SUPPLEMENTARY DATA

Deletion of Protein Kinase C lambda in POMC neurons predisposes to diet-induced obesity

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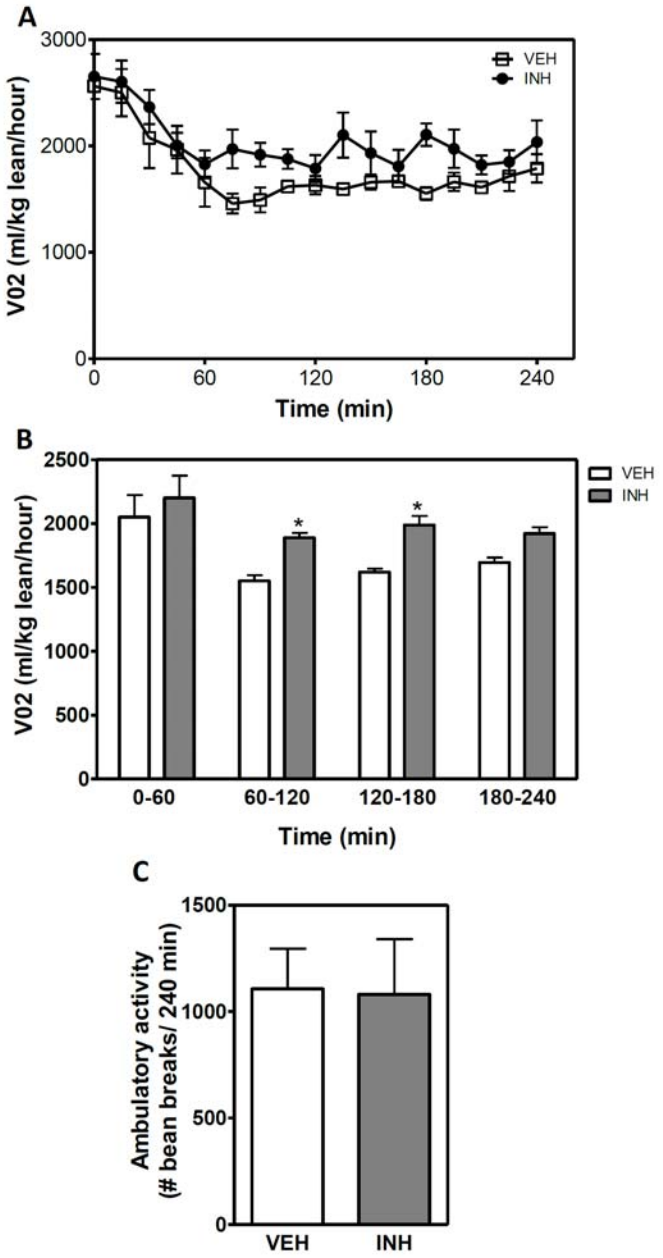
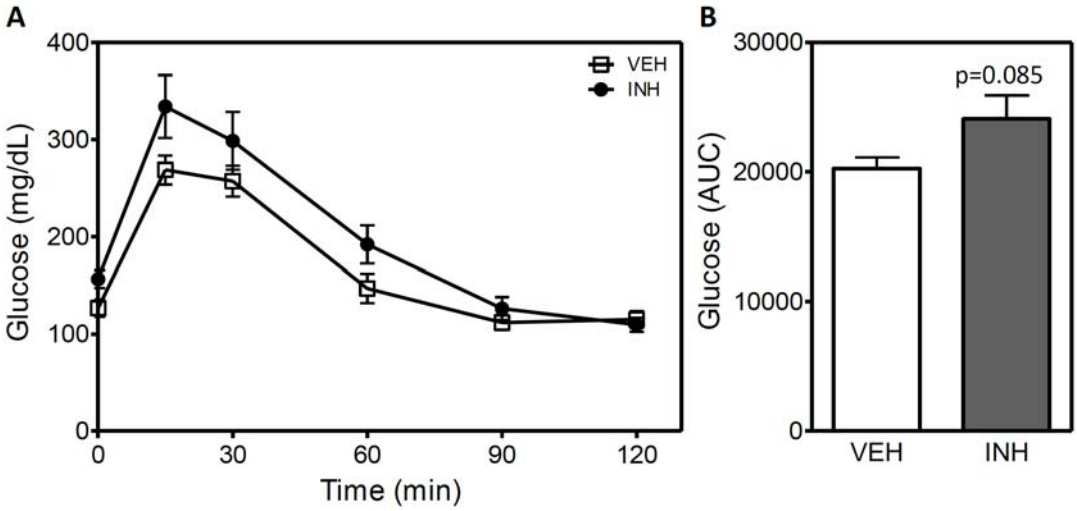
SUPPLEMENTARY DATA

