SUPPORTING INFORMATION

CRISPR delivery particles targeting *nuclear receptor-interacting protein 1* (*Nrip1*) in adipose cells to enhance energy expenditure

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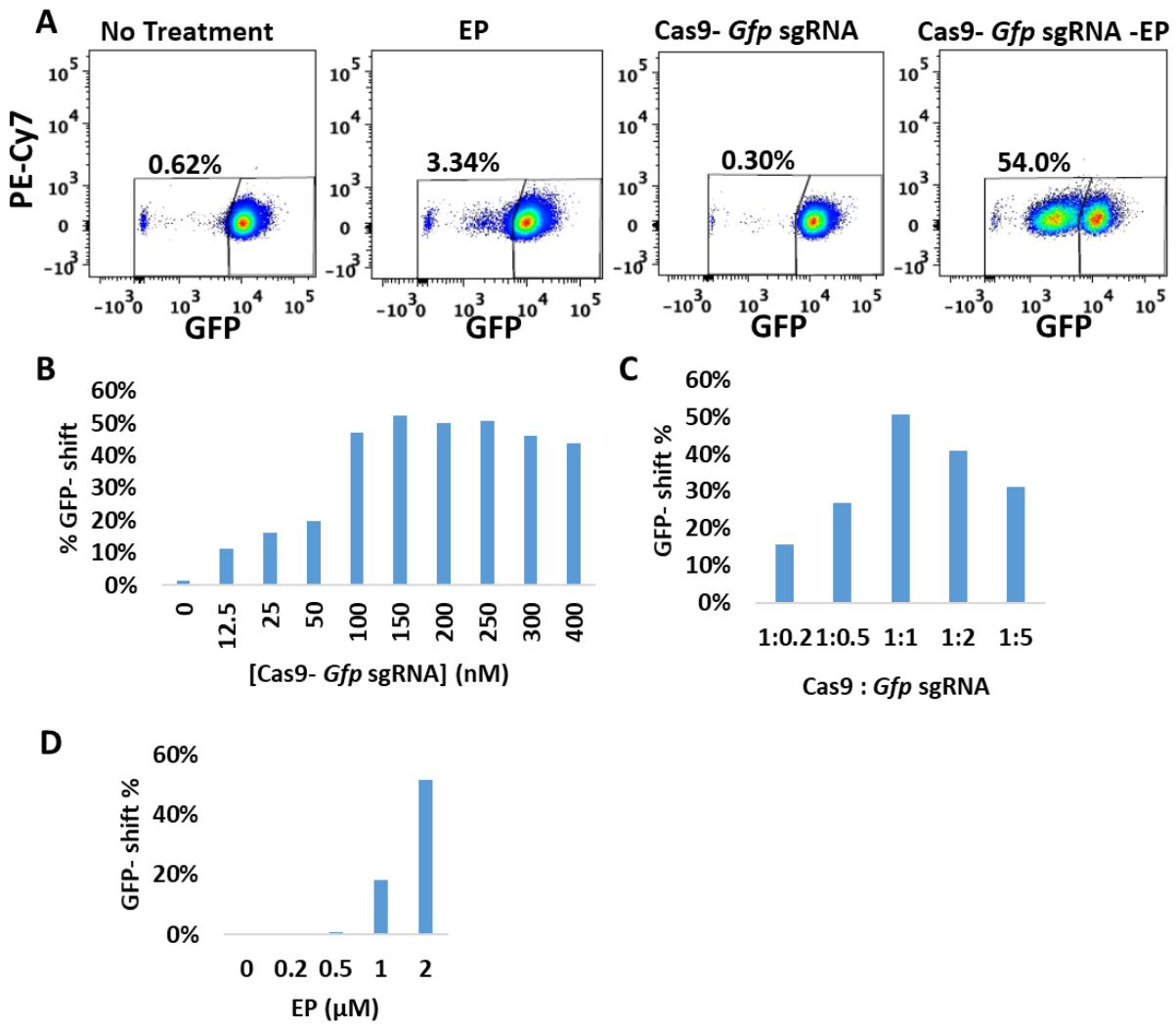

