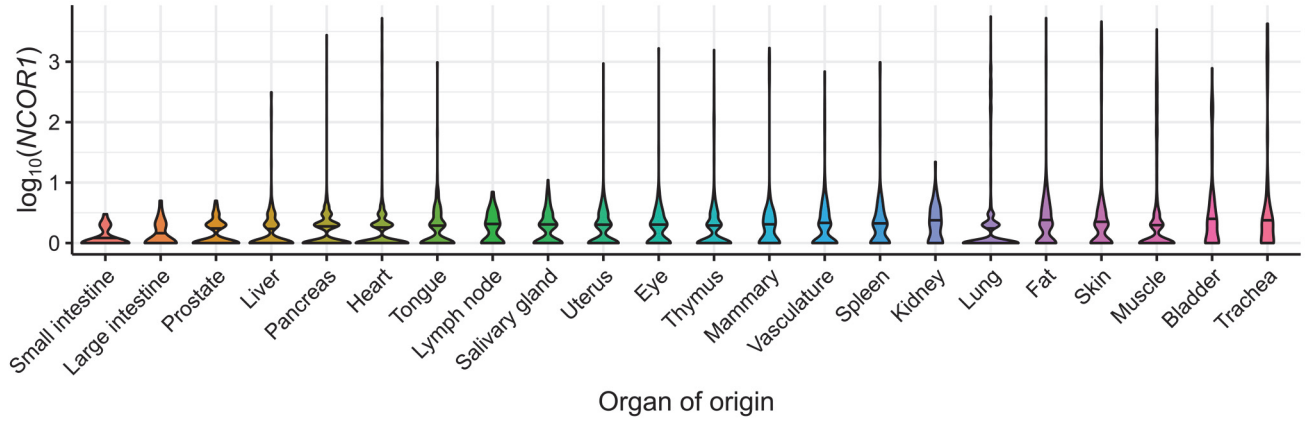
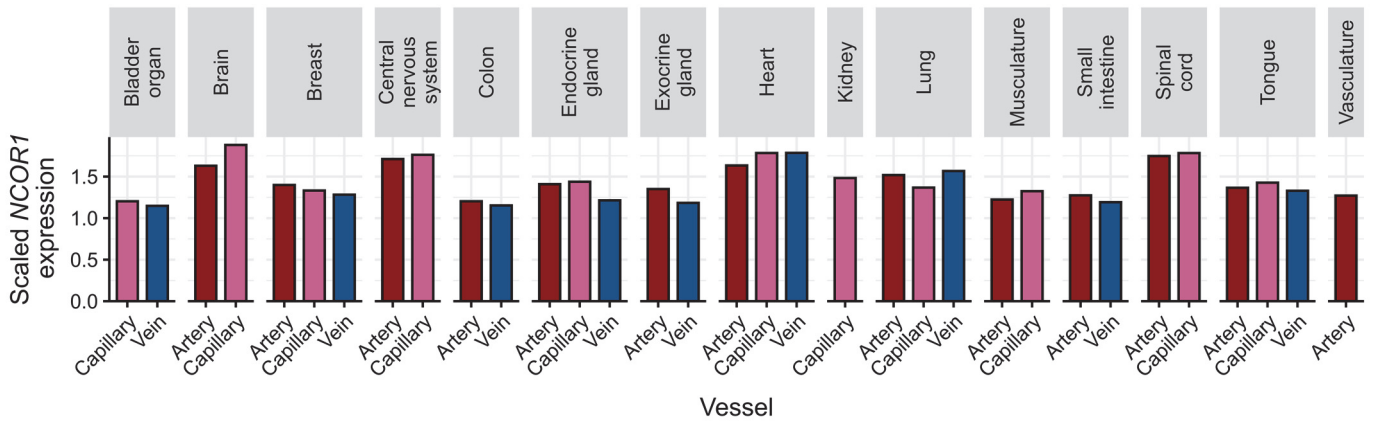
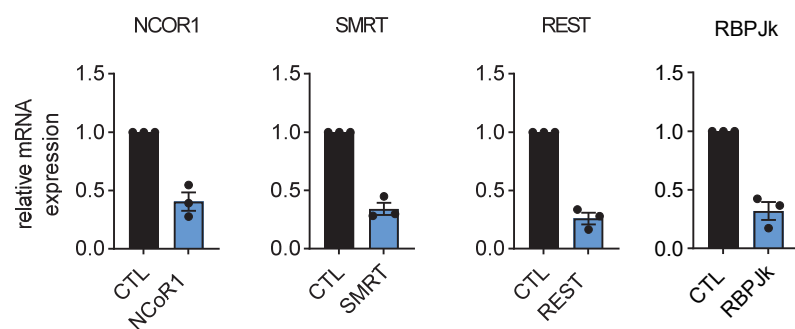
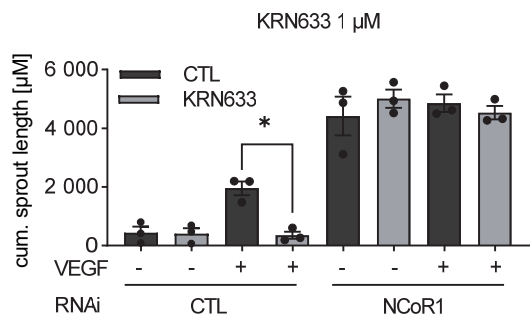


**A****B**

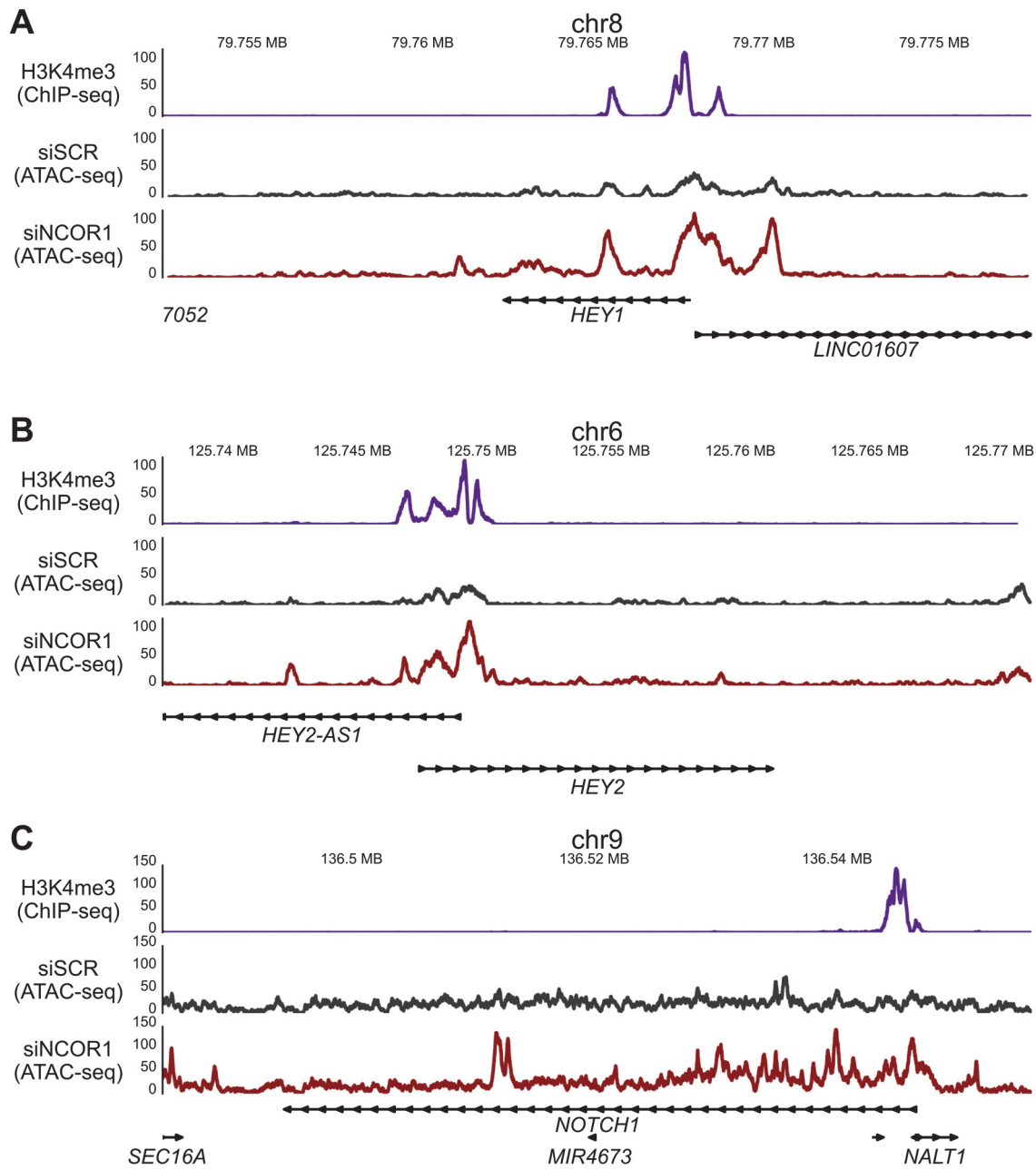
**Supplementary Figure S1 : *NCOR1* expression in endothelial cells