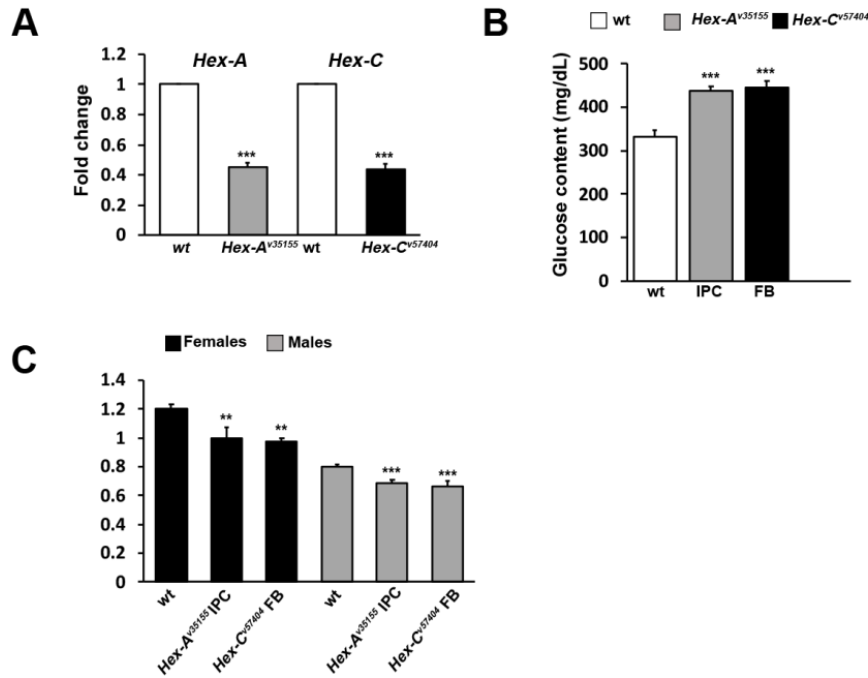## Supplementary figures

Figure S1. *GCK depletion in Hex-A^{v35155} or Hex-C ^{v57404} RNAi flies results in diabetic phenotypes.* **(A)** RT-qPCR analysis showing that both *Hex-A^{RNAi}* and *Hex-C^{RNAi}* individuals express significantly less transcript with respect to control. Fold changes in RNA levels relative to control were normalized to *α-tubulin* levels. Columns indicate the mean value ± SEM from three biological replicates. RNAs from *Hex-A^{RNAi}* and *Hex-C^{RNAi}* individuals were extracted from whole larvae and fat bodies respectively. **(B)** Glucose content in larval hemolymph. *Hex-A* or *Hex-C* genes have been silenced in insulin producing cells (IPC) or in fat body (FB). Columns are the means of five independent sample measurements ± SEM. **(C)** *Hex-A^{RNAi}* and *Hex-C^{RNAi}* adults display a smaller body size compared to wild-type. Each column represents the mean weight (± SEM) of single flies. *,*** Significantly different in the Student's t test with p< 0.05 and p<0.001 respectively.
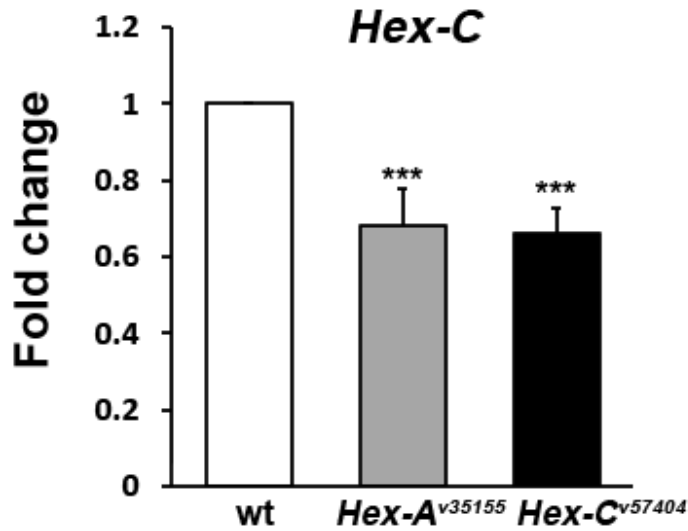
Figure S2. *Hex-A regulates Hex-C expression.* RT-qPCR analysis showing that *Hex-C* expression is reduced in *Hex-A*[RNAi] larvae from v35155 RNAi line. Fold changes in RNA levels relative to control were normalized to *α-tubulin* levels. Columns indicate the mean value ± SEM from three biological replicates. *** Significantly different in the Student's t test with p < 0.001.
