

## Supplementary Materials

### Cell lines and antibodies

PANC-1 and CFPAC-1 cells were purchased from the ATCC (Manassas, VA, USA). HuCCT-1 and SCK cells were procured from the Health Science Research Resources Bank (Osaka, Japan) and Dr. Dae-Ghon Kim of Chonbuk National University Medical School and Hospital (Jeonju, Korea), respectively. All cell lines were maintained in a humidified incubator at 37°C with 5% CO<sub>2</sub>.

Antibodies against S6K, phospho-S6K, S6, phospho-S6, 4EBP1, phospho-4EBP1, LC3B, cleaved caspase-3, CHOP, Bax, Bim, BCL-2, cyclin B1, PKM2, phospho-PKM2, HIF-1 $\beta$ , CD44, SPARC, vimentin, acetyl CoA carboxylase, phospho-acetyl CoA carboxylase, and GAPDH were obtained from Cell Signaling Technology. CD-31 and VEGF were purchased from Abcam (Cambridge, MA, USA). HIF-1 $\alpha$ , VEGFR2/FIk-1, and MMP-2 were obtained from Santa Cruz Biotechnology.

### Tumor xenograft and treatment

Female 6–8-week-old athymic nude mice were purchased from Orient Bio (Kyunggido, Korea) for subcutaneous xenografts. To establish the tumor xenograft model,  $2 \times 10^6$  cells were suspended in 200- $\mu$ l plain growth media (DMEM or RPMI-1640) and injected subcutaneously into spaces under the dorsal skin. Tumors were measured every other day using calipers, and their volumes were calculated by the following formula:  $0.5 \times \text{length} \times \text{width} \times \text{depth}$ . The animal's body weight was monitored every other day. When tumor volume reached 100 mm<sup>3</sup>, the mice were anesthetized with a mixture of Zoletil (30 mg/kg) and Rompun (10 mg/kg) i.p., and the PEMs were surgically implanted underneath the tumors.

## Supplementary Figure Legends

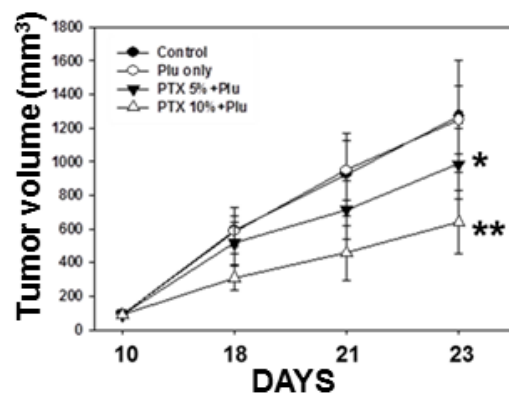
**Supplementary Figure S1. The effect of implanting the paclitaxel-eluting membrane (PEM) on growth of SCK xenografts in nude mice.** Mice were implanted with bare membrane (control), Plu only (control + Plu), paclitaxel (PTX) 5% plus Plu, or PTX 10% plus Plu membrane for 21 days. Data represent means of eight mice per group; error bars = standard deviation. \*,  $P < .05$ ; \*\*,  $P < .01$  vs. control (Plu only).

**Supplementary Figure S2. The effect of implanting the paclitaxel-eluting membrane (PEM) on growth of HuCCT-1 xenografts in nude mice.** Mice were implanted with a bare membrane (control), Plu only (control+ Plu), paclitaxel (PTX) 5% plus Plu, or PTX 10% plus Plu membrane for 33 days. Data represent means of eight mice per group; error bars, standard deviation. \*,  $P < .05$  vs. control (Plu only).

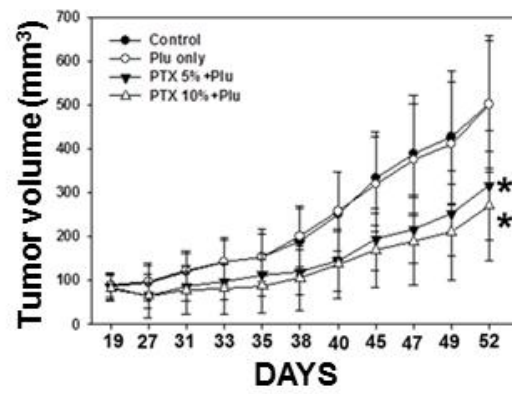
**Supplementary Figure S3. Western blots of phospho-S6K and cleaved caspase-3 in the protein extract from an SCK xenograft tumor section (proximal and distal) implanted with the paclitaxel-eluting membrane (PEM) (paclitaxel 10% + Plu) for 15 days.** P, proximal to PEM; D, distal to PEM. The sizes of the molecular weight markers (in kilodaltons) are indicated on the left.