originating from different organs (A)** Log-normalised *NCOR1* expression in endothelial cells and **(B)** *NCOR1* expression in different vessel types, originating from different organs. Data obtained from the scRNA-sequencing compenium *Tabula Sapiens*.



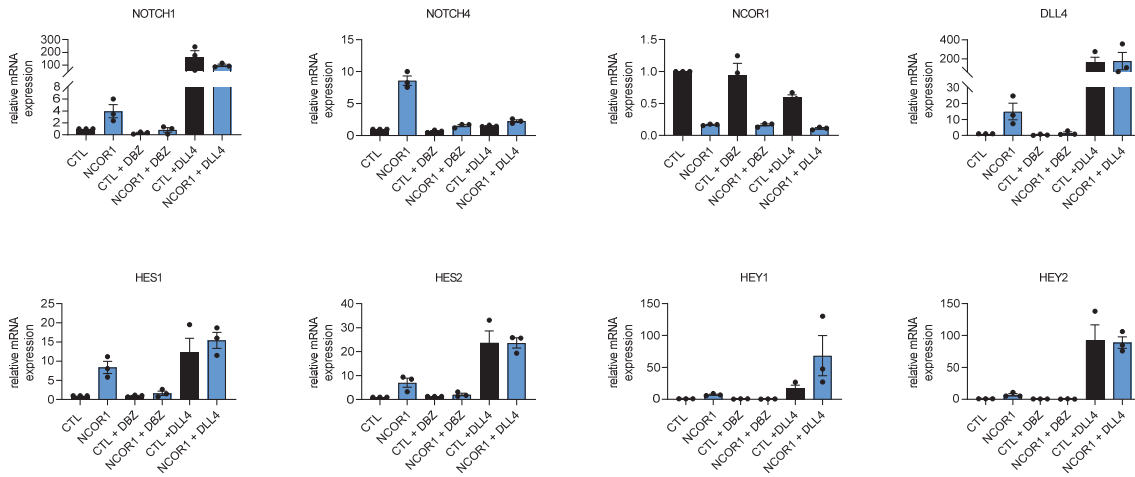
**Supplementary Figure S2 : siRNA against nuclear repressors and RBPJk yields downregulation of the target RNA.** RT-qPCR of *NCOR1*, *SMRT*, *REST* or *RBPJk* after siRNA-mediated knockdown of the respective gene. Scrambled siRNA served as a negative control (CTL). n=3.



