

Supporting Information

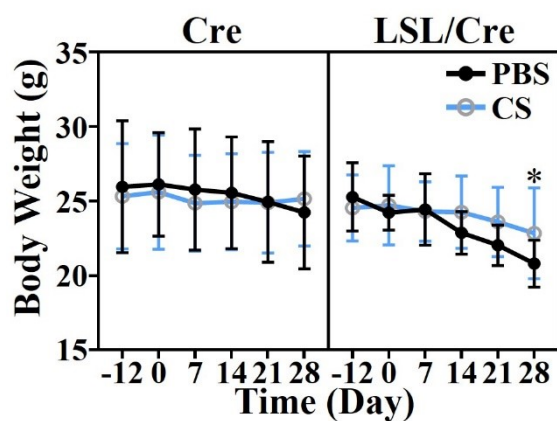


Figure S1. Changes of body weight in Cre and LSL/Cre chronic pancreatitis mice treated with CS ion solution.

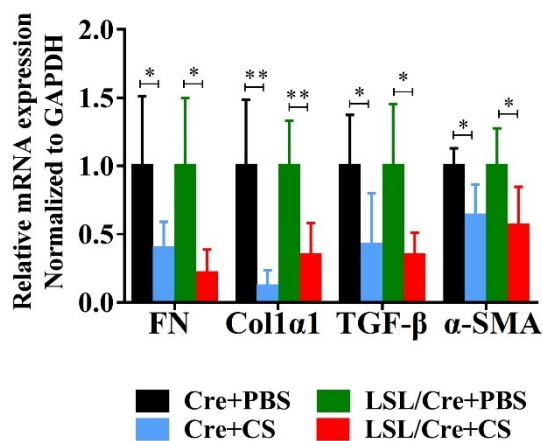


Figure S2. The effect of CS ion solution on the expression level of fibrosis related gene (Fibronectin (FN), Col1a1, TGF- β , α -SMA) in pancreatic tissue after treated with CS ion solution for 1 month. (* $p < 0.05$ compared with PBS group; ** $p < 0.01$ compared with PBS group; $n = 5$).

