Stem cell model for early human embryo development

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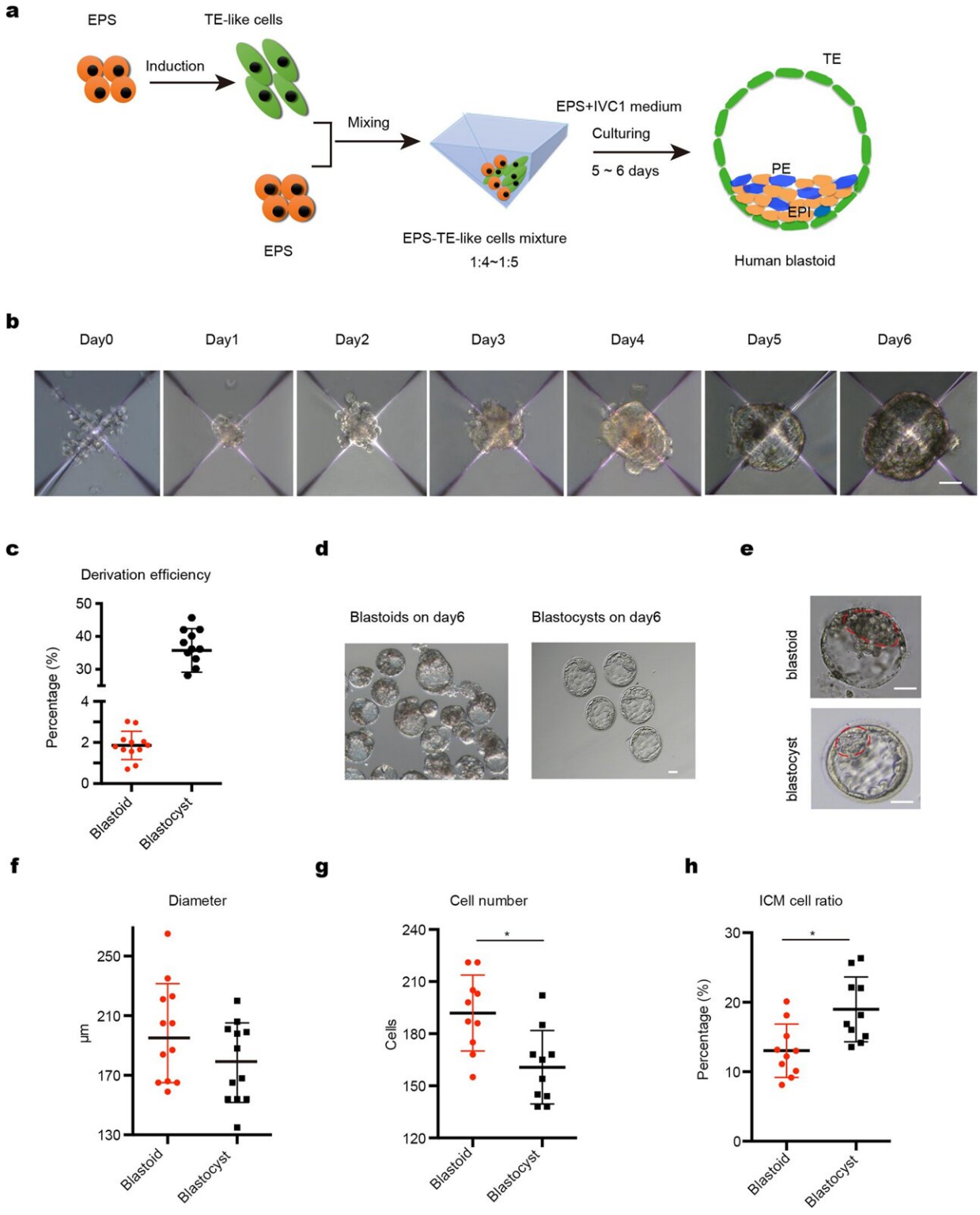

Fig. 1: Induction of human blastoids under 3D two-step condition. a Schematic of human blastoid formation. EPS cells were firstly induced to TE-like cells, and

then TE-like cells were mixed with EPS cells and seeded together to AgreeWell on day 0. The aggregates further differentiated and organized into a human EPS-blastoid. b Phase-contrast images of human aggregates in the indicated days showing the formation of human blastoids from day 0 to day 6. Scale bar = 5 μm. c Derivation efficiency of human blastoids is about 1.9% that significantly lower than the developmental efficiency of human blastocysts. d Phase-contrast image of human blastoids on day 6, Scale bar = 50 μm. e Phase-contrast image of human EPS-blastoid (upper) and human blastocyst (lower). Red line indicated inner cell mass (ICM) of the structure and the outer layer cells represented trophoblast cells (TE). Scale bar = 50 μm. f–h Mean diameter (f), total cell number (g), and ICM cell ratio (h) were quantified between human EPS-blastoids and blastocyst. n = 30 EPS-blastoids, n = 30 blastocyst. Data in c, data are means ± SD (n = 12 blastoids). **P 0.05. Data in f and g, data are means ± SD (n = 12 blastoids). *P