

Supplemental Figure 1. Kinetics of ENDM1 and ENDM2 expression on ES cell-derived populations.

ES cells were differentiated in endoderm, mesoderm, or ectoderm inducing conditions for different times and analyzed by flow cytometry for CD25-Foxa3 and either (A) ENDM1 or (B) ENDM2.

Supplemental Figure 2. Characterization of ES cell-derived ENDM1⁻ and ENDM2⁻ cells.

ES cells were differentiated towards endoderm, sorted, and placed in hepatocyte inducing conditions as described in Figure 3. (A) Intracellular flow cytometry measuring the proportion of CD4-Foxa2⁺ and albumin expressing cells in the CD4⁺CD25⁻, ENDM1⁻ and ENDM2⁻-derived populations shown in Figure 3A. (B) Intracellular flow cytometry measuring the proportion of CD4-Foxa2⁺ and Afp expressing cells in the CD4⁺CD25⁻, ENDM1⁻ and ENDM2⁻-derived populations shown in Figure 3A.

Supplemental Figure 3. Analysis of endoderm specific monoclonal antibodies on the ES line F1(v6.5).

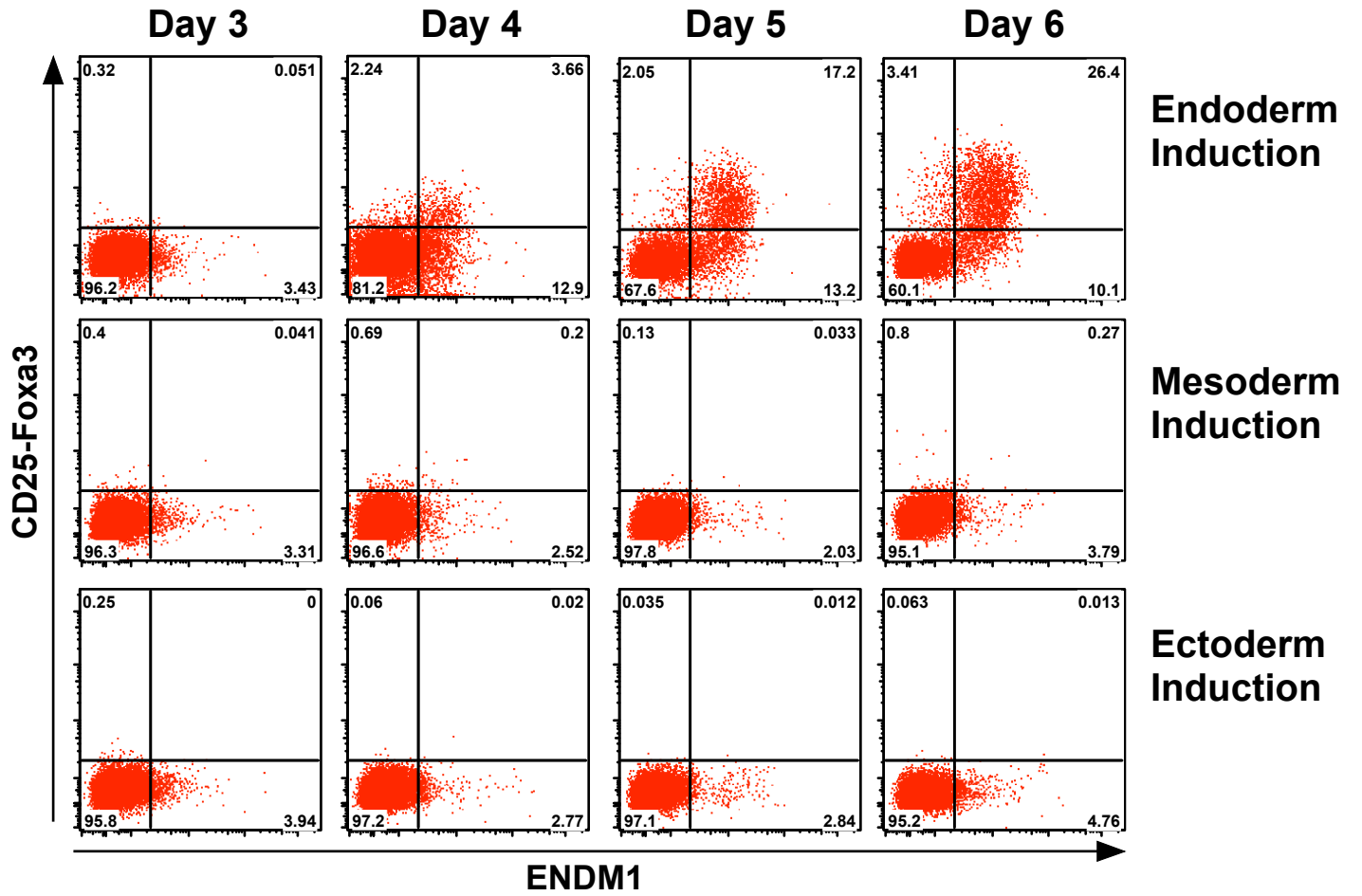
Staining patterns of ENDM1 and ENDM2 on the ES cell line F1(v6.5) differentiated in endoderm, mesoderm, or ectoderm inducing conditions for 6 days. Histograms of staining analyzed by flow cytometry are shown.

