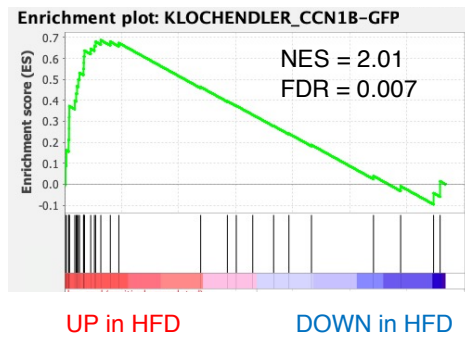
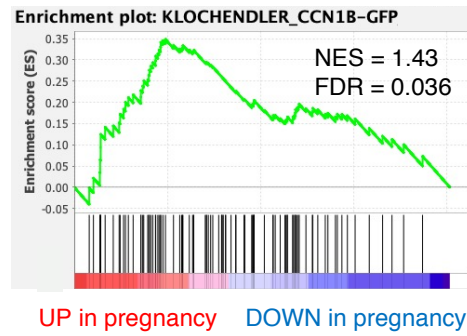


Supplementary Figure S1

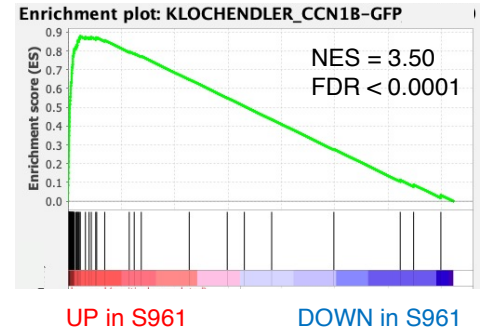
A



B



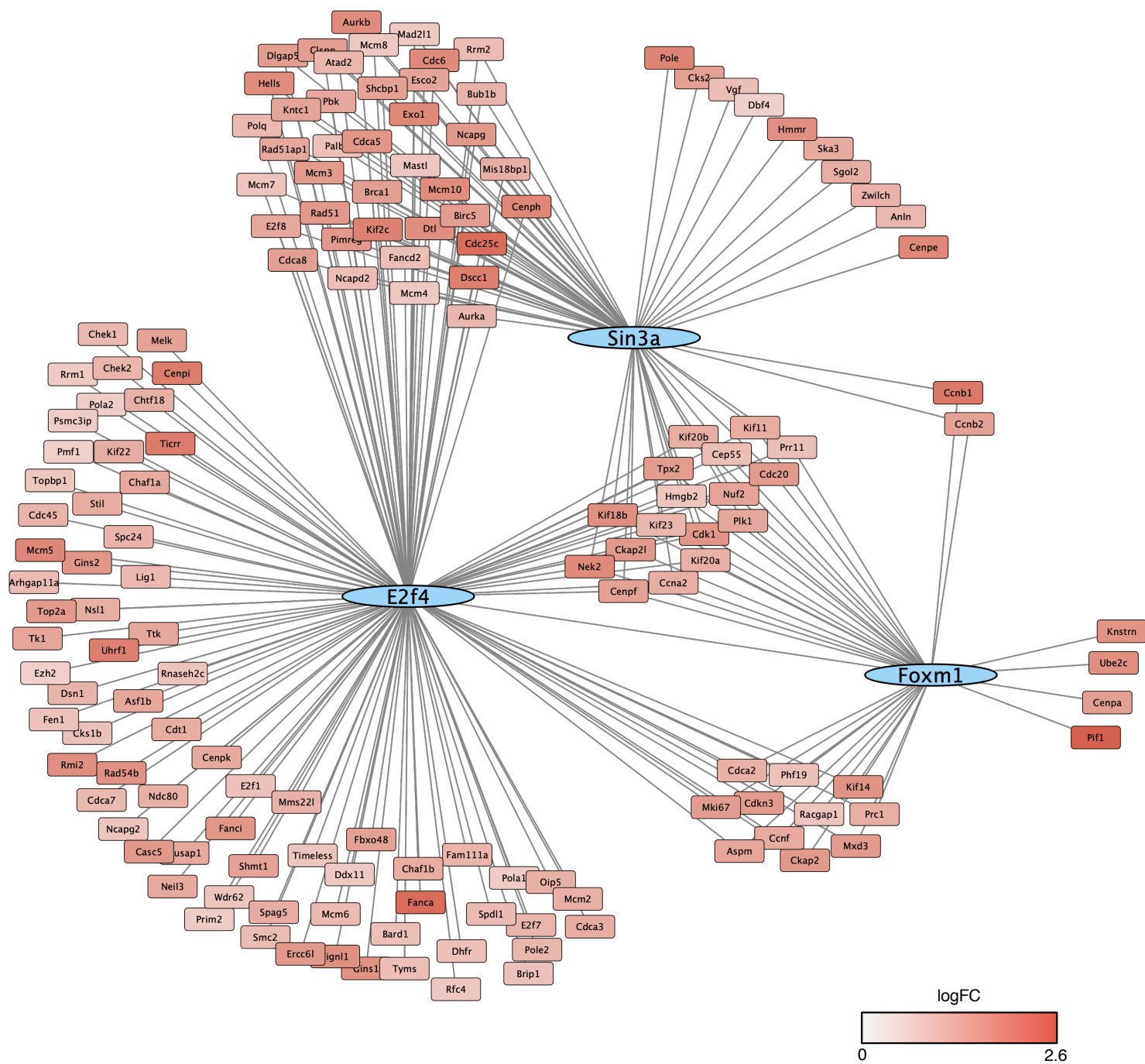
C



Supplementary Figure S1. Signature of proliferating β cells in other datasets

(A) GSEA plot for upregulated DEGs in sorted proliferating β cells (Klochender et al., 2015), on a ranked list of DEGs