Figure S1. Efficient gene deletion was achieved with the treatment of CriPs targeting *Gfp* in GFP-J774A.1 cells. At 48 hours post treatment, flow cytometry was performed to measure the loss of GFP (A) Flow cytometry of GFP-J774A.1 cells treated with CriPs targeting *Gfp* (Cas9- *Gfp* sgRNA -EP) and controls (No treatment, EP and Cas9- *Gfp* sgRNA). Cas9: 150 nM, *Gfp* sgRNA: 150 nM, EP: 2 µM. Figure S1A is the reuse of Figure 2A. (B) Different concentrations of Cas9- *Gfp* sgRNA (1:1) with 2 µM of EP. (C) Different ratios of Cas9 (200 nM): *Gfp* sgRNA with 2 µM of EP. (D) Different concentrations of EP with 200 nM of Cas9- *Gfp* sgRNA.

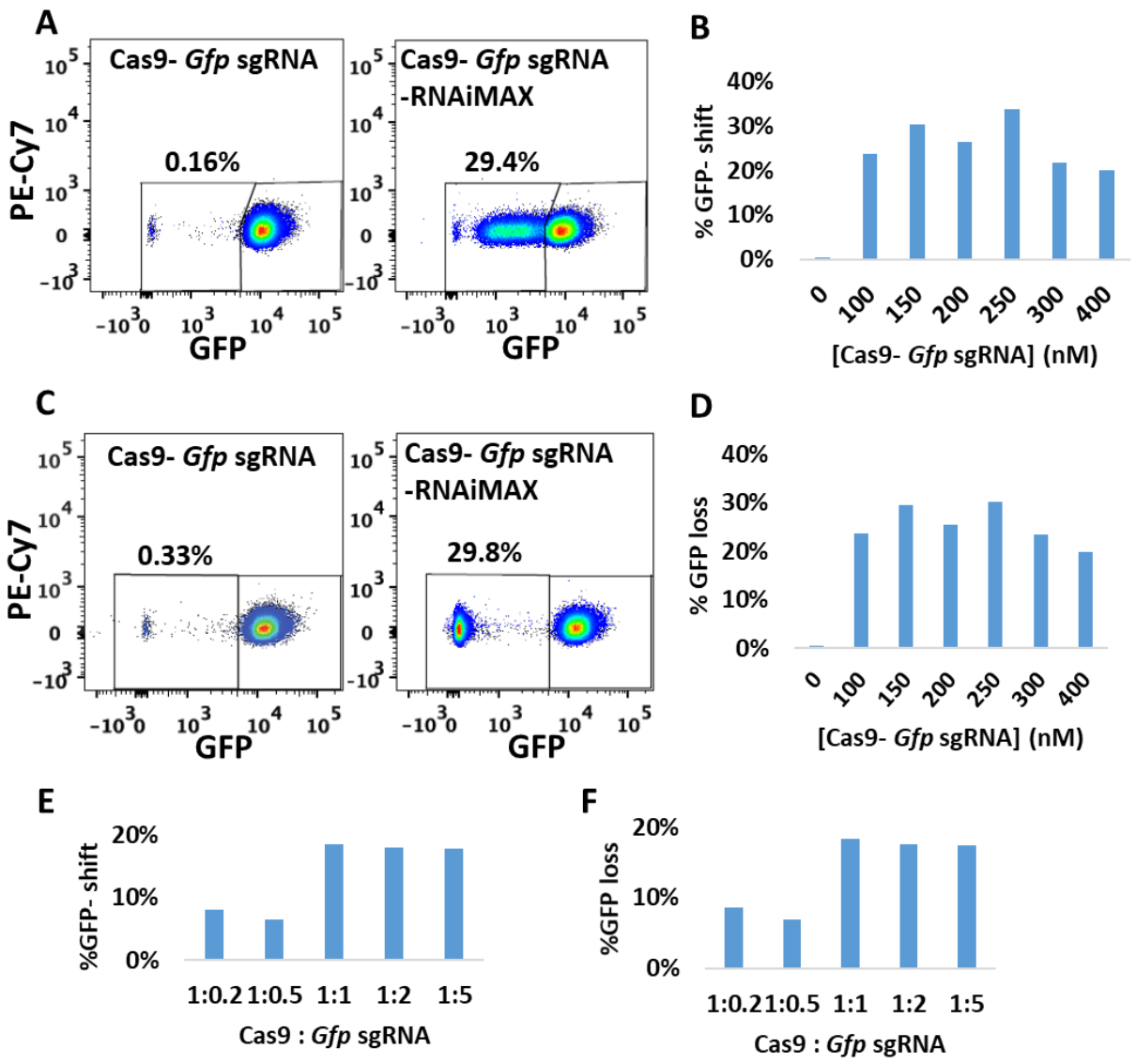

Figure S2. Flow cytometry of GFP-J774A.1 cells treated with RNAiMAX mediated delivery of Cas9- *Gfp* sgRNA. At 48 hours (A, B, E) or on 5 days (C, D, F) post treatment, flow cytometry was performed to measure the loss of GFP. (A, C) Flow cytometry measurements of GFP loss. Cas9: 150 nM, *Gfp* sgRNA: 150 nM, RNAiMAX: 3 ul. Figure S2C is the reuse of Figure 2G. (B, D) Different concentrations of Cas9- *Gfp* sgRNA (1:1) with 3 µl of RNAiMAX. (E, F) Different ratios of Cas9 : *Gfp* sgRNA with 3 µl of RNAiMAX. Cas9: 200 nM

