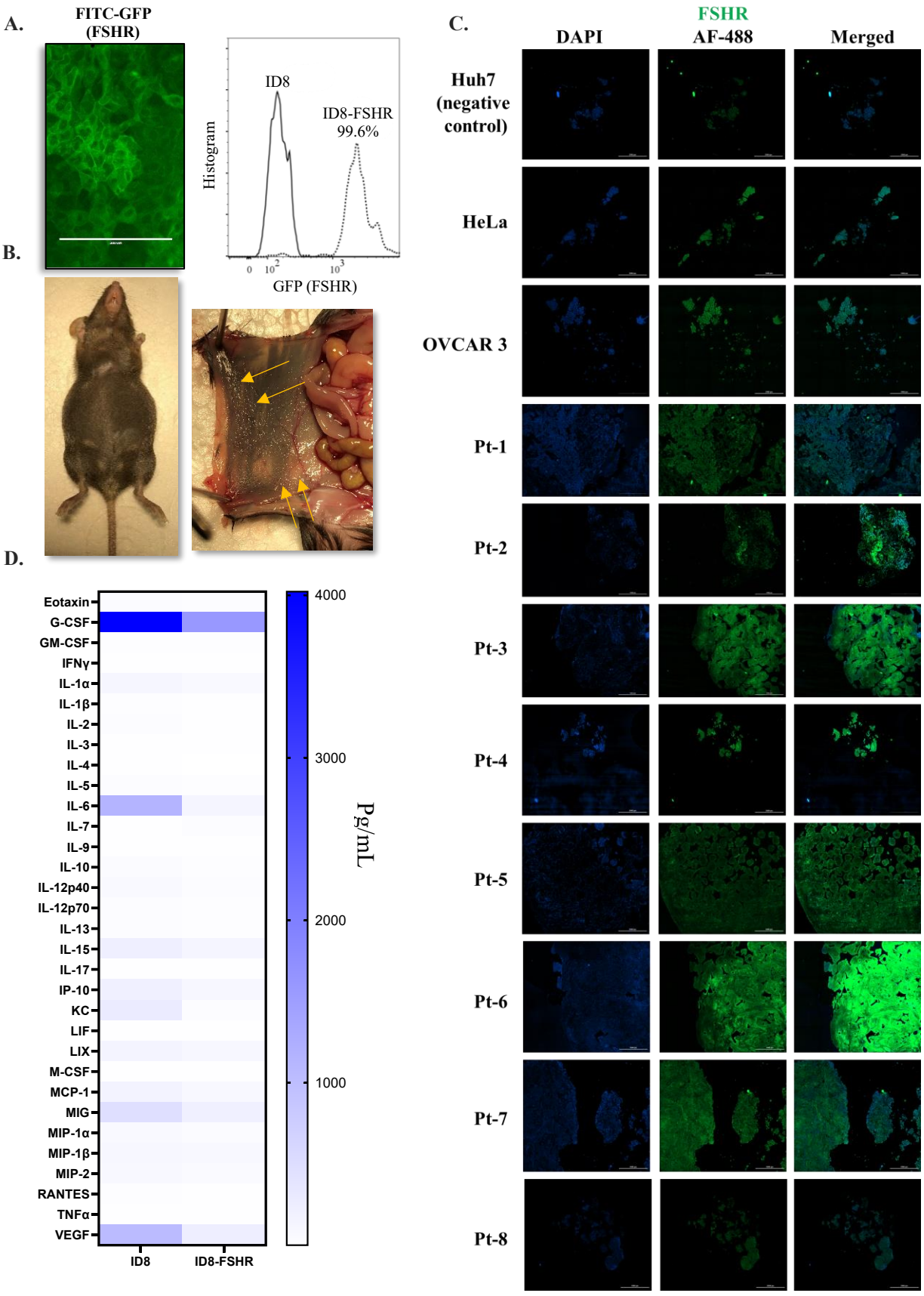
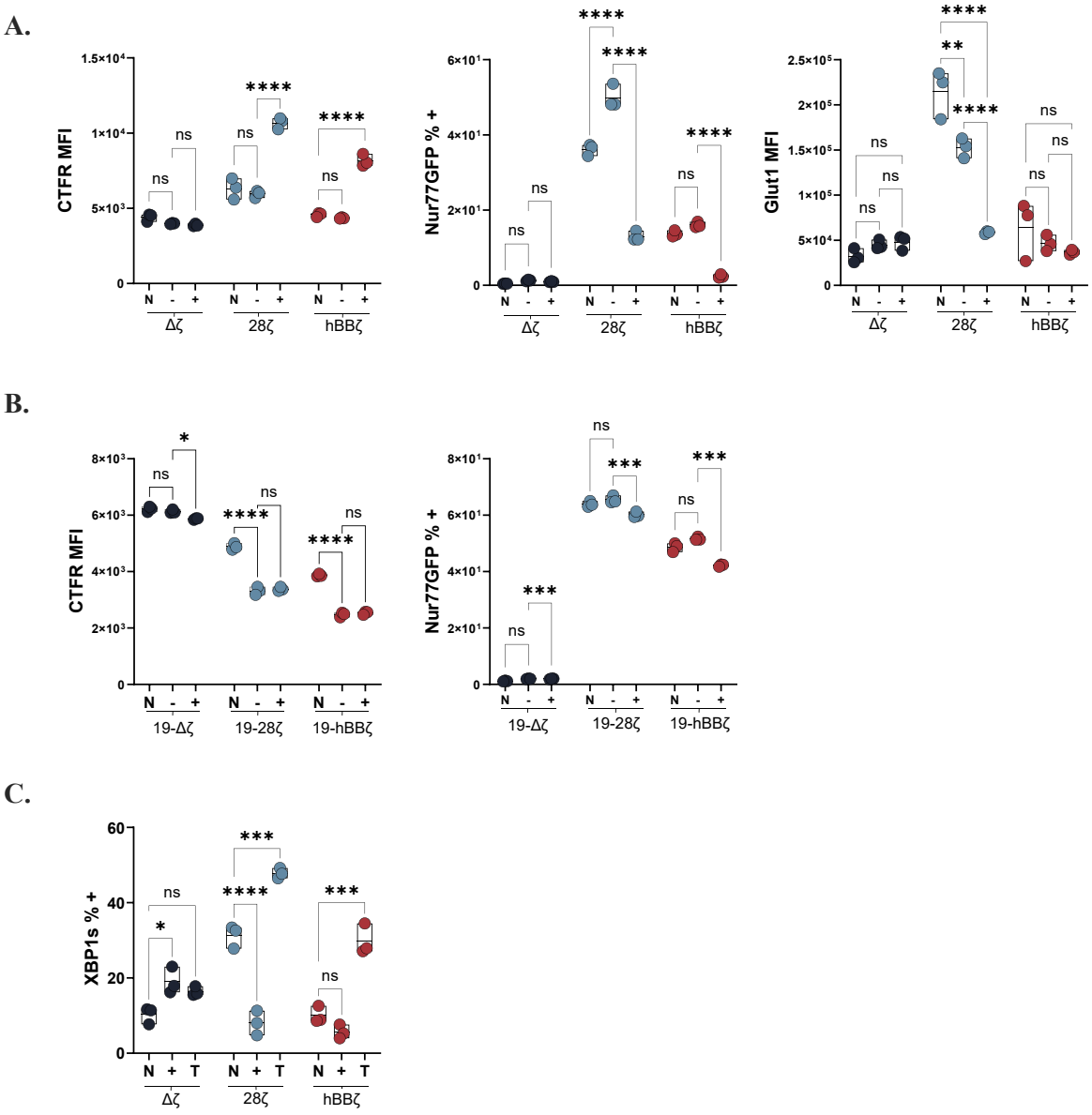

