

Supplemental Figures and Legends

Supplementary Fig. S1 Expression of OCT4 in NCCIT cells under normoxia and hypoxia. Immunocytochemical staining of the OCT4 protein in NCCIT cells is shown. DAPI, blue; OCT4, red; Merged, purple.

Supplementary Fig. S2 Effect of increasing EGFP-SUMO1gg concentrations on endogenous OCT4 protein levels in NCCIT cells under normoxia.

Supplementary Fig. S3 Transcriptional expression levels of endogenous SENP1 in human embryonic stem (hES), NCCIT, and NT2 cells by a quantitative real-time PCR analysis. Three individual experiments were performed. ** $P < 0.01$.

Supplementary Fig. S4 Effect of SENP1 on endogenous OCT4 protein stability in NCCIT cells using a Western blotting analysis. The endogenous OCT4 protein level in Empty- or HA-SENP1-NCCIT cells under cycloheximide (CHX) treatment (100 $\mu\text{g/ml}$, 12 h) is shown.

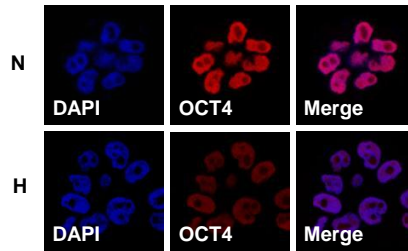
Supplementary Fig. S5 Effects of hypoxia and SENP1 on the viability of NCCIT cells using a WST-1 assay. A, Effect of normoxia and hypoxia on the viability of Empty- and HA-SENP1-NCCIT cells. B, Viability of Empty- and HA-SENP1-NCCIT cells under

normoxia (21% O₂) and hypoxia (1% O₂). Three individual experiments were performed for each experimental condition.

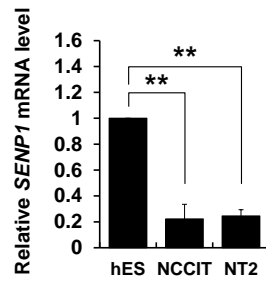
Supplementary Fig. S6 Expressions of HIF-1 α , HIF-2 α , and OCT4 in pluripotent human embryonic stem (hES) and NCCIT cells. A, Expressions of HIF-2 α and OCT4 proteins in hES cells under hypoxia (left panel). Quantitative results are shown (right panel). B, Expressions of HIF-1 α , HIF-2 α , and OCT4 proteins in NCCIT cells under hypoxia and CoCl₂ treatment (50 and 100 μ M, for 12 h) analyzed by Western blotting (left panel). Quantitative results are shown (right panel).

Supplementary Fig. S7 A, Effect of hypoxia on the SENP1 expression level in NCCIT cells (Western blot analysis). B, Effect of hypoxia on the mRNA expression level of *RSUME* in NCCIT cells. *RSUME* mRNA levels of NCCIT cells under hypoxia for various time periods were analyzed by a quantitative real-time PCR. Three individual experiments were performed.

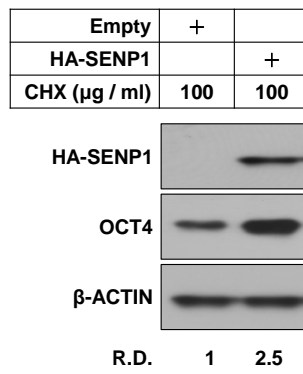
Supplementary Fig. S1



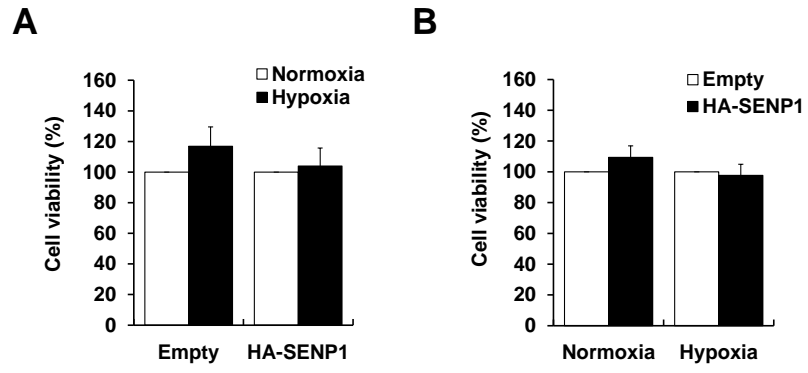
Supplementary Fig. S3



Supplementary Fig. S4

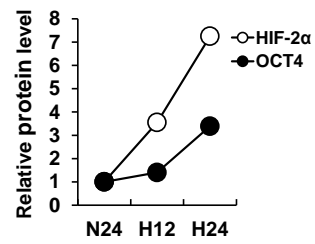
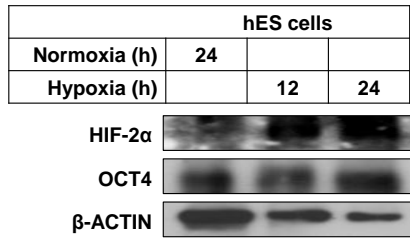


Supplementary Fig. S5

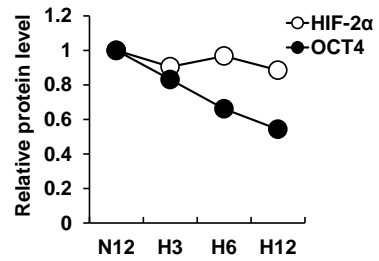
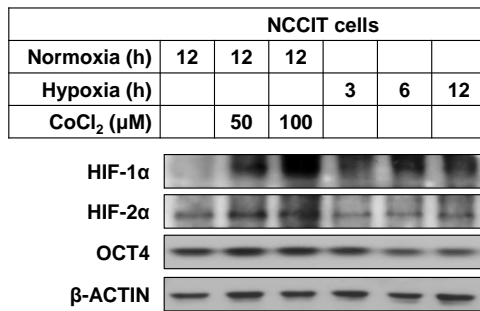


Supplementary Fig. S6

A

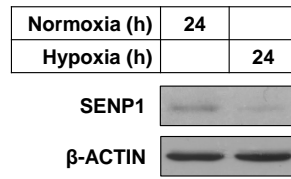


B



Supplementary Fig. S7

A



B