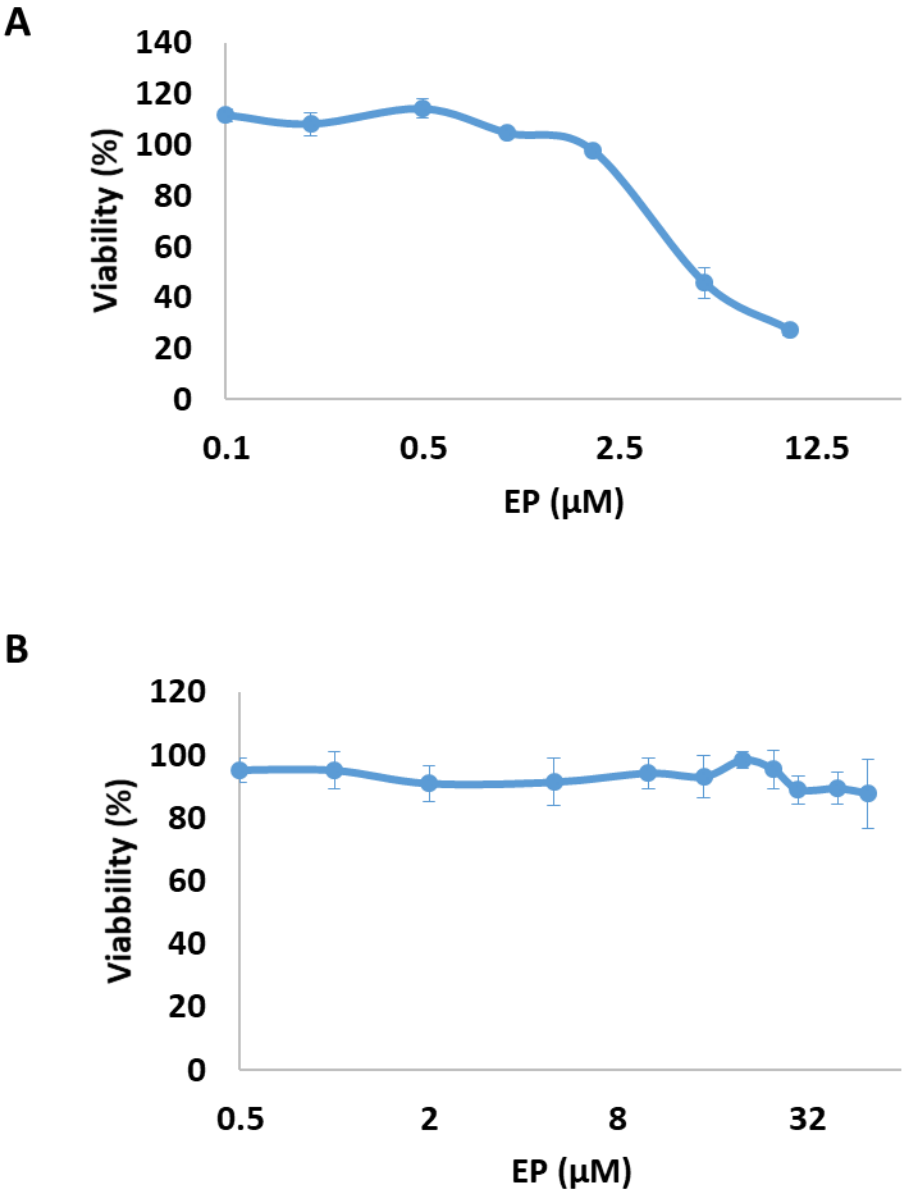

Figure S3. Cytotoxicity of CriPs with different concentrations of EP in GFP-J774A.1 cells and primary GFP pre-adipocytes. (A) GFP-J774A.1 cells (B) primary GFP pre-adipocytes. Cas9-sgRNA: 100 nM.

Table S1. sgRNA sequences

Gfp	GGGCGAGGAGCTGTTCACCG
Nrip1 1	GGTTTGGAGTCACGTCAGGG
Nrip1 2	GGATTTAAGGTGCTATGGCG
Nrip1 3	GGAGTCGAAGAACATCTGCA
Nrip1 4	GGAGTACTGCAGGCATACGG
Control	GGGTTCCTATAGAGGAGCAGCG

Table S2. Primer sequences for T7E1 assay

Gfp (for GFP-J774A.1)	
forward	GCCTCGATCCTCCCTTTATC
reverse	GAACTTCAGGGTCAGCTTGC
Gfp (for GFP mice and primary cells isolated from GFP mice)	
forward	GAGGGGAGGGATAAGTGAGG
reverse	GAACTTCAGGGTCAGCTTGC
Nrip1 1	
