Figure 1

A

Log [IgE] Concentration (ng/mL)

BMI

Rho = -0.33
P = 0.018

B

Log [IgE] Concentration (ng/mL)

Body weight (kg)

Rho = -0.34
P = 0.016

C

Log [IgE] Concentration (ng/mL)

Body fat mass (kg)

Rho = -0.34
P = 0.023
Figure 2

A. Body weight (g) vs. Age (week) for WT (n=15) and Fcer1a−/− (n=15) with HFD. *P<0.001.

B. Food intake (g/day), Lean mass (g), and Fat mass (g) over time for WT (n=8) and Fcer1a−/− (n=6). *P<0.001.

C. Glucose (mg/mL) over time for WT (n=15) and Fcer1a−/− (n=15). *P<0.001.

D. Plasma insulin (ng/mL) over time for WT (n=7) and Fcer1a−/− (n=7). *P<0.02, **P<0.001.

E. Insulin secretion (% islet insulin content) at different glucose concentrations (2.8 mM, 11.1 mM, 16.7 mM) with WT (n=15) and Fcer1a−/− (n=15). *P<0.001.

F. FcR1a mRNA (fold change) over time for WT (n=15) and Fcer1a−/− (n=15).

G. Plasma IgE (μg/mL) with WT (n=15) and Fcer1a−/− (n=15).

H. Plasma IgE (ng/WAT) with WT (n=15) and Fcer1a−/− (n=15). *P<0.003.

I. Plasma SAA (serum amyloid A), IL-6, and MCP-1 (pg/mL) for WT (n=15) and Fcer1a−/− (n=15).
Figure 4

A

B

C

D

E

F

G

H

I

WT

Fcer1a−/−

Chow

HFD

Fcer1a

Mac-2

Fcer1a

CD3

Chow

HFD

0

0.1

0.15

P<0.001

P<0.001

P<0.001

P<0.001

WT

Fcer1a−/−

p-AKT

p-JNK

p-AKT/AKT

p-JNK/JNK

WT

Fcer1a−/−

AKT

JNK

β-Actin

β-Actin

WT

Fcer1a−/−

p-EBPα

C/EBPα

β-Actin

β-Actin

WT

Fcer1a−/−

CEBPα mRNA

(μg/100 mg)

WT

Fcer1a−/−

PPARγ

β-Actin

β-Actin

WT

Fcer1a−/−

Glut4

β-Actin

β-Actin

WT

Fcer1a−/−

p-0.005

p-0.002

p-0.001

p-0.001

p-0.031
Figure 6

A. Graph showing TUNEL (%) versus Adipogenesis (day) for Control and IgE (50 µg/mL) with statistical significance marked as *P<0.05 and **P<0.001.

B. Images showing control cultures (Day 6 and Day 8) and IgE (50 µg/mL) treated cultures (Day 6 and Day 8).

C. Images comparing preadipocyte and adipocyte cultures with control and IgE (50 µg/mL) treatment.

D. Bar graph showing cell viability (OD495 nm, CCK-8) with increasing IgE concentration (0, 1, 10, 50 µg/mL).

E. Bar graph showing cytotoxicity (OD495 nm, LDH) with increasing IgE concentration (0, 1, 10, 50 µg/mL).

F. Bar graph showing 2DG6P (µM) uptake with increasing IgE concentration (0, 1, 10, 50 µg/mL).

G. Western blot analysis showing expression levels of Glut4, p-AKT, AKT, and β-Actin with and without IgE treatment.

H. Western blot analysis showing expression levels of FcεR1a, Glut4, p-AKT, AKT, and β-Actin with control and FcεR1a siRNA treatment.
Figure 7