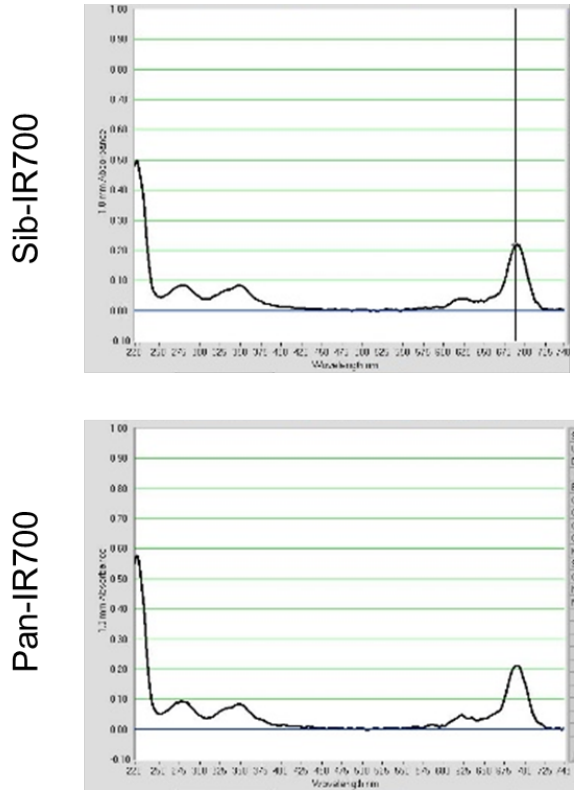
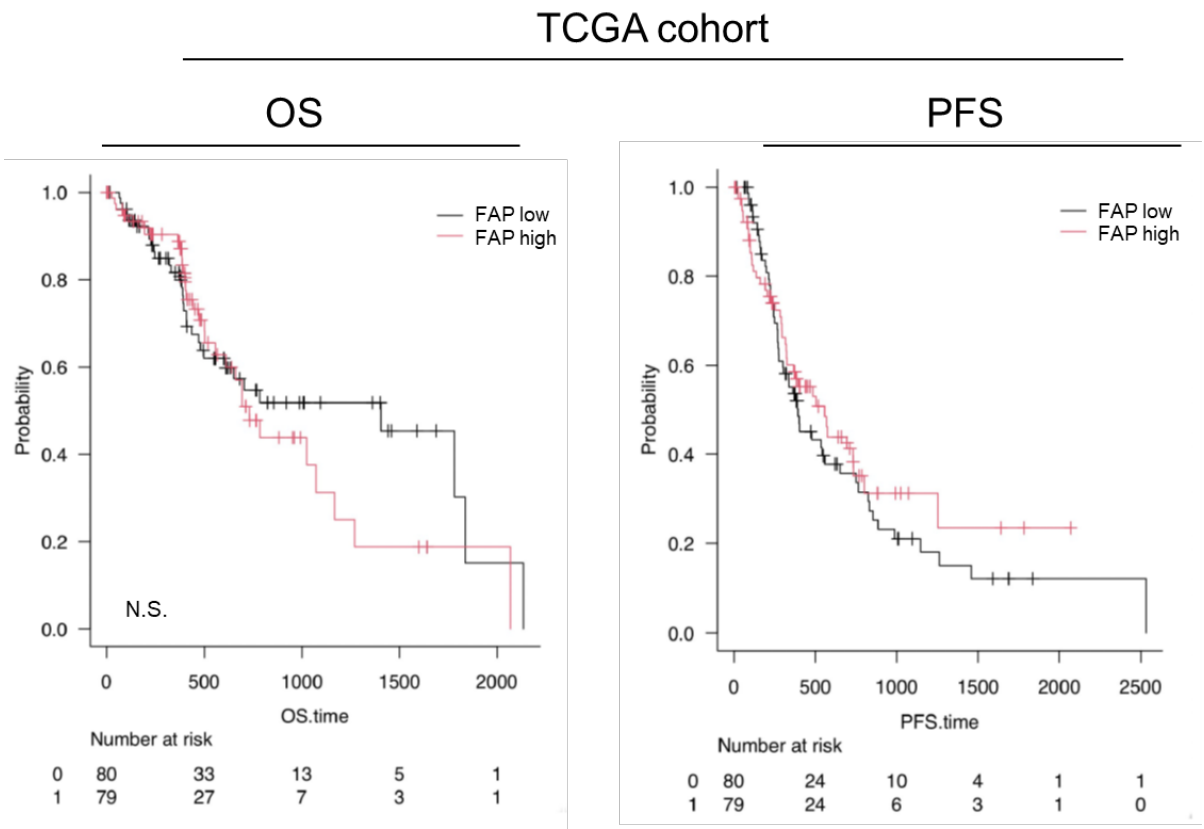
Supplementary Figure S1



