

## SUPPLEMENTAL FIGURE LEGENDS

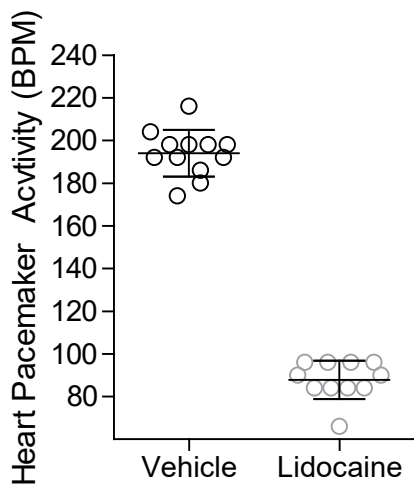
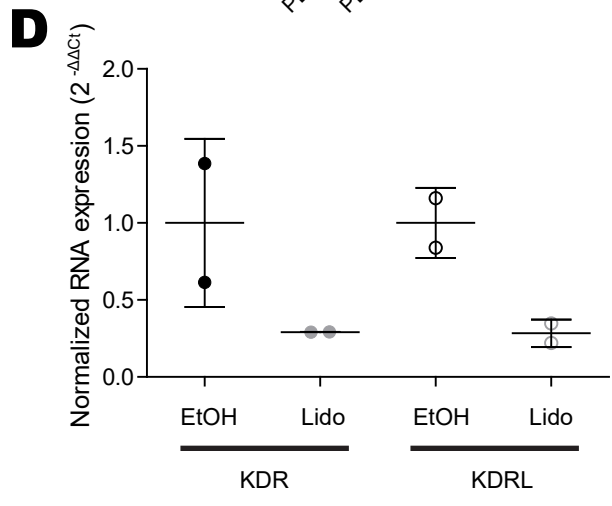
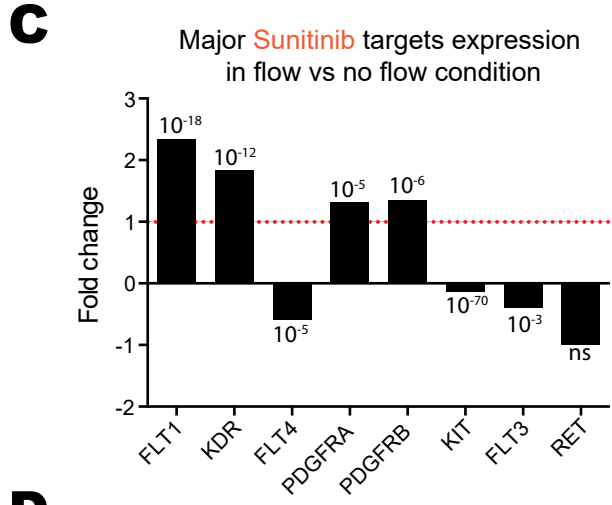
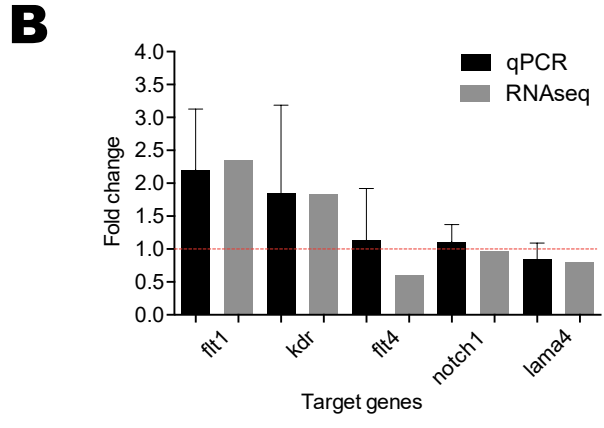
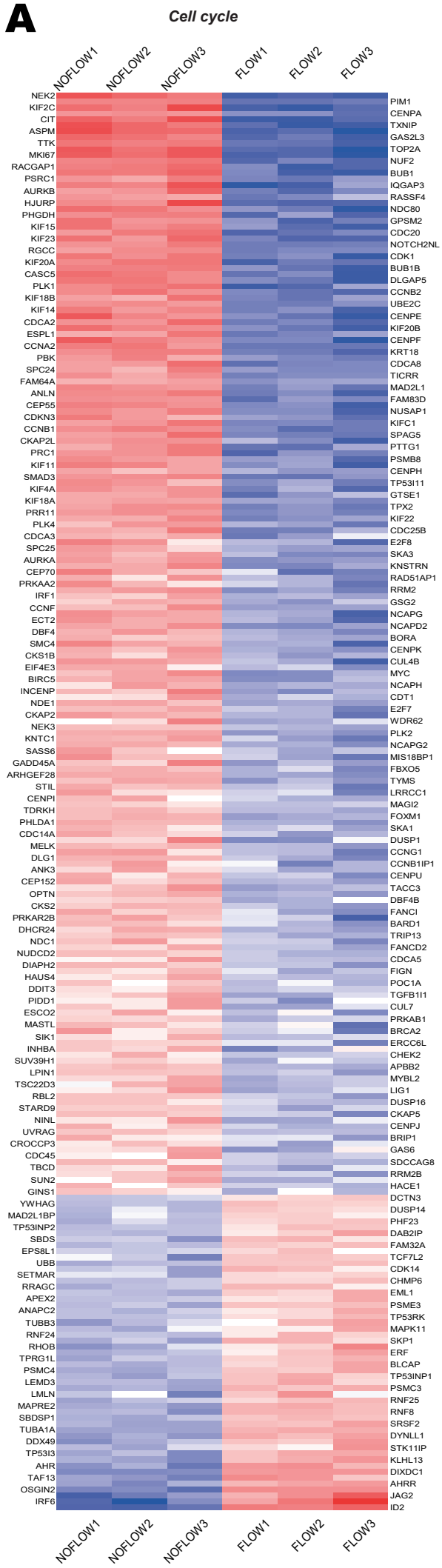
**Figure S1: Gene expression in HUVEC cells treated with or without flow. A** – Fold changes heatmap, based on GO class: Cell Cycle, showing significantly impacted genes in flow condition compared to no flow. Each lane represents a gene. Gene names have been alternatively written on left and right of the graph to ease reading. **B** – RT-qPCR data confirming RNA sequencing results. Graphic shows the comparison between RT-qPCR and RNAseq. Graph shows biological replicates, Mann Whitney test. **C** – Fold change of expression level (RNAseq) of the major sunitinib targets in flow vs no flow condition (numbers are adjusted p-values). **D** – RNA expression of KDR and KDRL in *Tg(fli1a:EGFP)* embryos treated with vehicle or lidocaine for 14h prior to tissue dissociation and FACS sorting of GFP+ cells. N embryos : EtOH1=42, EtOH2=43, Lido1=42, Lido2=43 (upper panel). Quantification of pacemaker activity. N embryos : EtOH=12, Lido=11 (bottom panel), Mann Whitney test.

**Figure S2: Inhibition of VEGFRs with sunitinib reduces extravasation in the caudal plexus. A** – Quantification of the effect of sunitinib on vessel architecture after 24h of treatment, N embryos: vehicle = 27, sunitinib 5  $\mu$ M = 27, Mann Whitney test. Quantification of the effect of sunitinib on blood flow after 24h of treatment, N embryos: vehicle = 12, sunitinib 2  $\mu$ M = 15, Mann Whitney test. **B** – Quantification of the effect of sunitinib on red blood cell counts after 3h or 24h of treatment with 5 and 2  $\mu$ M respectively, N embryos: vehicle 3h = 8, sunitinib 5 $\mu$ M 3h = 10, vehicle 24h = 9, sunitinib 2 $\mu$ M 24h = 11, unpaired t test. **C** – The heatmaps show the quantification and location of CTCs at 24 hpi in the caudal plexus after 24h of treatment with vehicle or 2  $\mu$ M of sunitinib. N embryos: vehicle = 13, sunitinib 2  $\mu$ M = 18, unpaired t test.

