Supplementary material:

CTL killing assay

Cytotoxicity was analyzed by a classical chromium release assay. Briefly, following incubation with 100 µl Na-chromate (^{51}Cr, 3.7 MBq) for 1 h, K562-PPI-A2, K562-A2 cell lines were seeded in triplicate at various effector-to-target (E:T) together with CTLs. After 4 h incubation at 37°C in 5% CO_2, supernatants were collected, and the release of ^{51}Cr was measured with a gamma-counter (Wallac/PerkinElmer, Waltham, MA, USA). Spontaneous and maximum releases were obtained by incubation with medium and 1% triton in PBS, respectively. The specific lysis was calculated by the following formula: percentage of specific lysis = 100 × (experimental release − spontaneous release) / (maximum release − spontaneous release).

Figure S1: CTLs killing capacity. a) Chromium-release assay performed on A2/K562 cells preincubated with 10ng CMV peptide and incubated with CMV-directed CTLs or PPI-directed CTLs. b) Similar experiment as seen in a) performed on A2/K562 preincubated with 10 ng PPI purified peptide. c) Chromium-release assay performed using PPI directed CTL on A2/K562-A2 or A2/K562 with 10ng PPI peptide or on PPI overexpressing A2/K562 cells.

Figure S2: Effect of US2/Spi9 on islets functionality. a) Comparative insulin release of intact islets (white bars) and US2/Spi9-modified islets (black bars) determined by glucose-stimulated insulin-secretion test following incubation in 2mM or 20mM glucose. b) IPGTT performed on mice co-transplanted with 5.10^6 LV-GFP (n=1) or LV-US2/Spi9

modified pseudoislets (n=2). Non transplanted mice (NT) are used as control (n=1). Blood samples were taken at 4, and 11days post transplantation before the intraperitoneal glucose ionjection (t=0) and 45min after glucose injection (t=45min)