Supplementary Figure S2. The absorbance spectrum of purified Sib-IR700 and Pan-IR700

The concentration of IR700 was measured by absorption at 689 nm with spectroscopy (UV-Vis; 8453 Value System; Agilent Technologies, Santa Clara, CA, USA) to confirm fluorophore molecules conjugated to each mAb. 690 nm peak indicates successful conjugation between IR700 and the antibody.

Supplementary Figure S2



Supplementary Figure S1. Survival analyses by OS and PFS in TCGA cohort data

Data from The Cancer Genome Atlas (TCGA) were acquired using the package TCGAbiolinks (version 2.22.4) in R. RNA-seq data were quantile-normalized and log-transformed to log2 (data + 1). For survival analyses, the signature scores were divided into two groups by a quarter of the values. Progression-free survival (PFS) was examined based on previous reports. Survival outcomes in TCGA cohort data according to FAP high/low groups (n = 159, Cox regression hazard model; HR, hazard ratio with 95% confidence intervals).N.S., not significant.

Supplementary Figure S3

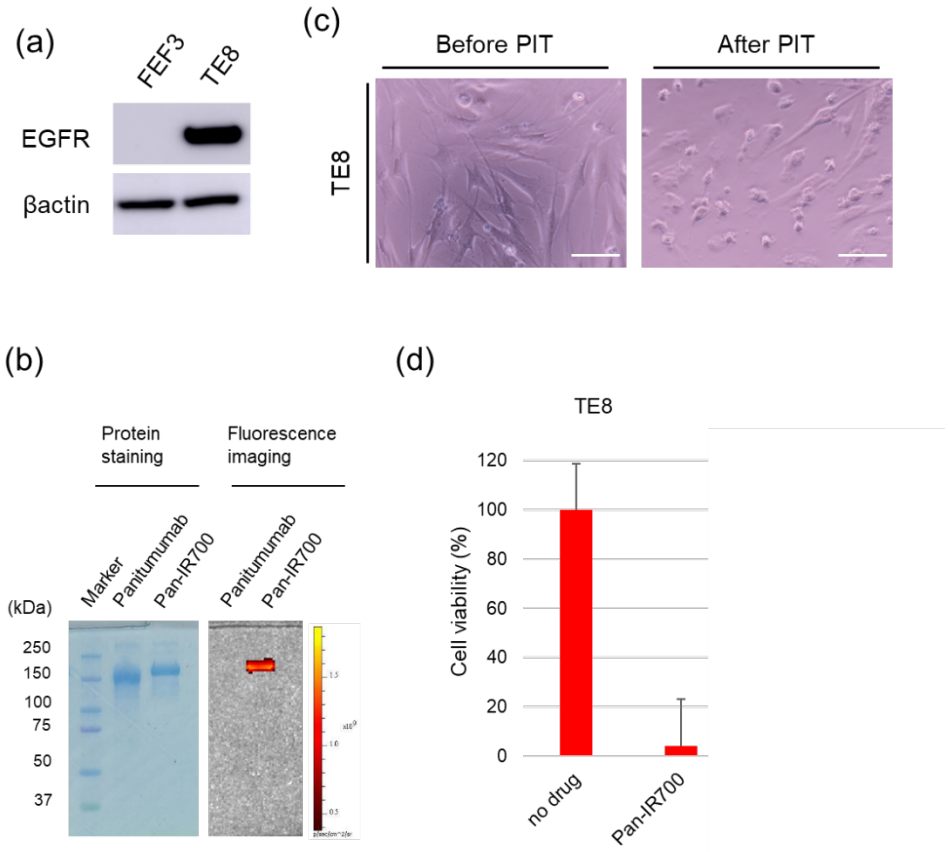
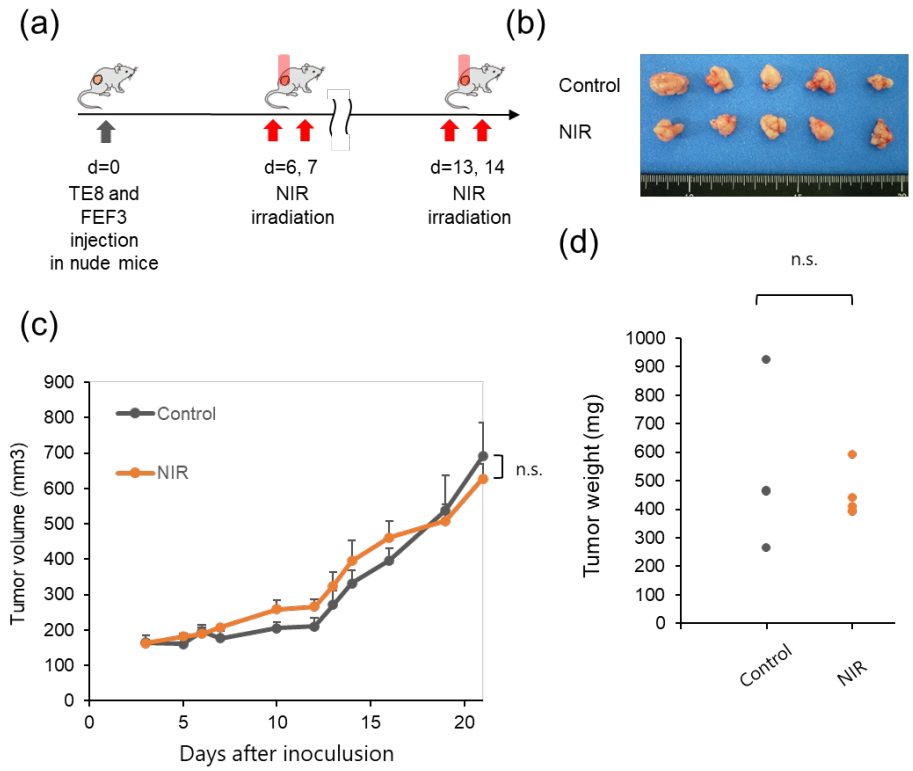


Figure 3. NIR-PIT using panitumumab-IR700 (Pan-IR700) in vitro

(A) Western blot analysis displaying the expression of EGFR in FEF3 and TE8 cancer cells. (B) Validation of Panitumumab-IR700 by SDS-PAGE (left: Colloidal Blue staining, right: 700 nm fluorescence). Each diluted antibody served as a control. (C) Microscopic images before and after NIR-PIT. Scale bars: 50 μm. (D) Cell viability of TE8 induced by EGFR-targeted NIR-PIT, measured using metabolic activity by XTT assay (n = 5, mean ± SD, student *t*-test). In D, the representative examples from four experiments were shown.