Supplemental Figure 4. Expression of ENDM1 and ENDM2 on embryonic and extra-embryonic tissue of the mouse embryo.

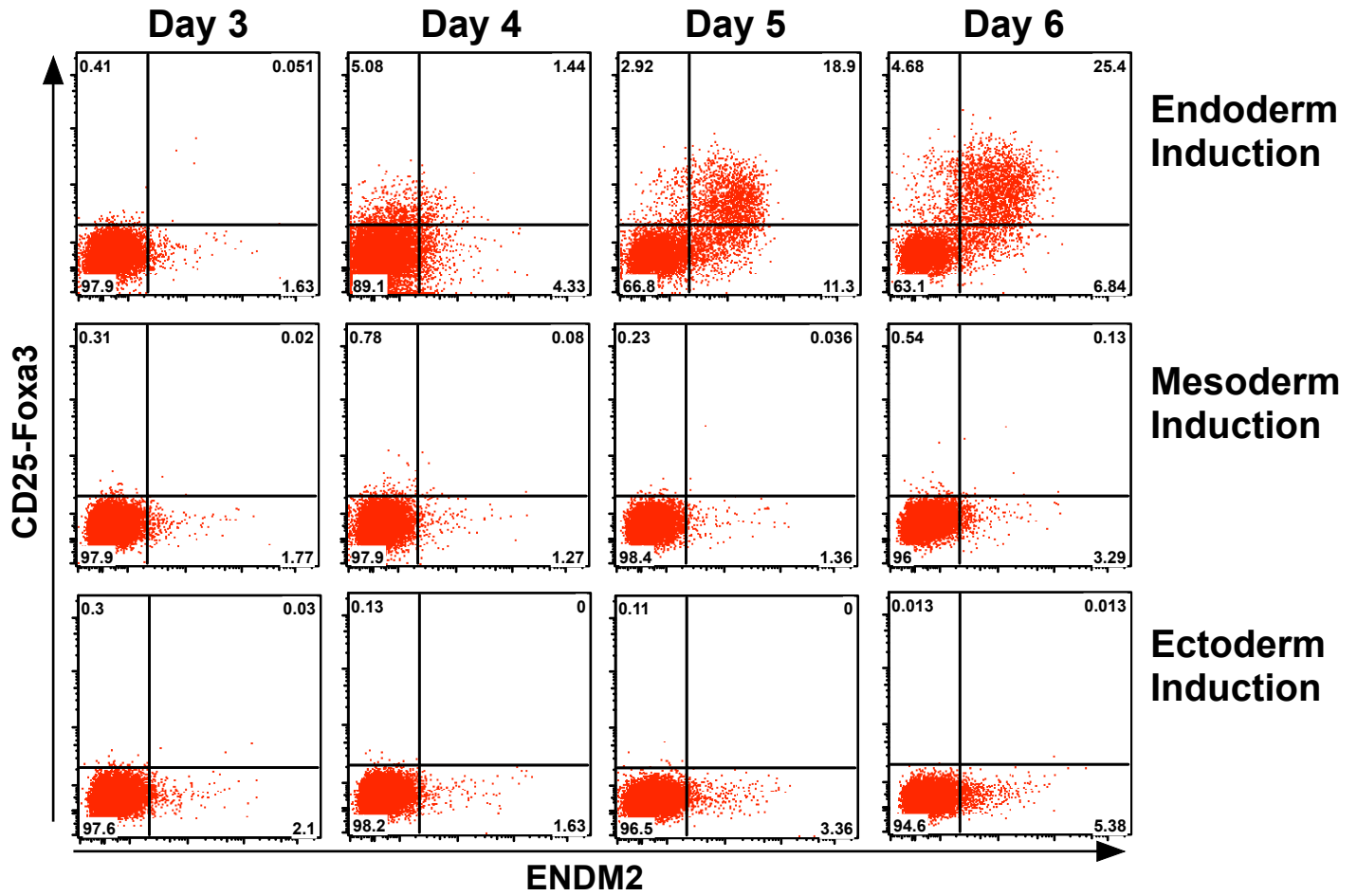
Day 8.25 Mouse embryos were dissected into embryonic or extra-embryonic regions, dissociated and analyzed by flow cytometry for ENDM1, ENDM2, EpCAM and CXCR4. (A) Expression of EpCAM versus ENDM1 or ENDM2 on SSC^{high} (granular) or SSC^{low} (non-granular) extra-embryonic cells. (B) CXCR4 versus ENDM1 or ENDM2 on embryonic cells and on SSC^{high} (granular) extra-embryonic endoderm.