Supplementary Figure 1. Central administration of aPKC inhibitor increases energy expenditure but not ambulatory activity.
(A) Continuous VO2 trace (data points every 15 min) during 4 h of the light cycle immediately after ICV (3rd ventricle) injection of aPKC inhibitor (INH) or vehicle (VEH). **(B)** VO2 data from A in 60 min bins. Elevated Bin 0-60 min values reflect handling and injection stress. **(C)** 4 h total ambulatory activity. Data are presented as mean ± SEM of 5 rats per group. *p<0.05.



SUPPLEMENTARY DATA

Supplementary Figure 2. Central administration of aPKC inhibitor increases glucose intolerance in mice.
(A) Intraperitoneal glucose tolerance test (2 g/kg) in chow-fed mice 4 h post-ICV injection of aPKC inhibitor (INH) or vehicle (VEH). **(B)** Glucose area under the curve (AUC) analysis of data from panel D. Data are presented as mean ± SEM of 6 animals per group.



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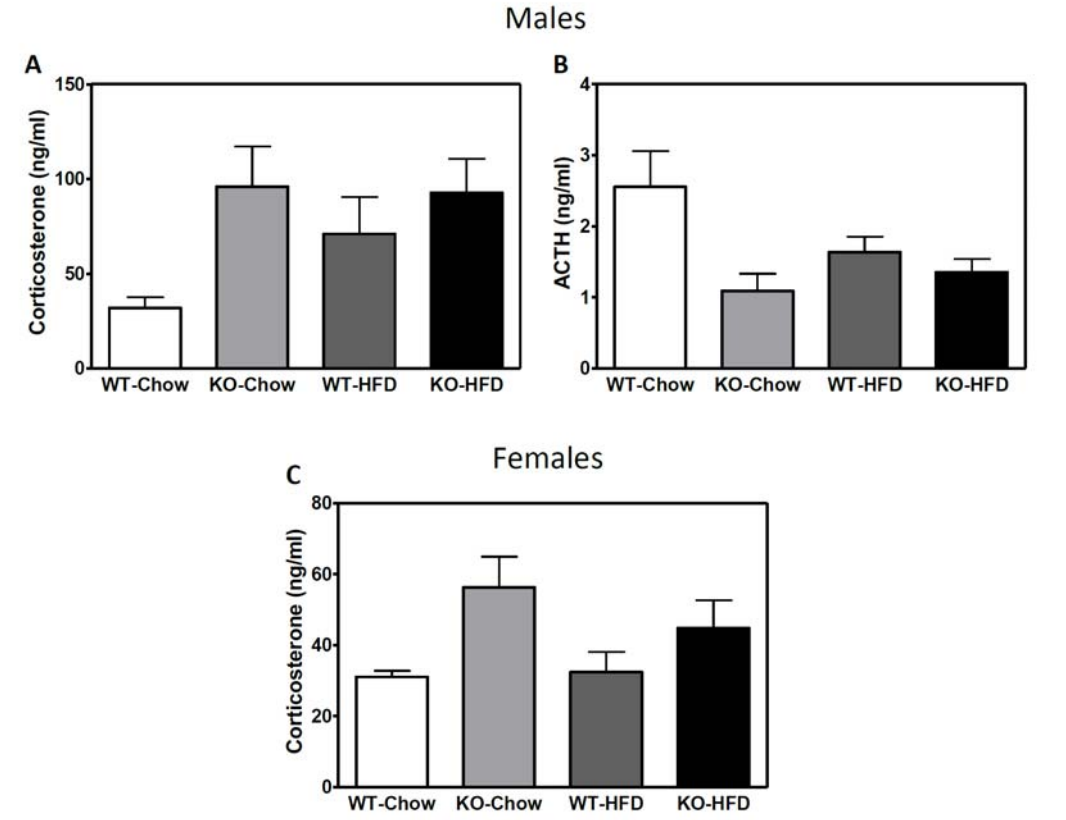
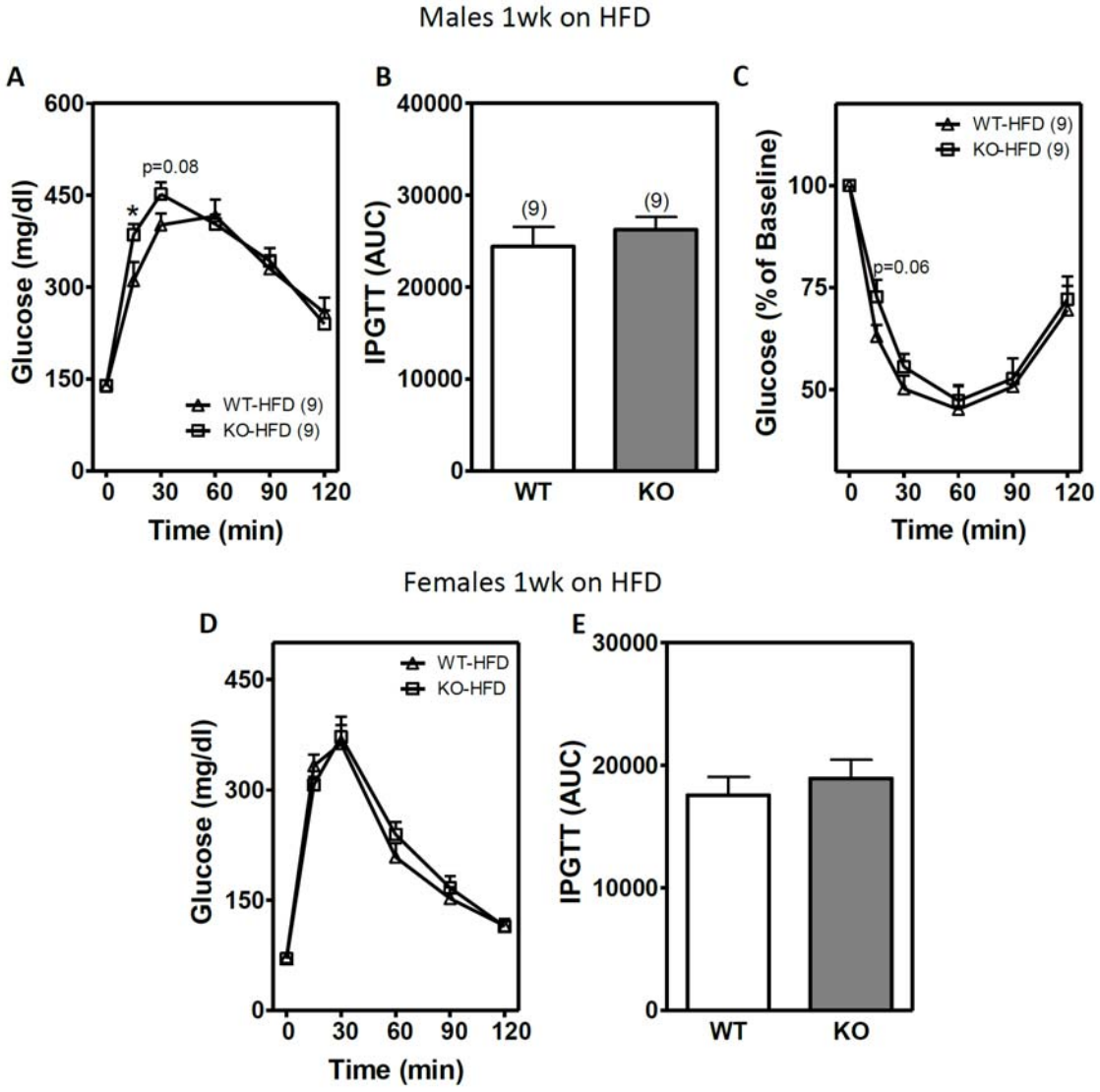
Supplementary Figure 3. POMC-λKO **mice have diet-independent elevation of corticosterone.** Serum corticosterone (males and females) and ACTH (males) levels from WT and POMC-λKO mice fed for 7 weeks with chow or HFD. Data are presented as mean ± SEM of 5-10 animals per group.



