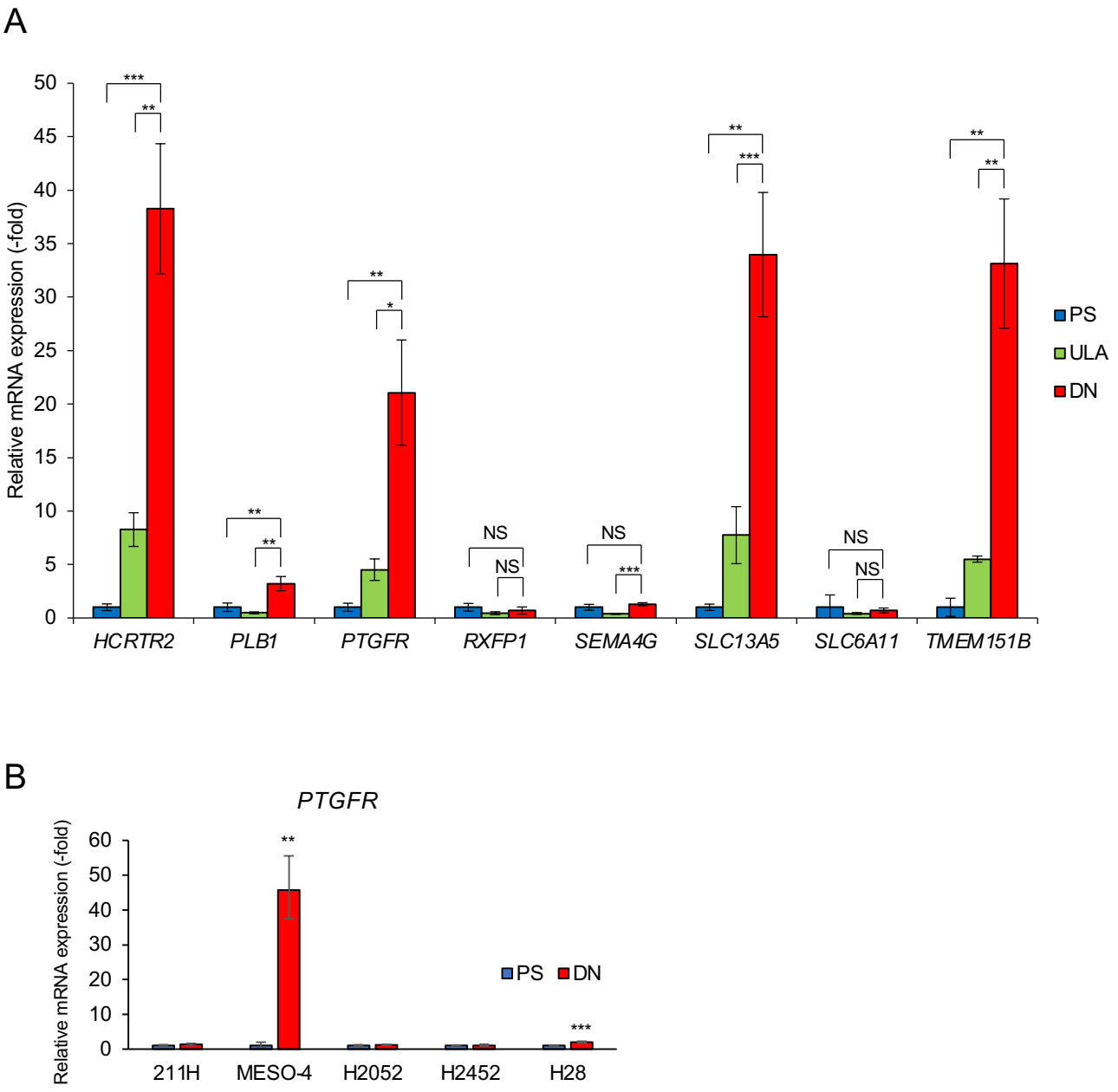
Supplementary Fig. 1



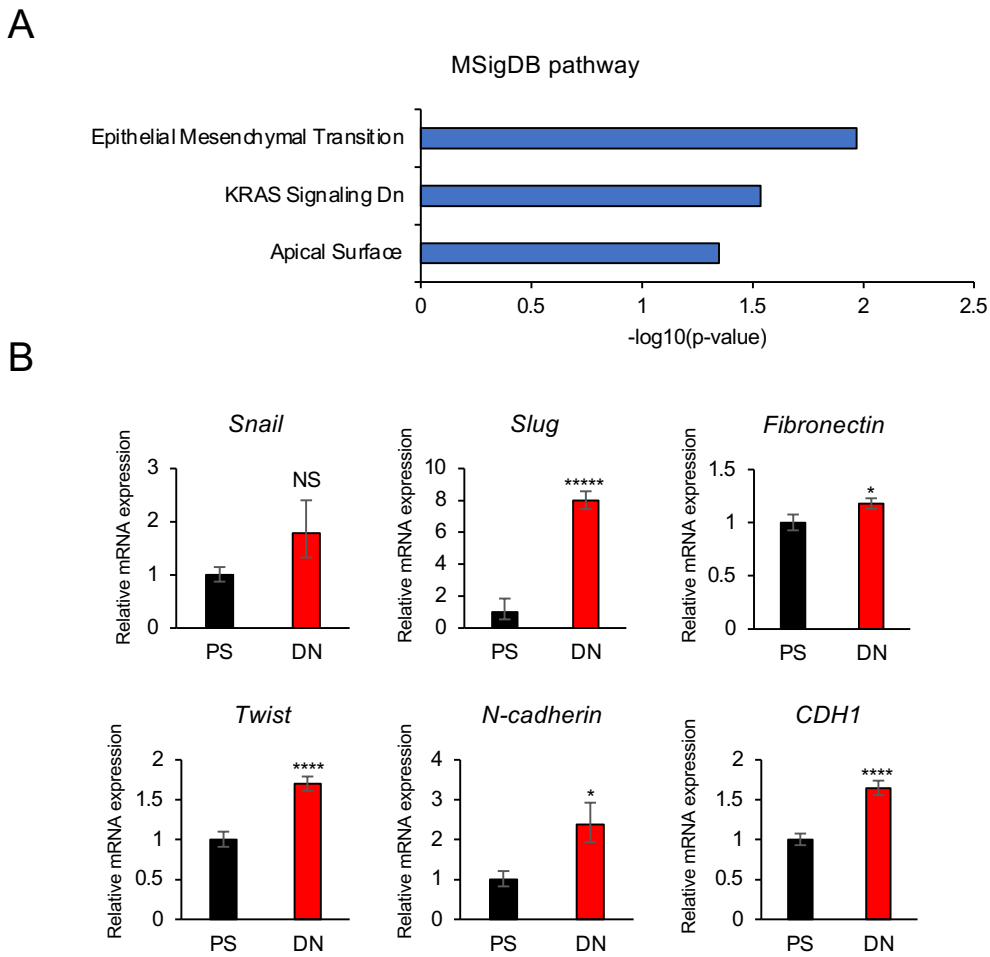
Supplementary Figure 1. Upregulated genes in hydrogel-induced mesothelioma stem cell (MesoSC)-like cells.

(A) Relative mRNA expression levels of 8 genes selected from microarray analysis (*HCRTR2*, *PLB1*, *PTGFR, RXFP1*, *SEMA4G*, *SLC13A5*, *SLC6A11*, and *TMEM151B*) in ACC-MESO-4 cells cultured on DN gel. *HCRTR2, PLB1*, *PTGFR*, *SLC13A5*, and *TMEM151B* was significantly increased. Culture on PS dish and ULA dish was used as a control.

(B) Relative mRNA expression levels of *PTGFR* in five mesothelioma cell lines cultured on DN gel, showing significantly higher expression in ACC-MESO-4 and NCI-H28 cells comparing to those on PS dish. Culture on PS dishes was used as a control.

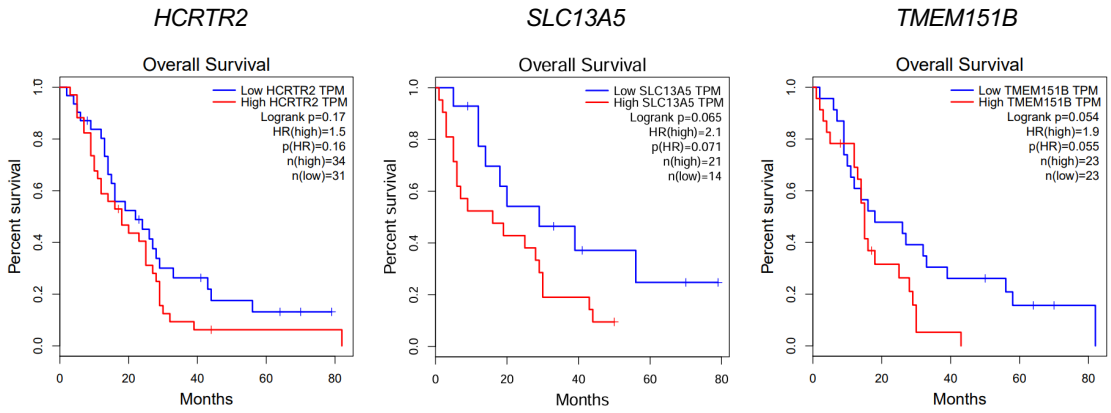
*: $P < 0.05$, **: $P < 0.01$, and ***: $P < 0.005$. NS: not significant.

