**Fig. S1** Derivation of Immunity- and Matrix-Regulatory Cells (IMRCs) from human embryonic stem cells (hESCs).

**a** UCMSCs’ expression of MSC-specific surface markers was determined by flow cytometry. Isotype control antibodies were used as controls for gating. The UCMSCs are CD34⁻/CD45⁻/HLA-DR⁻/CD90⁺/CD29⁺/CD73⁺/CD105⁺ cells. **b** Quantification of flow cytometry for IMRCs and UCMSCs. **c** Representative staining of IMRCs after they were induced to undergo adipogenic differentiation (Oil Red O), osteogenic differentiation (Alizarin Red), and chondrogenic differentiation (Alcian Blue). Scale bars, 100 µm.