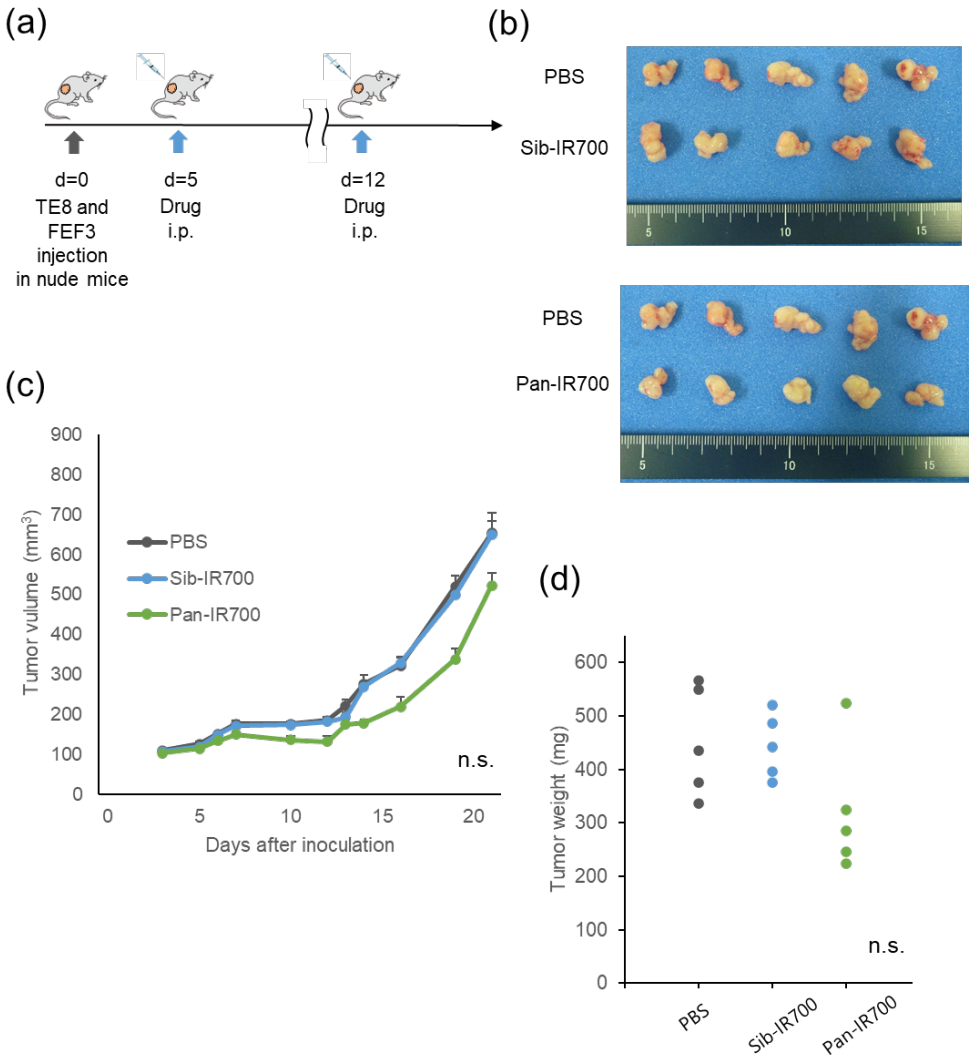
Supplementary Figure S4



Supplementary Figure S4. The efficacy of NIR light alone in CDX model

The mice inoculated TE8+FEF3 tumors were randomized into the following treatments; i) PBS treatment (Control); ii) NIR light treatment without APC administration (NIR). (A) In vivo therapy protocol. (B) Macroscopic images of harvested tumors on day 21. (C) Tumor growth curve in TE8+FEF3 tumors (n = 3, mean ± SD; student t test; n.s., not significant). (D) Tumor weights among the four groups for TE4+FEF3 tumors (n = 3, student t test; n.s., not significant).