forward	TCTTTCGCTTGCCACCTGAT
reverse	AGCCTCAAGGAGCAGGGATA
Nrip1 2	
forward	CTCGCCCTTTTCTCCACCAT
reverse	CTAGGCTGCAGACTGTTGCT
Nrip1 3	
forward	TCCTGATGAAGCAACGACCC
reverse	GCCTTGTGACGACTTCCAGA
Nrip1 4	
forward	TCTCTTCAGCCGCATTGGTT
reverse	ATACAGCCAGCCAAGCAGAG

Table S3. Sequences of *Nrip1* sgRNA 3 off-target sites

Off-target 1	GGACTATAAGAACATCTGCA
Off-target 2	GGAGATGAAGAACATGTGCA
Off-target 3	GGAGAAGAAGAACCTCTGCA

Table S4. Primer sequences for *Nrip1* sgRNA 3 off-target sites

Off-target 1	
forward	TGTGGCTTGGCTGAATTTCT
reverse	ATGGCAGATCCACCTCACAG
Off-target 2	
forward	GGAATTCCCAGAGGAACAATG
reverse	CACCTTCTCAGTGATCTCAGCA
Off-target 3	
forward	GGAGCATCAGTAACTTCTTCCAAA
reverse	GATAGTGGGATGGGCTACCTG