**FIGURE S1**

A. Sanger sequencing chromatograms showing the WT and KO alleles with a 7bp deletion.

B. Bar graph showing relative expression levels in WT and KO conditions. The graph indicates no significant difference (ns).

C. Immunofluorescence images comparing WT and KO hESCs for α-actinin, MYOM1, and their merge.

D. Light micrographs of WT and KO hESCs showing cell morphology.

E. Histological sections illustrating different germ layers: Ectoderm, Mesoderm, and Endoderm with specific features like neural rosettes, cartilage, and gut tube.