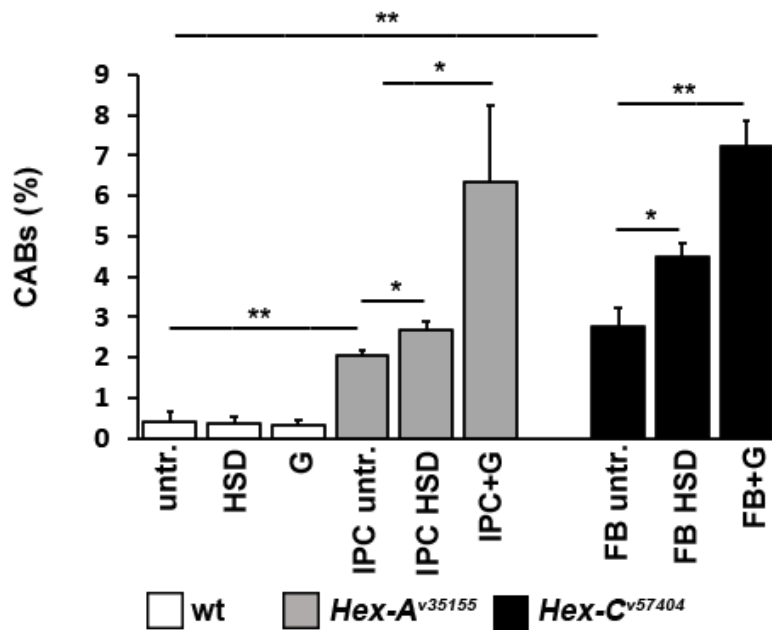

Figure S3. *GCK depletion causes CABs in brains from Hex-A*[v35155] *and Hex-C* [v57404] *RNAi larvae*. Percentage of CABs in brains from larvae grown in standard or HSD medium and in brains treated with 1% glucose (G). Each column represents the mean value ± SEM obtained by scoring at least 800 cells for each condition. *,** Significantly different in the Student's t test with p < 0.05 and p<0.01 respectively.
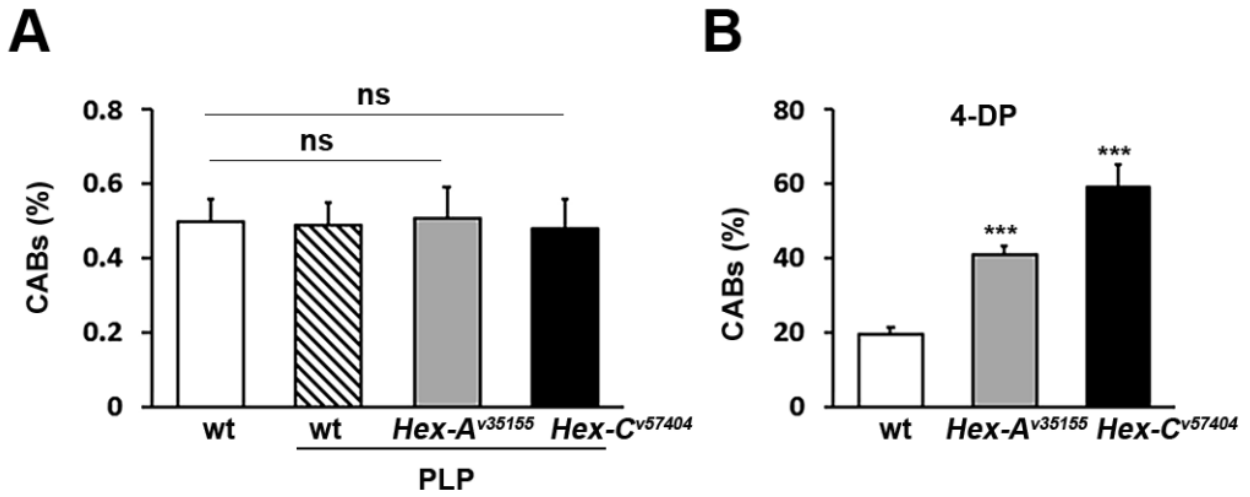
Figure S4. *CABs are rescued by PLP and enhanced by 4-DP in Hex-A^{v35155} and Hex-C^{v57404} RNAi neuroblasts.* **(A)** Percentage of CABs in neuroblasts from larvae grown in PLP (1mM) supplemented medium. Each column represents the mean value ± SEM obtained by scoring at least 800 cells in six brains. **(B)** Percentage of CABs in neuroblasts from 2mM 4-DP treated larvae. *** Significantly different in the Student's t test with p< 0.001; ns=no significant