from islets isolated from HFD-fed (Cruciani et al., 2017), (B) pregnant (Goyvaerts et al., 2016) or (C) S961-treated mice (Dumayne et al., 2020). NES and q-value as indicated.

Supplementary Figure S2



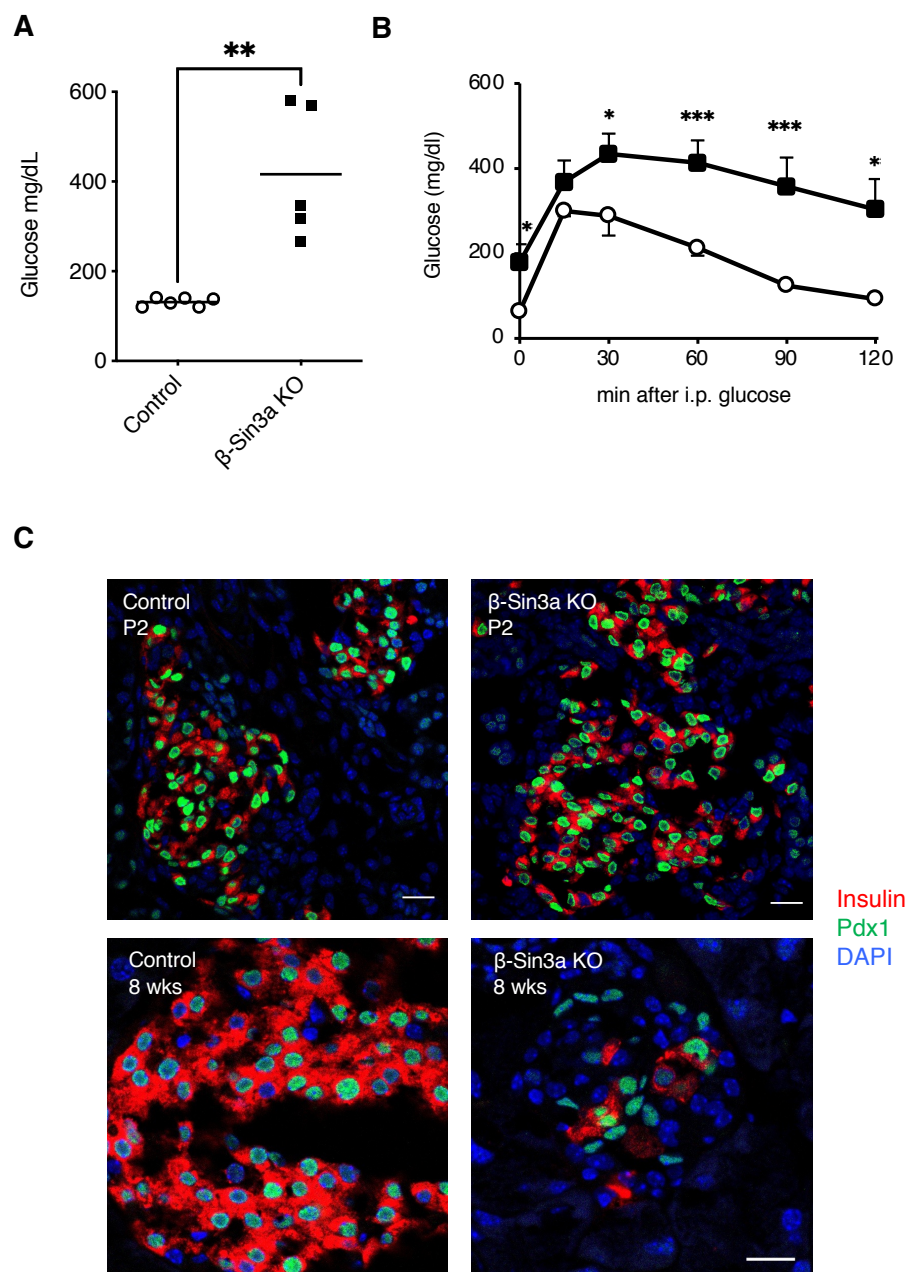
Supplementary Figure 2. Transcription factor enrichment of upregulated DEGs in OIO islets, highlighting networks of genes associated with E2f4, Foxm1 and Sin3a.