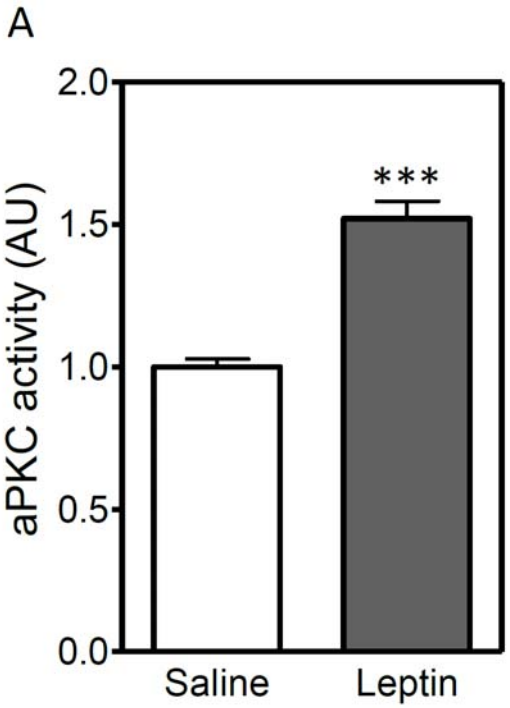
SUPPLEMENTARY DATA

Supplementary Figure 4. GTT and ITT in weight-matched WT and POMC-λKO mice.
(A) GTT (2 g/kg) on male WT and POMC-λKO mice after 1 week on HFD. *p<0.05. **(B)** Area under the curve (AUC) analysis of A. **(C)** ITT (0.75 U/kg) on male WT and POMC- λKO mice after 1 week on HFD. Data presented as percentage of baseline. **(D)** GTT (2 g/kg) on female WT and POMC-λKO mice after 1 week on HFD. **(E)** Area under the curve (AUC) analysis of D. Data are presented as mean ± SEM of 5-9 animals per group.



SUPPLEMENTARY DATA

Supplementary Figure 5. Physiological leptin replacement increases hypothalamic aPKC activity. **(A)** Overnight-fasted *ob/ob* mice received leptin (100 ng/h) or saline vehicle by continuous SC infusion. aPKC enzymatic activity was measured in hypothalamic tissue and normalized to saline control. Data are presented as mean ± SEM of 6 animals per group. ***p<0.001.



SUPPLEMENTARY DATA

Supplementary Figure 6. aPKC is expressed in leptin-responsive POMC neurons.
A) Immunofluorescence colocalization of PKC-λ/ζ (aPKC) and POMC (GFP), and B) pSTAT3 and POMC was performed in adjacent 8μm-thick hypothalamic sections from *Pomc-Tau-Gfp* mice injected with leptin (5μg/g ip) 1hr before sacrifice. White arrows indicate individual POMC neurons present in both sections that show colocalization of all markers. 3V = third ventricle. Images are representative of data from 3 animals.