Figure S1

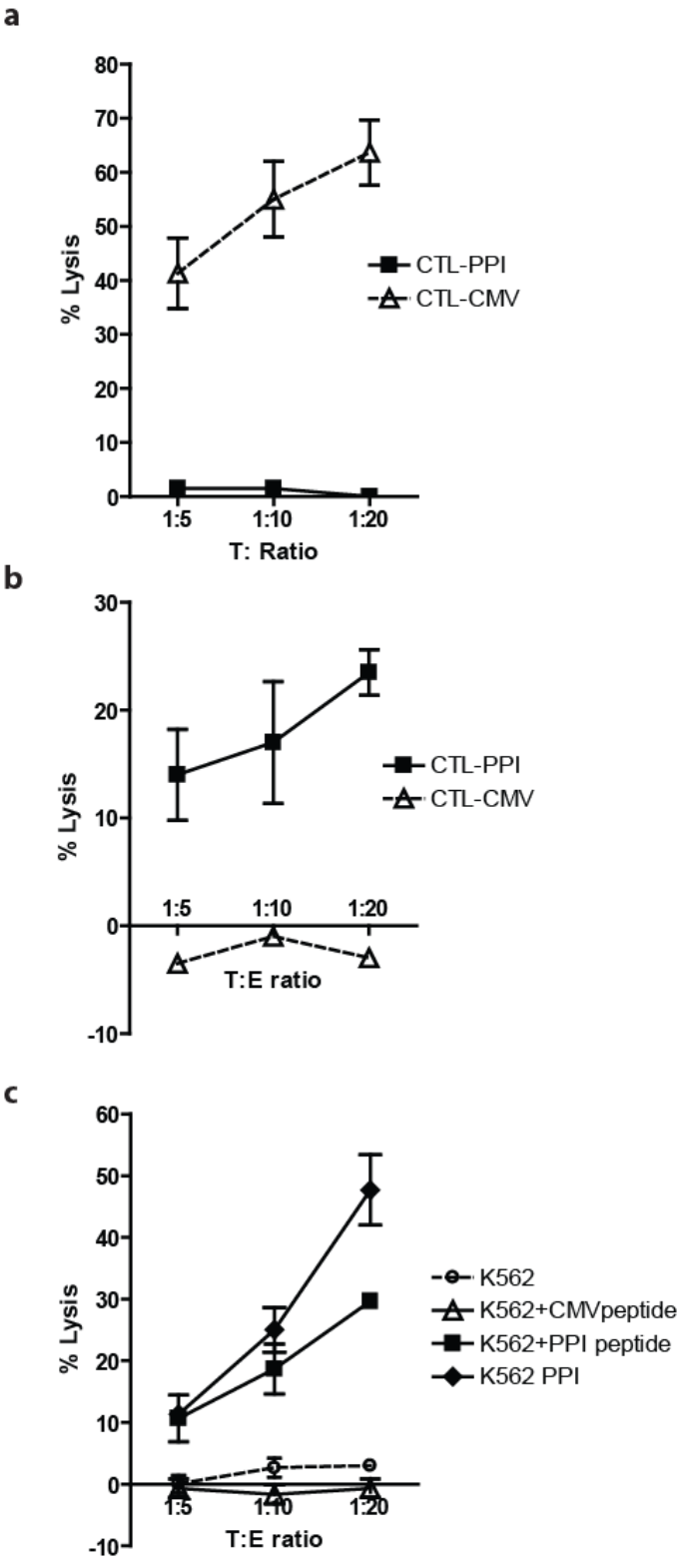
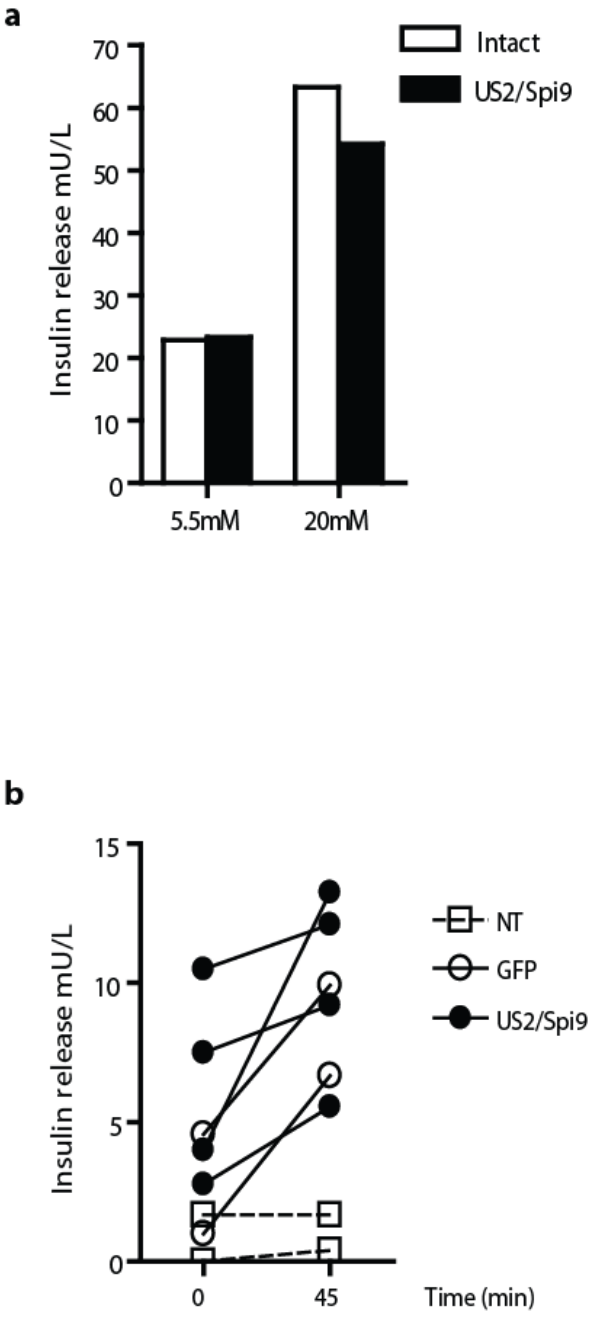

a
80
70
60
50
40
30
20
10
0
% Lysis
CTL-PPI
CTL-CMV
1:5
1:10
1:20
T: Ratio
b
30
20
10
0
-10
% Lysis
CTL-PPI
CTL-CMV
1:5
1:10
1:20
T:E ratio
c
60
50
40
30
20
10
0
-10
% Lysis
K562
K562+CMVpeptide
K562+PPI peptide
K562 PPI
1:5
1:10
1:20
T:E ratio

Figure S2


a
Intact
US2/Spi9
Insulin release mU/L
70
60
50
40
30
20
10
0
5.5mM
20mM
b
Insulin release mU/L
15
10
5
0
0
45
Time (min)
NT
GFP
US2/Spi9