

Three-dimensional induced pluripotent stem-cell models of human brain angiogenesis

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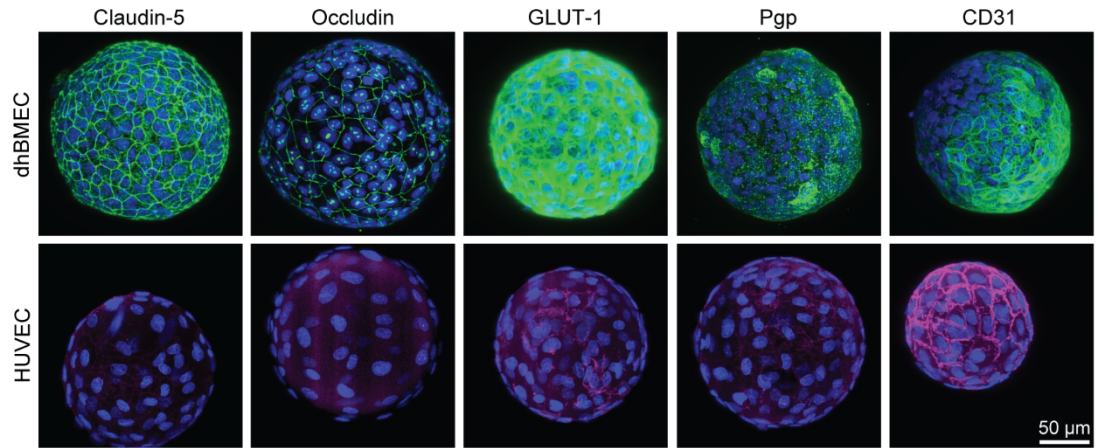
SUPPLEMENTARY INFORMATION

Figure S1. Comparison of protein expression between dhBMECs and HUVECs.

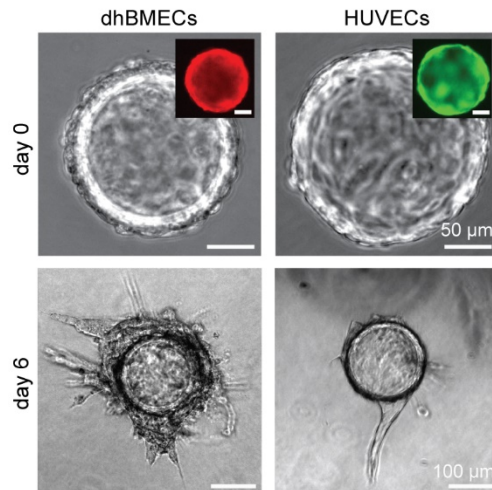
Figure S2. Comparison of angiogenesis on beads with confluent monolayers of dhBMECs or HUVECs.

Figure S3. Individual contributions of VEGF and wnt7a to angiogenic behavior.

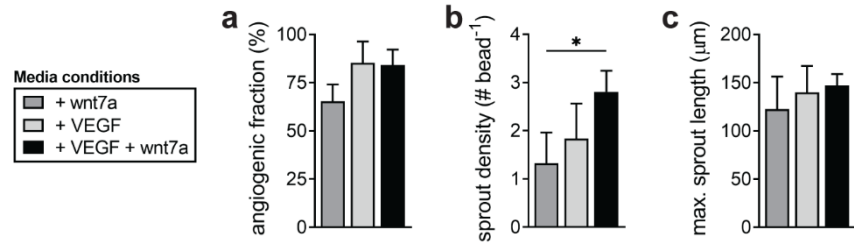
Table S1. Antibodies used in this study.



Supplemental Figure S1. Comparison of protein expression between dhBMECs and HUVECs. Beads were coated with dhBMECs or HUVECs and stained for various BBB and endothelial markers. HUVEC beads share expression of CD31 with dhBMEC beads, but do not express other canonical BBB proteins.



Supplemental Figure S2. Comparison of angiogenesis on beads with confluent monolayers of dhBMECs or HUVECs. Beads display identical appearances before embedding within hydrogel. After 6 days, HUVECs display lower sprout density but higher sprout length, than dhBMECs.



Supplemental Figure S3. Individual contributions of VEGF and wnt7a to angiogenic behavior. For each condition dhBMEC beads were embedded within 6 mg mL⁻¹ collagen I hydrogels and then exposed to basal media + 20 ng mL⁻¹ bFGF with additional: (1) 50 ng mL⁻¹ wnt7a, (2) 50 ng mL⁻¹ VEGF, or (3) 50 ng mL⁻¹ VEGF + 50 ng mL⁻¹ wnt7a. (a-c) Angiogenic fraction, sprout density and maximum sprout length quantified across conditions on day 6. Data obtained from N = 5 rounds of the bead assay from unique differentiations, with greater than 5 technical replicates per differentiation. * p < 0.05.

Supplemental Table S1. Antibodies used in this study.

Antibody	Vendor	Species	Cat. No	Dilution
Occludin	Invitrogen	Rabbit	40-4700	1:100
Claudin-5	Invitrogen	Mouse	35-2500	1:200
GLUT1	Abcam	Rabbit	115730	1:200
P-gp	Sigma	Mouse	P7965	1:100
CD31	ThermoFisher	Rabbit	RB-10333	1:25
FGFR2	R&D	Mouse	MAB684	1:100
VEGFR2	R&D	Mouse	MAB3572	1:100
GPR124	R&D	Mouse	MAB8896	1:100