**Supplementary Figure S4. A simplified schematic diagram of the molecular mechanisms responsible for the anti-tumor properties of the paclitaxel-eluting membrane in pancreatic/biliary cancer xenografts.**

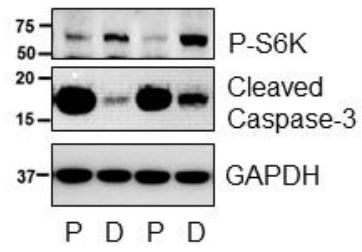
**Supplementary Figure S5. The PEM induced apoptosis in CFPAC-1 tumors. Bcl-2, Bim, and Bax expression was detected in tumor lysates by Western blotting. Bax and Bim were immunoprecipitated (IP) with Bax.**



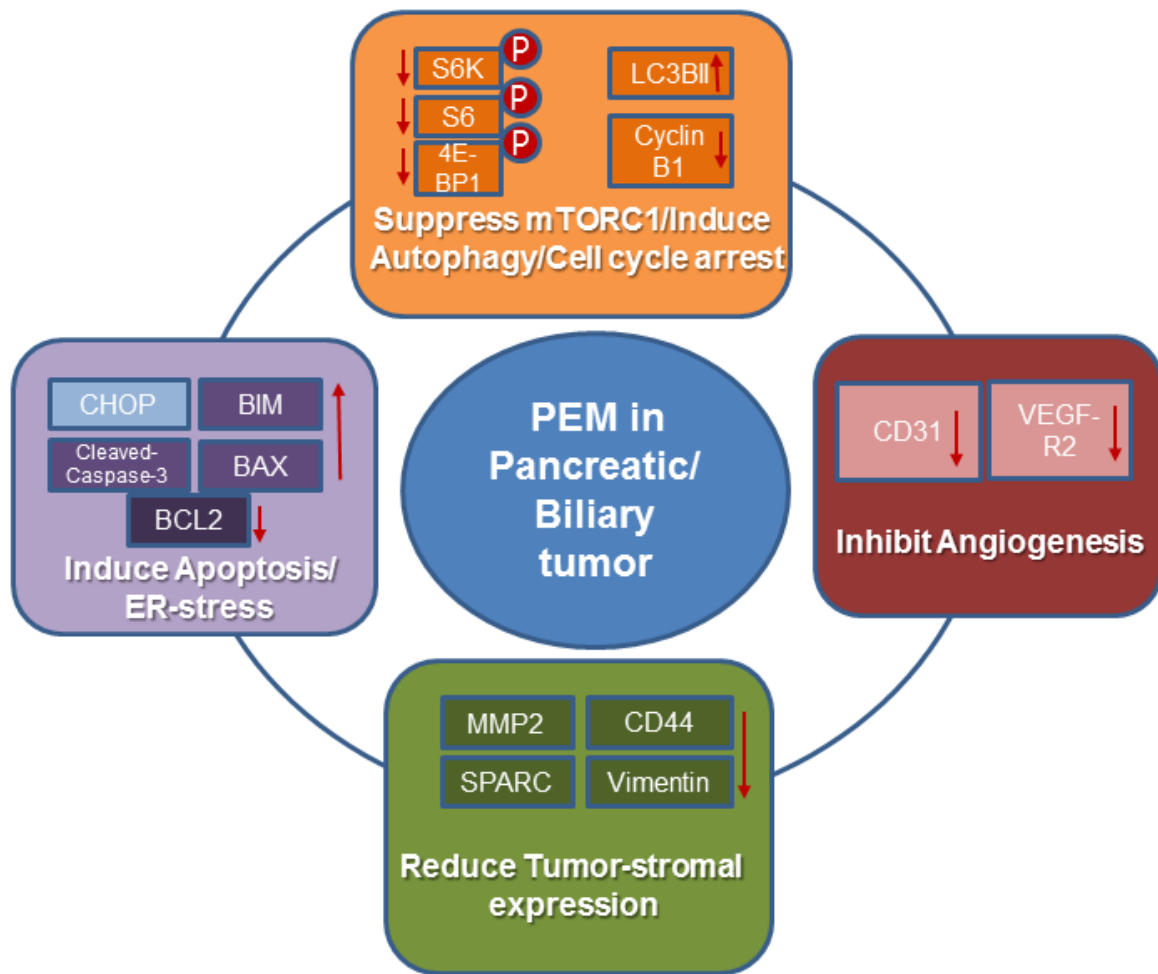
Supplementary Figure S1



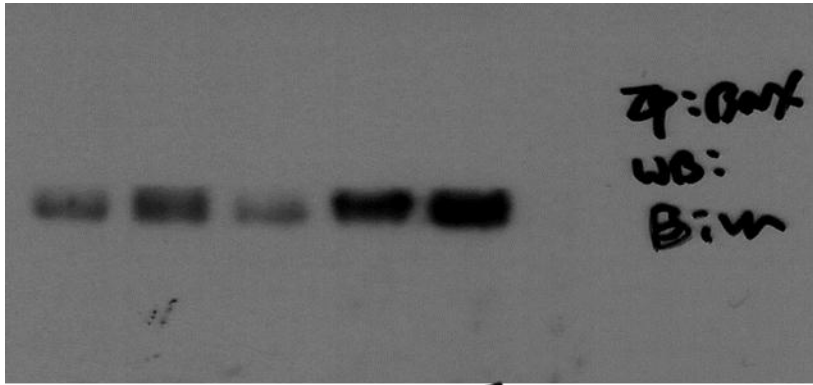
Supplementary Figure S2



Supplementary Figure S3



Supplementary Figure S4



N    P    -        PEM

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                Plu

N: negative control  
P: positive control

Supplementary Figure S5