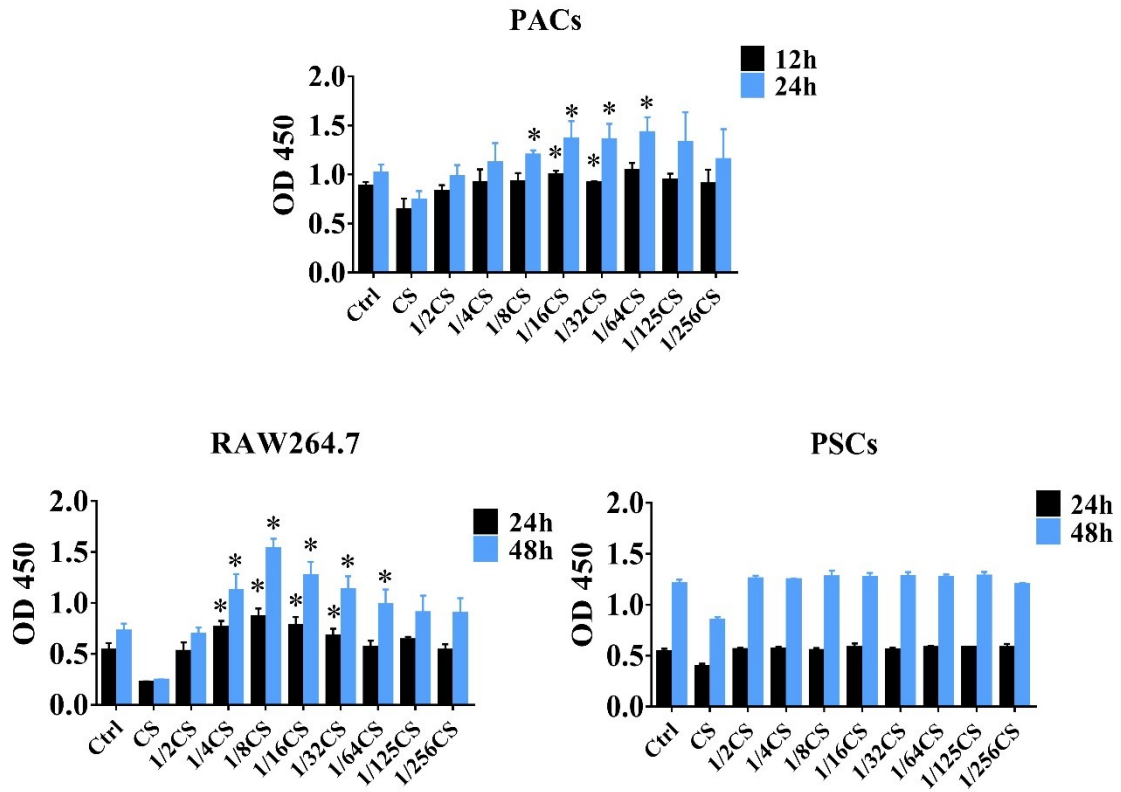


Figure S3. Effects of different concentrations of CS ion solution on the cell viability of pancreatic acinar cells (PACs), macrophages (Raw.264.7) and pancreatic stellate cells (PSCs). (*p<0.05 compared with Ctrl group; n=5).

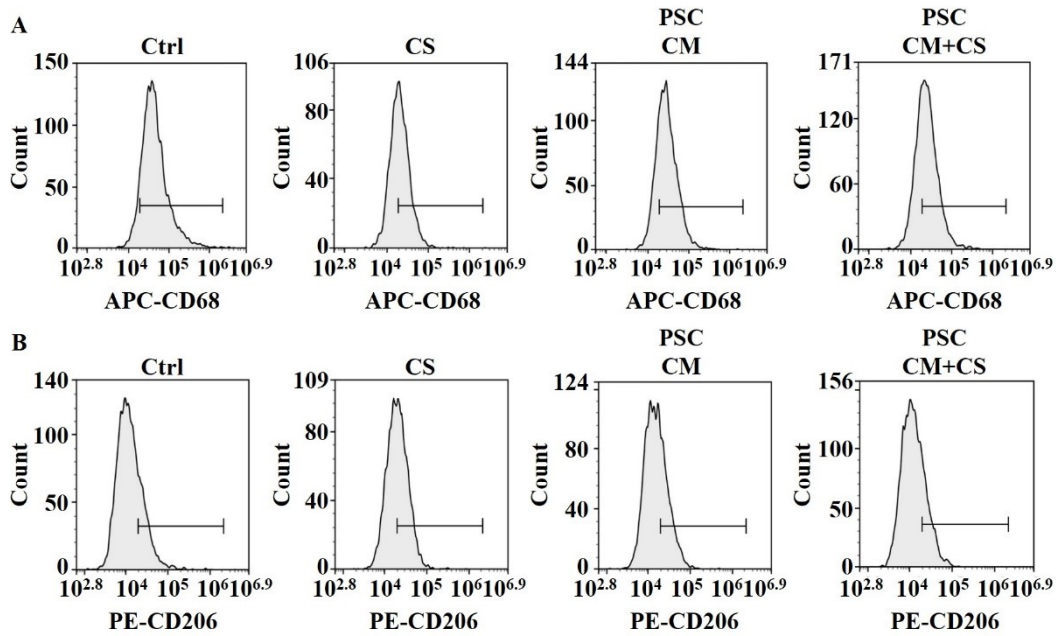


Figure S4. The expression of CD68 and CD206 markers on the macrophage surface detected by flow cytometry.