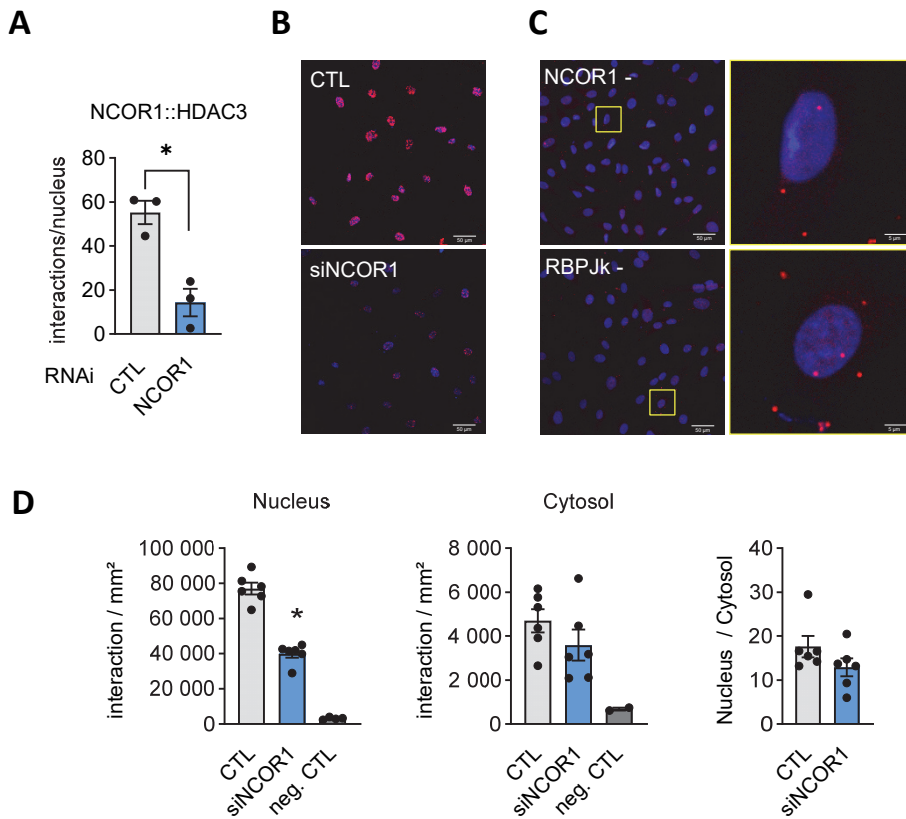
**Supplementary Figure S3 : VEGF signaling is not mediating the effect of *NCOR1* knockdown.** Spheroid outgrowth assay after siRNA-mediated knockdown of *NCOR1* or scrambled siRNA as negative control (CTL). Spheroids were treated as indicated (with KRN633 (1 $\mu$ M)) as well as with or without VEGF-A. Quantification of cumulative sprout length per spheroid is shown. n=3, One-way ANOVA. \*P<0.05.



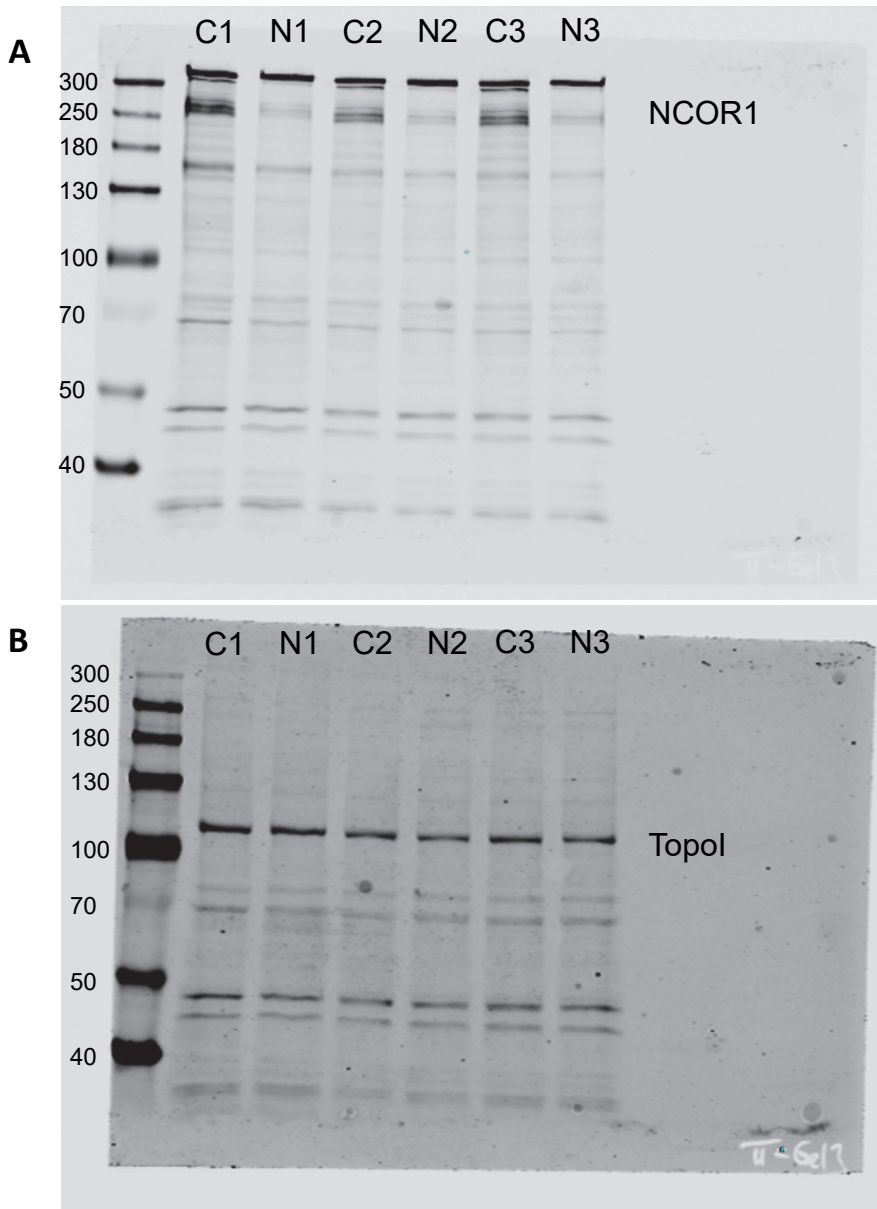
**Supplementary Figure S4 : ATAC-sequencing of the Notch target genes (A) *HEY1*, (B) *HEY2* and (C) *NOTCH1*.** H3K4me3 HUVEC ChIP-sequencing data were obtained from the ENCODE to mark active promoters.



**Supplementary Figure S5 : Effect of dibenzazepine and NCOR-siRNA-induced gene expression.** RT-qPCR of *NOTCH1*, *NOCTH4*, *NCOR1*, *DLL4*, *HES1*, *HES2*, *HEY1* and *HEY2* in cells treated with scrambled siRNA (CTL) or *NCOR1*-siRNA. Scrambled n=3. Subgroups were pre-treated with dibenzazepine (DBZ, 1  $\mu$ M) for 24h or cultured on DLL4 coated plates for 24h. One-way ANOVA. \*P<0.05.



**Supplementary Figure S6: Control experiments for the Duolink proximity ligation assay. (A&B)** Duolink proximity ligation assay for NCOR1-HDAC3. Red signal indicates duolink PLA signal (546nm), blue indicates DAPI. **(A)** Quantification of NCOR1-HDAC3 interactions per nucleus. n=3, Unpaired t-test. \*P<0.05. **(B)** Representative images for scrambled siRNA (CTL) and *NCOR1* knockdown (siNCOR1). **(C)** Representative images for the negative control (only one primary antibody, both secondary antibodies). Omitted antibodies are marked in the figure. **(D)** Quantification of NCOR1-RBPJk interactions for the compartments indicated.



**Supplementary Figure S7 : Uncropped Western Blot images of NCOR1 and Topoisomerase.** Western Blot of **(A)** NCOR1 (NCOR1) and **(B)** Topoisomerase (Topol) with and without siRNA-mediated knockdown of NCOR1 (N1-3). Scrambled siRNA served as a negative control (C1-3). n=3.