Supplementary Figure S3

Transcription factor enrichment analysis					
Sorted proliferating β cells (mouse)			Islets from cadaveric donors treated with Harmine + LY364947 (human)		
TF	Overlap	Adj. P-value	TF	Overlap	Adj. P-value
E2f4	147	1.06×10^{-147}	E2F4	93	6.01×10^{-68}
Foxm1	42	1.59×10^{-53}	FOXM1	20	1.54×10^{-17}
Sin3a	83	3.65×10^{-40}	SIN3A	53	1.29×10^{-15}
Klochendler et al., 2015			Wang et al., 2019		

Supplementary Figure 3. Transcription factor enrichment analyses of the top 250 upregulated DEGs from sorted proliferating β cells (Klochendler et al., 2015) (left), or human islets treated with Harmine + LY364947 (Wang et al., 2019) (right).

Supplementary Figure 4



Supplementary Figure 4.

(A) Glucose and insulin levels in 8-week-old female β -Sin3a KO (black squares) and control mice (white circles), after 4h fasting.

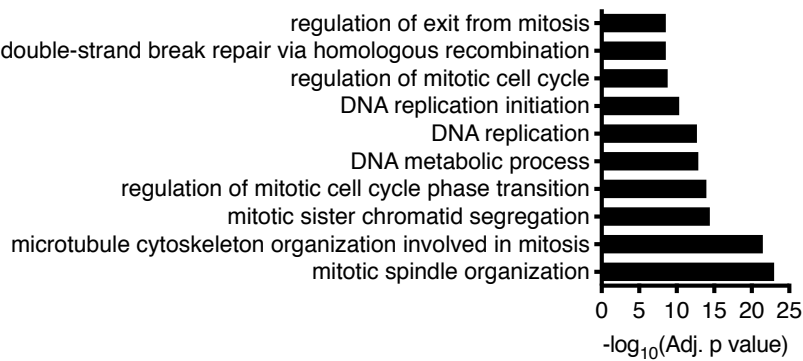
(B) Glucose tolerance test in 8-week-old females β -Sin3a KO (black squares) and control mice (white circles).

(C) Representative images Pdx1 and insulin staining in pancreatic sections from β -Sin3a KO, P2 (above) and 8 weeks old mice (below).

Supplementary Figure 5

Sin3a associated genes

Anln	Cdc20	Ckap2l	Fam64a	Kif2c	Ncapd2	Rad51
Atad2	Cdc25c	Cks2	Fancd2	Kntc1	Ncapg	Rad51ap1
Aurka	Cdc6	Clspn	Hells	Mad2l1	Nek2	Rrm2
Aurkb	Cdca5	Dbf4	Hmgb2	Mastl	Nuf2	Sgol2
Birc5	Cdca8	Dlgap5	Hmmr	Mcm10	Palb2	Shcbp1
Brca1	Cdk1	Dscc1	Kif11	Mcm3	Pbk	Ska3
Bub1b	Cenpe	Dtl	Kif18b	Mcm4	Plk1	Tpx2
Ccna2	Cenpf	E2f8	Kif20a	Mcm7	Pole	Vgf
Ccnb1	Cenph	Esco2	Kif20b	Mcm8	Polq	Zwilch
Ccnb2	Cep55	Exo1	Kif23	Mis18bp1	Prr11	



Supplementary Figure 5. All Sin3a-associated genes retrieved from the top 250 upregulated DEGs in OIO islets (left), and GO Biological Processes associated with Sin3a-associated DEGs