A.
FITC-GFP
(FSHR)
ID8
ID8-FSHR
99.6%
Histogram
GFP (FSHR)
B.
C.
FSHR
DAPI
AF-488
Merged
Huh7
(negative
control)
HeLa
OVCAR 3
Pt-1
Pt-2
Pt-3
Pt-4
Pt-5
Pt-6
Pt-7
Pt-8
D.
Eotaxin
G-CSF
GM-CSF
IFNγ
IL-1α
IL-1β
IL-2
IL-3
IL-4
IL-5
IL-6
IL-7
IL-9
IL-10
IL-12p40
IL-12p70
IL-13
IL-15
IL-17
IP-10
KC
LIF
LIX
M-CSF
MCP-1
MIG
MIP-1α
MIP-1β
MIP-2
RANTES
TNFα
VEGF
ID8
ID8-FSHR
4000
3000
2000
1000
Pg/mL

1

Supplementary Figure 1. FSHR expression in ID8 cells recapitulates human disease. (A) 20x microscope image showing cell membrane expression of GFP directly tagged to FSHR. Flow cytometry histogram plot showing expression of FSHR in ID8 cells after transduction. (B) Mice form ascites and metastasis in the peritoneal cavity as shown by arrows pointing to white dots spread throughout. (C) Heatmap displaying all cytokines measured (pg/mL) in ascites from mice bearing ID8 or ID8-FSHR tumors. (D) Immunofluorescence (IF) imaging of pelleted cells from ovarian cancer patient ascites. Images are shown as individual channels for DAPI and FSHR (Alexa Fluor 488), as well as a merged DAPI/FSHR-488 overlay.



Supplementary Figure 2. ID8-FSHR mouse ascites inhibits FSH-CER but not CD19 CAR T cell function (A-B) FSH-CER T cells (A) and CD19 CAR T cells (B) were co-cultured with ID8-FSHR or ID8-CD19r cells respectively for 48 hours under three conditions: normal cDMEM media (N), cDMEM with 10% ascites derived from ID8 tumors (-) and cDMEM with 10% ascites derived from ID8-FSHR tumors (+). Proliferation of FSH-CERs was measured by dilution of CellTrace Far Red (CTFR). TCR activation was assessed by flow cytometric quantification of Nur77+ cells. Glut1 mean fluorescent intensity was measured by flow cytometry. (C) FSH-CER T cells were co-cultured with ID8-FSHR cells at a 9:1 effector-to-target ratio for 48 hours under three conditions: normal cDMEM media, cDMEM with 10% ascites derived from ID8-FSHR tumors, or cDMEM with 1 µg/mL tunicamycin. Percent of cells expressing XBP1s is shown. All statistical analysis was done by two-way ANOVA. Fold change cutoff: > 1.3-fold or < 0.77-fold with a statistical cutoff of p <0.05. <0.12 (ns), <0.033 (*),

<0.002 (**), <0.0002 (***), <0.0001 (***). N= normal conditions, (-) = ascites from mice bearing ID8, (+) = co-culture with mice bearing ID8-FSHR (T) = tunicamycin.