



**Supplementary Figure S1 Extended *in vitro* embryo culture.** (A) Brightfield images of embryo morphology during culture, 6–12 days post-fertilisation (dpf) and corresponding images of 12 dpf outgrowth stained for POU5F1 (green) and GATA6 (red), shown as merge and single channels. (B) Brightfield images show culture progression of embryo from 6 to 12 dpf. Epiblast-like, inner cell mass (ICM)-derived embryo portion (outlined in blue) can be distinguished from remaining trophoblast (TE)-derived embryo segment at 12 dpf. (C) Developmental progression of representative embryos during culture from 6 to 12 dpf. Top panel shows embryo with good morphology. Embryo remained attached and viable during the extended culture. Bottom panel shows embryo with poor morphology and poor developmental progression. Signs of cell degeneration and necrosis can be observed. Embryo detached between 10 and 12 dpf. Scale bars are 50  $\mu$ m.