Supplementary Fig. 2



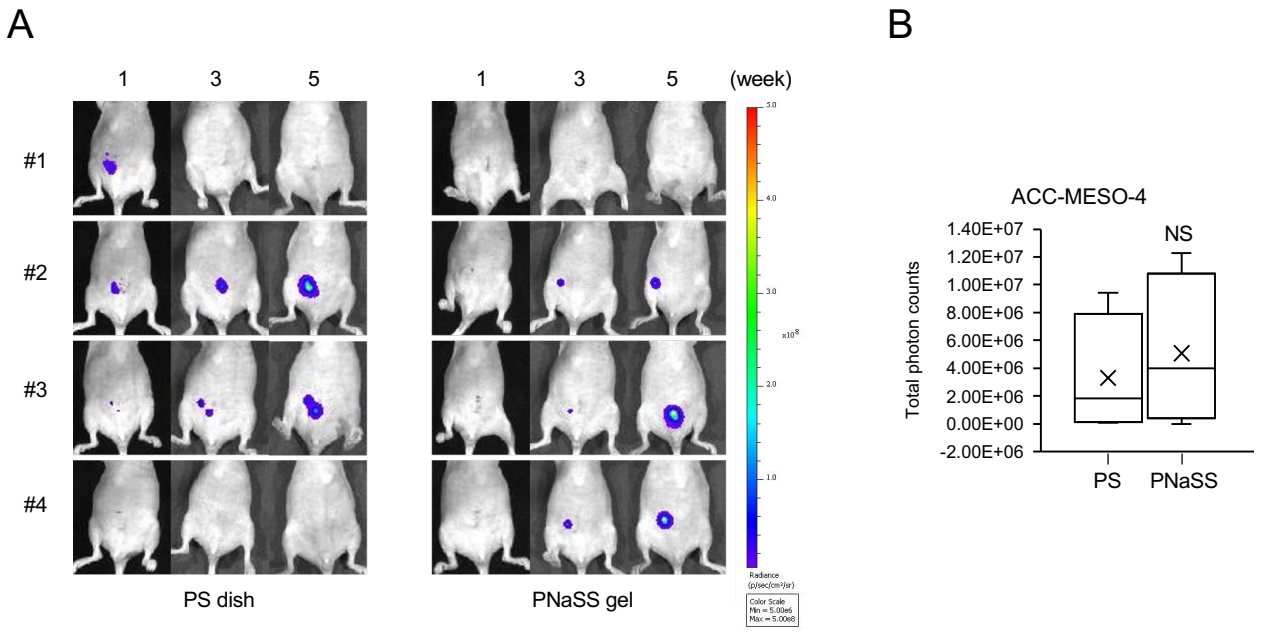
Supplementary Figure 2. Enhancement of epithelial mesenchymal transition (EMT) / mesothelial mesenchymal transition (MMT)-related genes in mesothelioma stem cell (MesoSC)-like cells cultured on DN gel.
(A) Enrichment analysis by MSigDB Pathway of upregulated genes in ACC-MESO-4 cells cultured on DN gel. The EMT/MMT-related pathway was enhanced.
(B) Relative mRNA expression levels of EMT/MMT marker genes in ACC-MESO-4 cells. *Slug*, *Fibronectin*, *Twist*, *N-cadherin*, and *CDH1* (coding E-cadherin) was significantly increased on DN gel. Culture on PS dish was used as a control. *: $P < 0.05$, ****: $P < 0.001$, and *****: $P < 0.0005$. NS: not significant.

Supplementary Fig. 3



Supplementary Figure 3. Relationship between the expression levels of mesothelioma stem cell (MesoSC)-candidate markers (*HCRTR2, SLC13A5*, *TMEM151B*) and overall survival of patients with mesothelioma.
Survival analysis of patients with mesothelioma using the TCGA database. There was no significant difference in the Kaplan-Meier curve, but patients with high expression of *HCRTR2, SLC13A5*, and *TMEM151B* genes tended to have a worse prognosis than those with low expression. *SLC13A5* and *TMEM151B*: high expression group 75% *vs* low expression group 25%. *HCRTR2*: high expression group 50% *vs* low expression group 50%, because the patients' numbers were too small to divide it into 75% high and 25% low.

