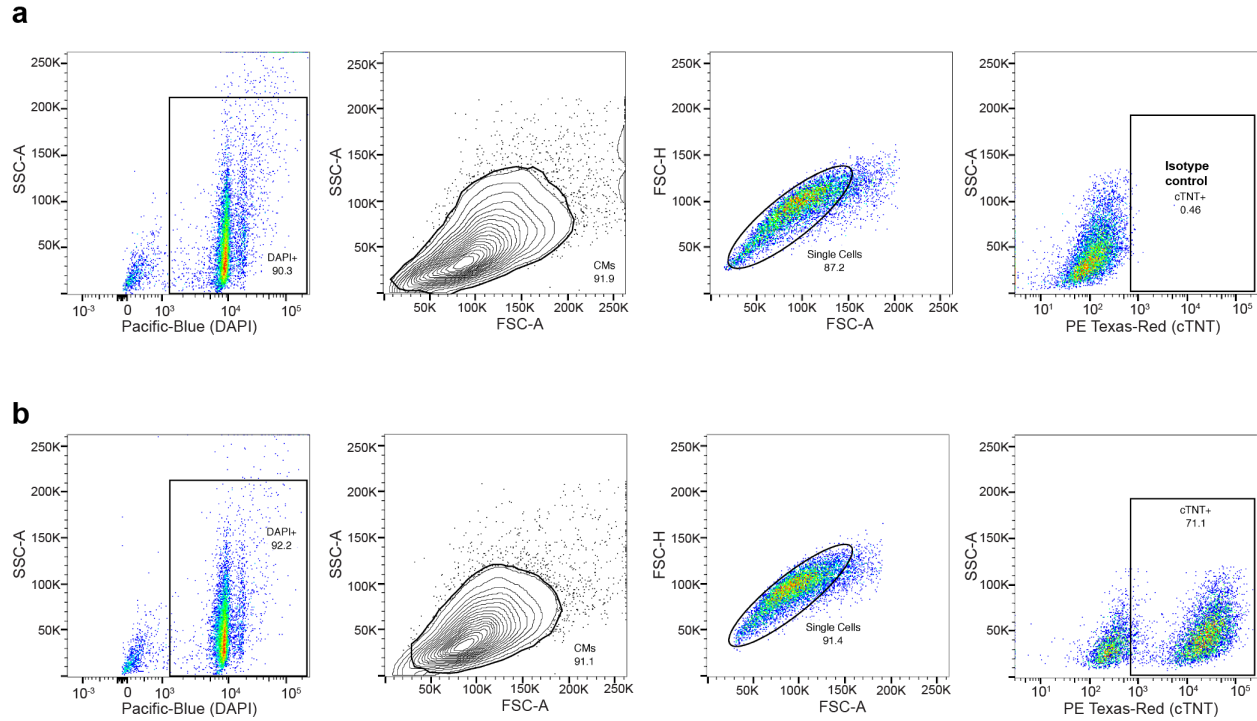
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Supplementary Figure 1: **Raw immunoblots of Fig. 3, Extended Data Figs 1c, 4g, 5i, 6g, 8e, 10c, e and 10f**. **a**, Fig. 3b α -POU3F1, **b**, Fig. 3b α -BAF60c and α -TBP serving as loading control for POU3F1 and BAF60c, **c**, Fig. 3b α -REST and **d**, Fig. 3b α -TBP serving as loading control for REST. The immunoblot in d is a higher exposure of immunoblot in c. **e**, Extended Data Fig. 1c α -BRM, **f**, Extended Data Fig. 1c α -TBP as loading control for BRM **g**, Extended Data Fig. 4g α -BRM, **h**, Extended Data Fig. 4g α -TBP as loading control for BRM, **i**, Extended Data Fig. 5k α -POU3F1, **j**, Extended Data Fig. 5k α -BAF170, **k**, Extended Data Fig. 5k α -BAF60c, **l**, Extended Data Fig. 5k α -TBP as loading or sample processing control for POU3F1, BAF170 and BAF60c immunoblots, **m**, Extended Data Fig. 6g α -REST and α -TBP as loading control. **n**, Extended Data Fig. 8e α -BMPR1 and α -TBP as loading control, **o**, Extended Data Fig. 8e α -pSMAD, **p**, Extended Data Fig. 8e α -SMAD1, **q**, Extended Data Fig. 8e α -VINCULIN as loading or sample processing control for pSMAD and SMAD1, **r**, Extended Data Fig. 10c adult mouse brain α -BRM and α -TUBULIN as loading control, **s**, Extended Data Fig. 10e adult mouse brain α -BRG1 and α -TBP as loading control, **t**, Extended Data Fig. 10e adult mouse heart α -BRG1 and α -TBP as loading control. **u**, Extended Data Fig. 10f α -BRG1 immunoblot and **v**, Extended Data Fig. 10f α -TBP as loading control immunoblot on differentiated cells.



Supplementary Figure 2: **a-b**, Gating strategy for FACS using isotype control IgG (**a**) or Cardiac Troponin T (**b**)

Supplementary Video 1: Video of WT cells showing beating cardiac myocytes at D10 of differentiation

Supplementary Video 2: Video of homozygous BRM KO clone 1 cells at D10 of differentiation

Supplementary Video 3: Video of homozygous BRM KO clone 2 cells at D10 of differentiation

Supplementary Video 4: Video of homozygous BRM KO clone 3 cells at D10 of differentiation

Supplementary Video 5: Video of heterozygous BRM KO clone 1 cells at D10 of differentiation showing beating cardiac myocytes

Supplementary Video 6: Video of heterozygous BRM KO clone 2 cells at D10 of differentiation showing beating cardiac myocytes

Supplementary Video 7: Quasi-Waddington diagram video of WT cells at normal BMP4 concentration from D0 to D10 of cardiac differentiation

Supplementary Video 8: Quasi-Waddington diagram video of homozygous BRM KO cells at normal BMP4 concentration from D0 to D10 of cardiac differentiation

Supplementary Video 9 : Quasi-Waddington diagram video of WT cells at high BMP4 concentration from D0 to D10 of cardiac differentiation

Supplementary Video 10: Quasi-Waddington diagram video of homozygous BRM KO cells at high BMP4 concentration from D0 to D10 of cardiac differentiation

Supplementary Video 11: Bifurcation analysis of the model showing cell phase portraits from Day 0 to Day 10 for WT cells at normal BMP4 concentration

Supplementary Video 12: Bifurcation analysis of the model showing cell phase portraits from Day 0 to Day 10 for homozygous BRM KO cells at normal BMP4 concentration

Supplementary Table 1: Differential gene expression between WT and homozygous BRM KO cells at D4 of cardiac differentiation

Supplementary Table 2: Markers genes enriched in the individual clusters of Fig 1j consisting of both WT and BRM KO cells at D4, D6 and d10 of cardiac differentiation.

Supplementary Table 3: Differential gene expression between WT and homozygous BRM KO embryonic stem cells.

Supplementary Table 4: Differentially enriched ATACseq peaks between WT and homozygous BRM KO cell at D4, D6 and D10 of cardiac differentiation

Supplementary Table 5: BRM-3xFLAG tag ChIPseq peaks at D4, D6 and D10 of cardiac differentiation

Supplementary Table 6: Markers genes enriched in the individual clusters of Fig 3c lower panel consisting of both WT and homozygous BRM KO cells induced with normal and high BMP4 concentrations at D4, D6 and d10 of cardiac differentiation.

Supplementary Table 7 : Quality control parameters for single cell RNAseq data processing pipelines showing various QC and cutoff parameters.