Supplemental Table 1. Oligonucleotide sequences of real time PCR primers.

Supplemental Figure 1A

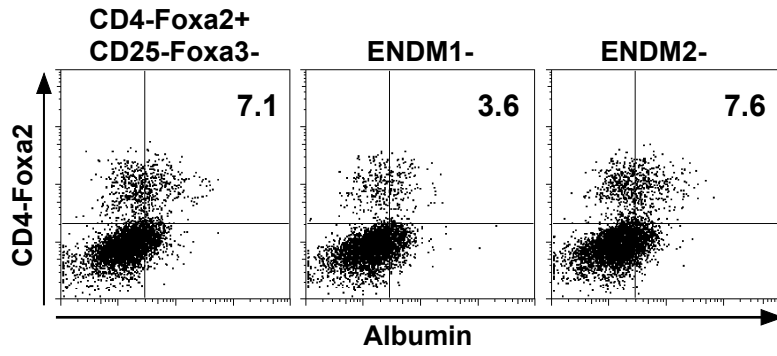


Supplemental Figure 1B

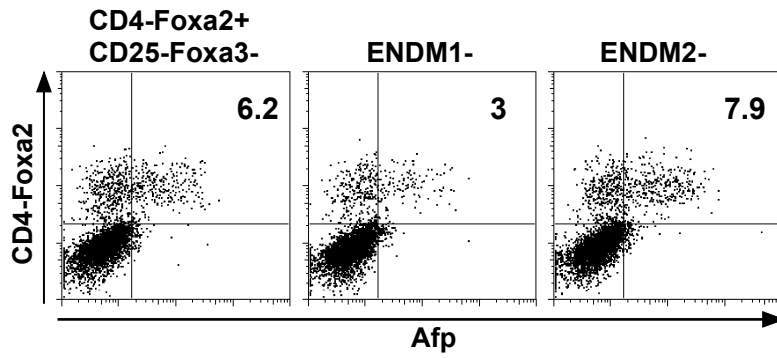


Supplemental Figure 2