Supplementary Fig. 4

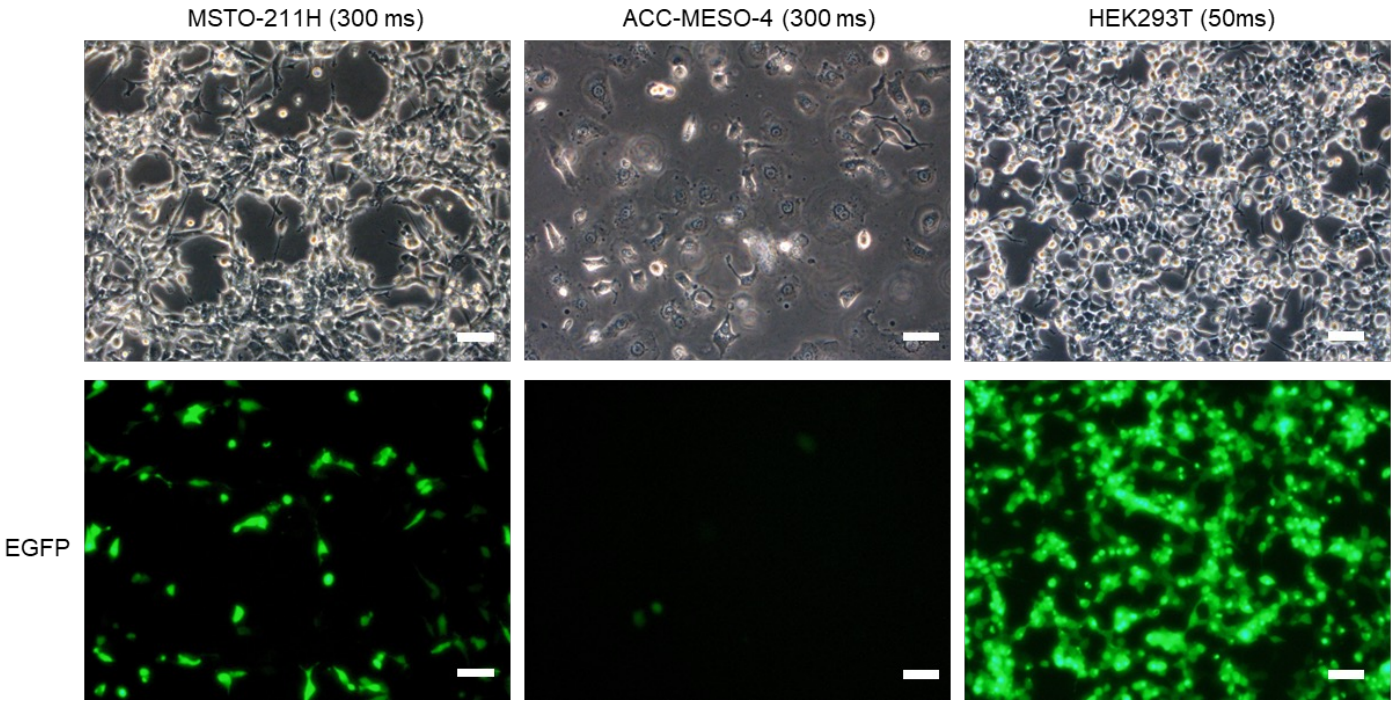


Supplementary Figure 4. Evaluation of tumorigenicity of hydrogel-induced mesothelioma stem cell (MesoSC)-like cells.

(A) Images of tumors formed in the peritoneal cavity of mice visualized by the IVIS imaging system. The color scale for total photon counts ranges from 5×10^6 (blue) to 5×10^8 (red).

(B) Evaluation of *in vivo* tumorigenicity of ACC-MESO-4 cells precultured on PS dish and PNaSS gel. The total photon counts of tumor cells were evaluated 5 week after cell implantation. NS: not significant.

Supplementary Fig. 5



Supplementary Figure 5. Transfection efficiency of SLC13A5 transiently overexpressing cells. Fluorescence microscopy images of MSTO-211H, ACC-MESO-4, and HEK293T cells 48 hours after SLC13A5 transient transfection. Green fluorescent protein was observed due to the EGFP incorporated into the SLC13A5 expression vector. The numbers in parentheses indicate microscope exposure time. Scale: 50 μm.