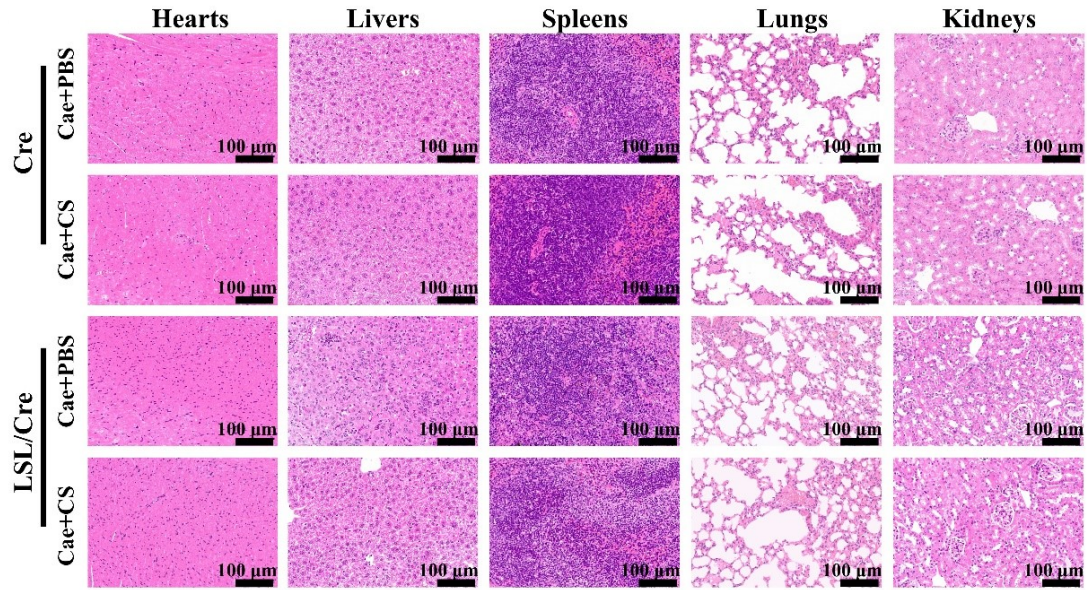


Figure S5. Representative images of H&E staining of tissue (heart, liver, spleen, lung, and kidney) after treated with CS ion solution for 1 month.

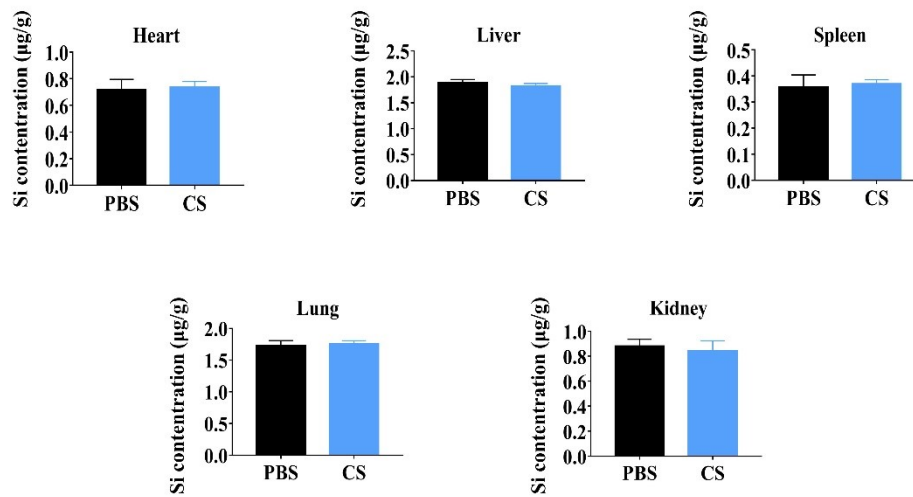


Figure.S6. Distribution of silicon element in different organs including heart, liver, spleen, lung and kidney of mice after CS ion solution treatment for 1 month.

Table S1. Primer Sequences.

Gene	Forward sequence (5'-3')	Reverse sequence (5'-3')
α -SMA	ATGACCCAGATTATGTTTGAGACC	CCAGAGTCCAGCACAATACCA
IL1- β	GCAACTGTTCTGAACTCAACT	ATCTTTTGGGGTCCGTCAACT

TNF- α	CCAAAGGGATGAGAAGTTCC	CTCCACTTGGTGGTTTGCTA
iNOS	GAGGCCCAGGAGGAGAGAGTCC	TCCATGCAGACAACCTTGGTGTTG
IL-6	AGTTGCCTTCTTGGGACTGA	TCCACGATTTCCCAGAGAAC
Arg-1	AGACCACAGTCTGGCAGTTG	CCACCCAAATGACACATAGG
CD206	TGATTACGAGCAGTGGAAGC	G TTCACCGTAAGCCCAATTT
CD301	ACTGAGTTCCTGCCTCTGGT	ATCTGGGACCAAGGAGAGTG
Fibronectin	GCCTGAGGTGGACCCCGCTA	GGGCCCAAGTGACCCGCATC
Coll α 1	CGCCATCAAGGTCTACTG	ACGGGAATCCATCGGTC
TGF- β	CCCTATATTTGGAGCCTGGA	CTTGCGACCCACGTAGTAGA
GAPDH	GGTCGGTGTGAACGGATTTG	TGTAGACCATGTAGTTGAGGTCA

Table S2. Concentrations of Ca²⁺ and SiO₃²⁻ ions in CS solutions.

	Ca ²⁺ (μ g/mL)	SiO ₃ ²⁻ (μ g/mL)
PBS	0.06 \pm 0.01	0.02 \pm 0.00
CS in PBS solution	0.05 \pm 0.03	119.2 \pm 0.74
DMEM	59.33 \pm 0.87	0.12 \pm 0.04
CS in DMEM solution	5.2 \pm 0.05	121.2 \pm 0.69