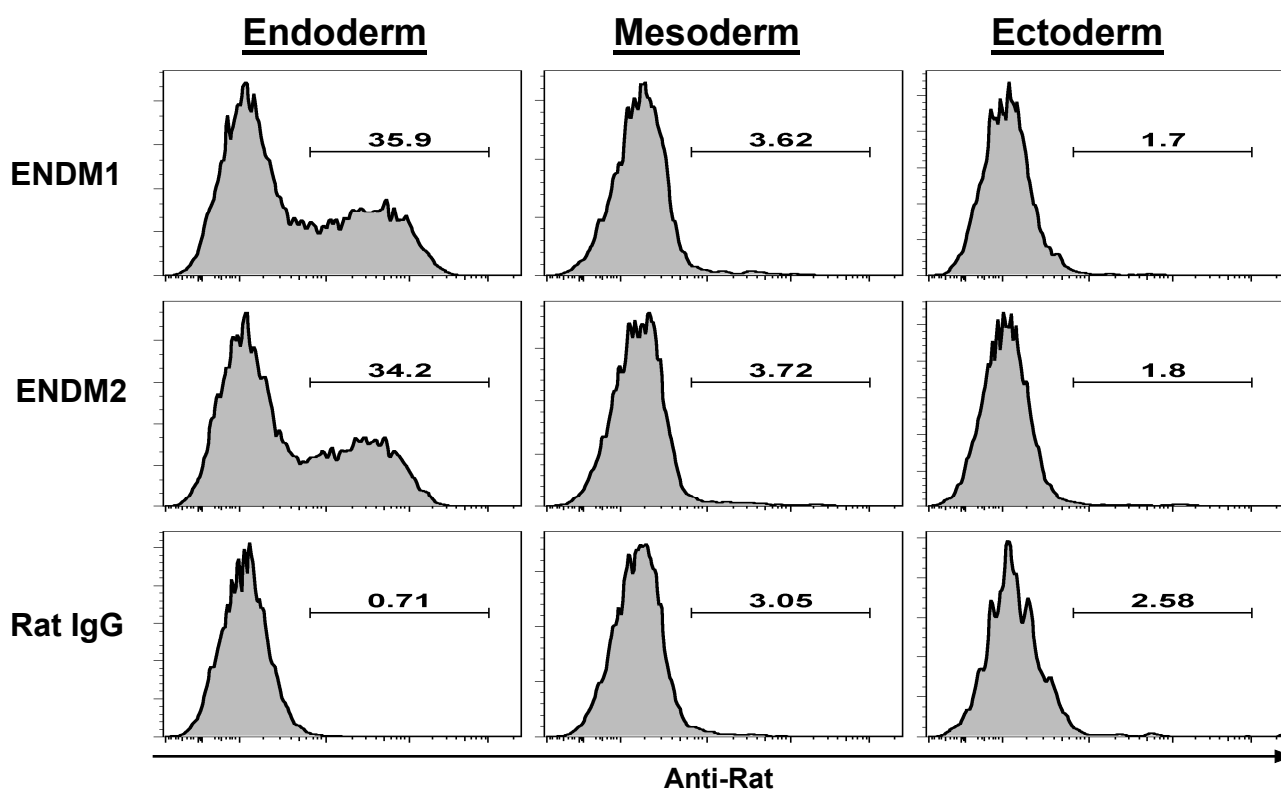
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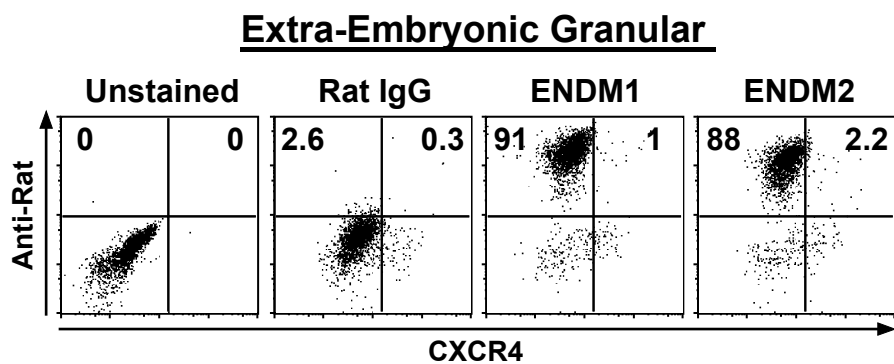
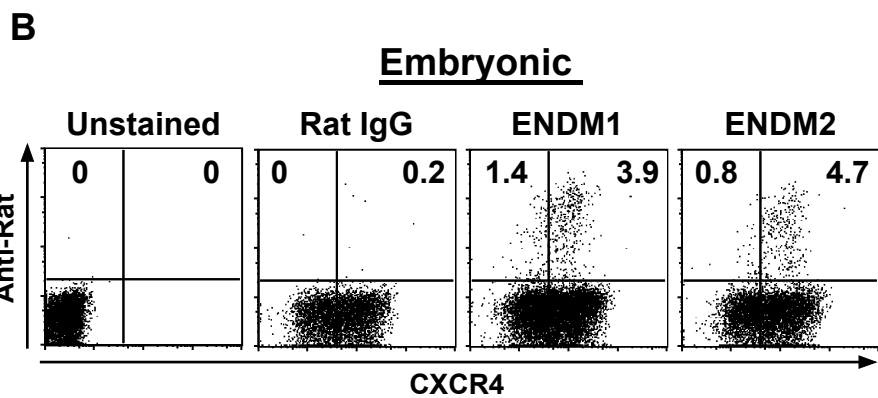
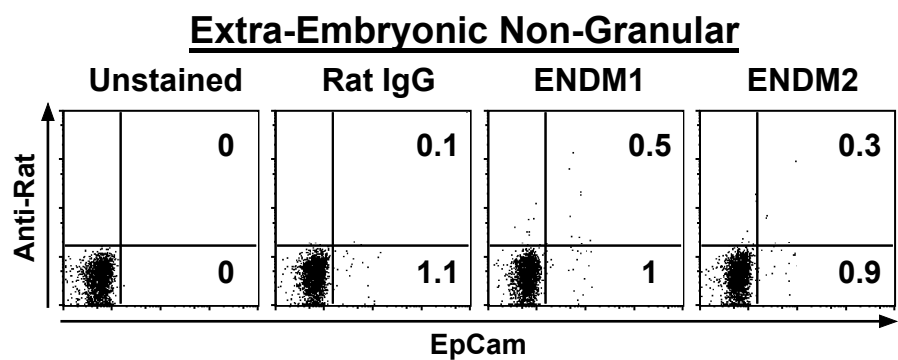
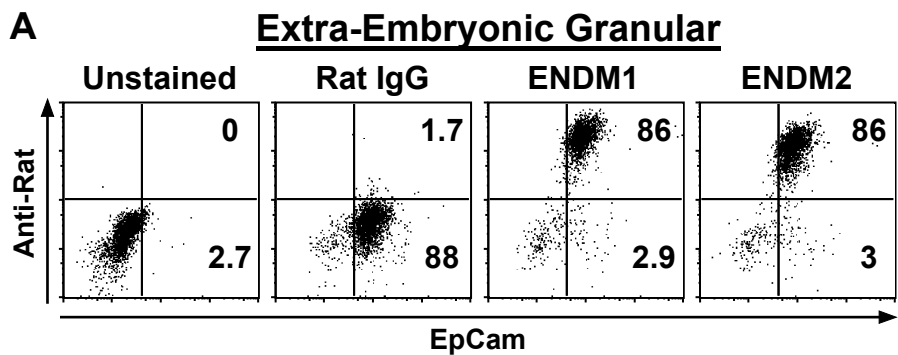
B