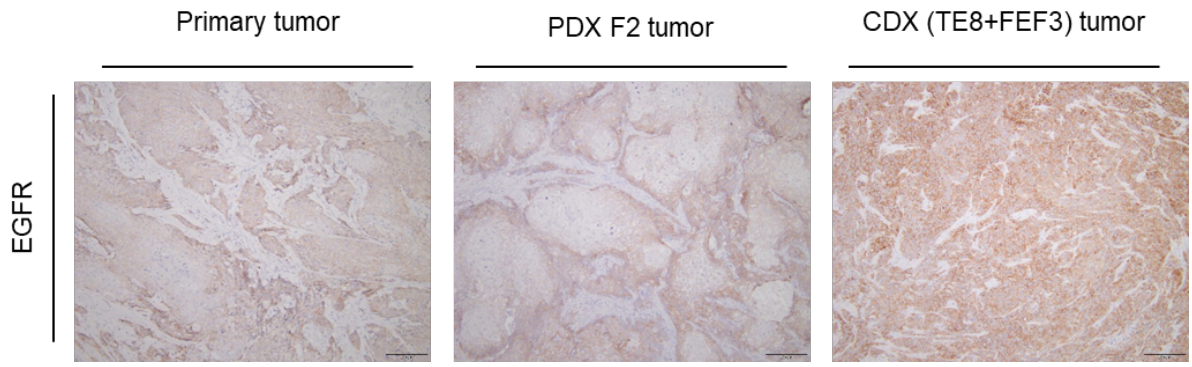
Supplementary Figure S5



Supplementary Figure S5. The efficacy of APC alone in CDX model

The mice inoculated TE8+FEF3 tumors were randomized into the following treatments; i) PBS treatment (Control); ii) Sib-IR700 administration without NIR light irradiation; iii) Pan-IR700 administration without NIR light irradiation. (A) In vivo therapy protocol. (B) Macroscopic images of harvested tumors on day 21. (C) Tumor growth curve in TE8+FEF3 tumors (n = 5, mean ± SD; one-way ANOVA followed by Turkey's test; n.s., not significant). (D) Tumor weights among the four groups for TE4+FEF3 tumors (n = 5, one-way ANOVA followed by Turkey's test; n.s., not significant).

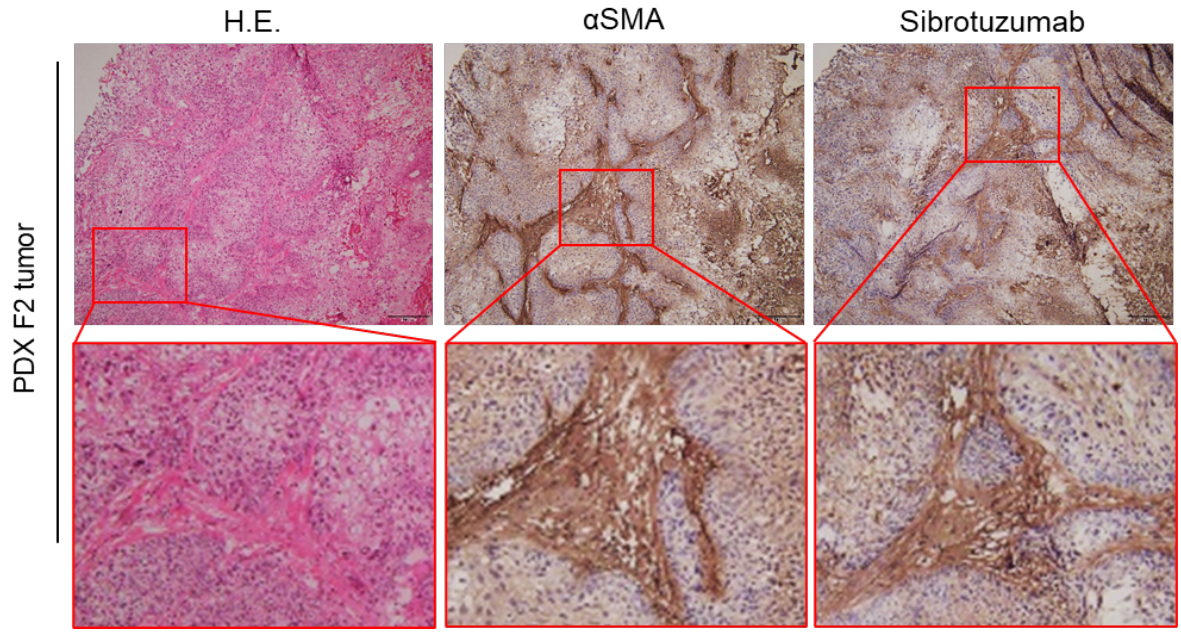
Supplementary Figure S6



Supplementary Figure S6. EGFR expression for primary tumor, PDX, and CDX models in the Immunohistochemistry

Immunohistochemistry of EGFR expression in in a primary tumor, a PDX F2 tumor, and a CDX tumor. Scale bars: 200 μm.

Supplementary Figure S7



Supplementary Figure S7. The combining Sibrotuzumab and CAF in PDX F2 models. Comparison of H.E. and immunohistological images in a PDX F2 tumor. Scale bars: 200 µm and 50 µm (enlarged image).