Supplemental Figure 3



Supplemental Figure 4



Supplemental Table 1

Gene	Forward	Reverse
Afp	GGA ATG AAG CAA GCC CTG TGA ACT	AAC TGG TGA TGC ATA GCC TCC TGT
Amn	GGG TTT CCG AAA TCC GAT	CGA ACT TGG TAT CAA TGT CCA
Apoc2	CCA TGA GCA CTT ACG CAG GCA TTT	CGC GGT GTC TGT CAT CAG GTT T
Cdx1	GCC AAG GAG CGC AAA GTA AAC AAG AAG	AGG CCA GCA TTA GTA GGG CAT AGA
Cubn	AAT GTG GAG TAG CTG AAT CGG GAG AG	TTT GAT GGC GTG GGC AGA GAT G
Foxa1	TGT TAG GCC CAC CAC ACG AGT TTA	GGT GAA AGC AAA GGG CTC CAA TGT
Foxa3	GGA ACA TGT TTG AGA ACG GCT	CGA TGT GGC GCT GTT TCC TTT
Foxc1	ATT CCC GGC ACT CTT AGA GCC AAA	AGA TTC TGT TCG CTG GTG TGA GGA
Foxg1	CGC CAG CAG CAC TTT GAG TTA CA	GG TTG TTG CCC AGC GAG TTT
HNF4a	AAC CAC GCT ACT TGC CTT TGC T	TCT GAT GGG ACA CAG CCT ACT TCT
HNF6	TTA CAG CAT CCC ACA GGC CAT CTT	TCT CCC GAC CCG ACT TGA GTT T
Meox1	AGC GTC TTG TGT TCT CCA AGG	ATG TGT GTG AAC CTG GGA GGT
Otx2	GCA GCA GAA TGG AGG TCA GAA CAA AG	AAT GGT TGG GAC TGA GGT ACT AGA GG
Pax6	GTG GAC ACA GCA GTT GGG TAT TCA	GAT ACC GTG CCT TCT GTA CGC AAA
Pyx	CTT GCA TGT TTG GTT TAA GAA GAG GGC A	AGG GAC AGG GAA ATG AAC ACA CAC
Sox17	TGT AAA GGT GAA AGG CGA GGT	GCA TCT TGC TTA GCT CTG CGT
Sox7	AAT GAA TGA CTG CCC AAG GAC CCA	ACC ATC TTG CCA GAC CAA AGG TGA
Tbx1	CCA TGT TGT CTA TGT GGA CCC TCG AAA	GCA GTG AAG CGT GTC TCC TCA AAC
Tdh	GAG TTC CTT TAC ACA CTG CCT TTG TCC	GCC ACC ACC ACT CAG GAC TTC ATT T