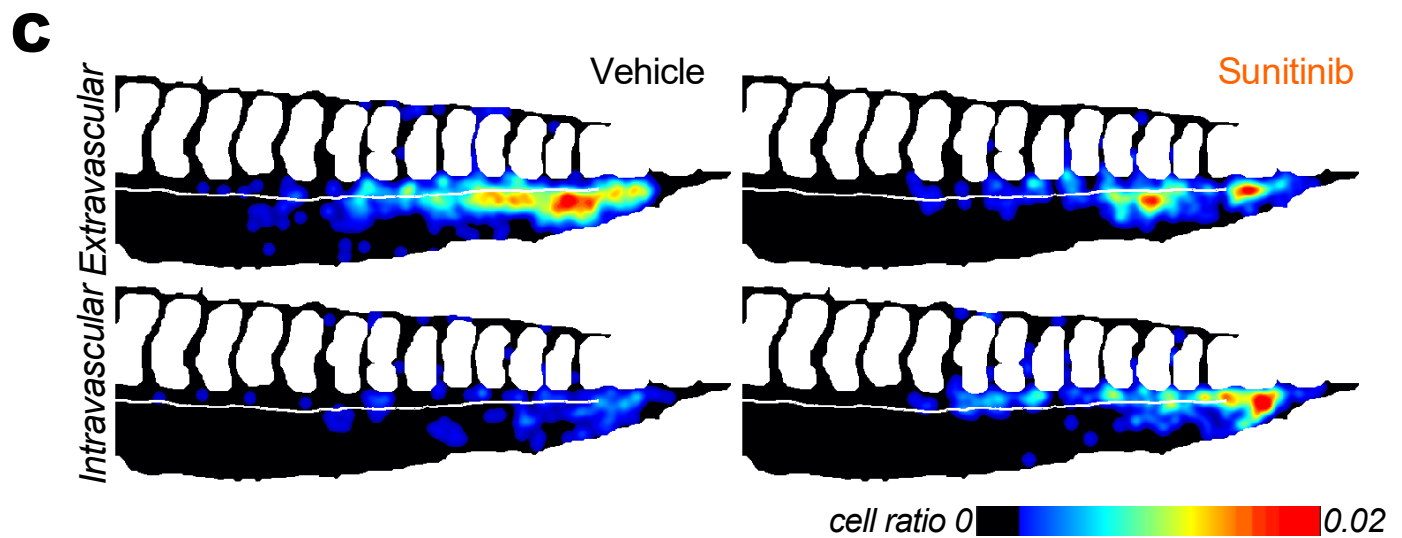
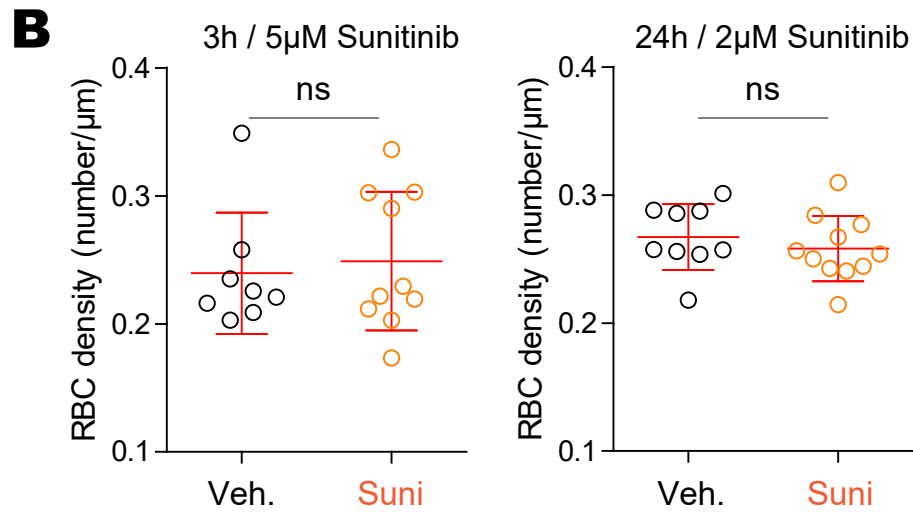
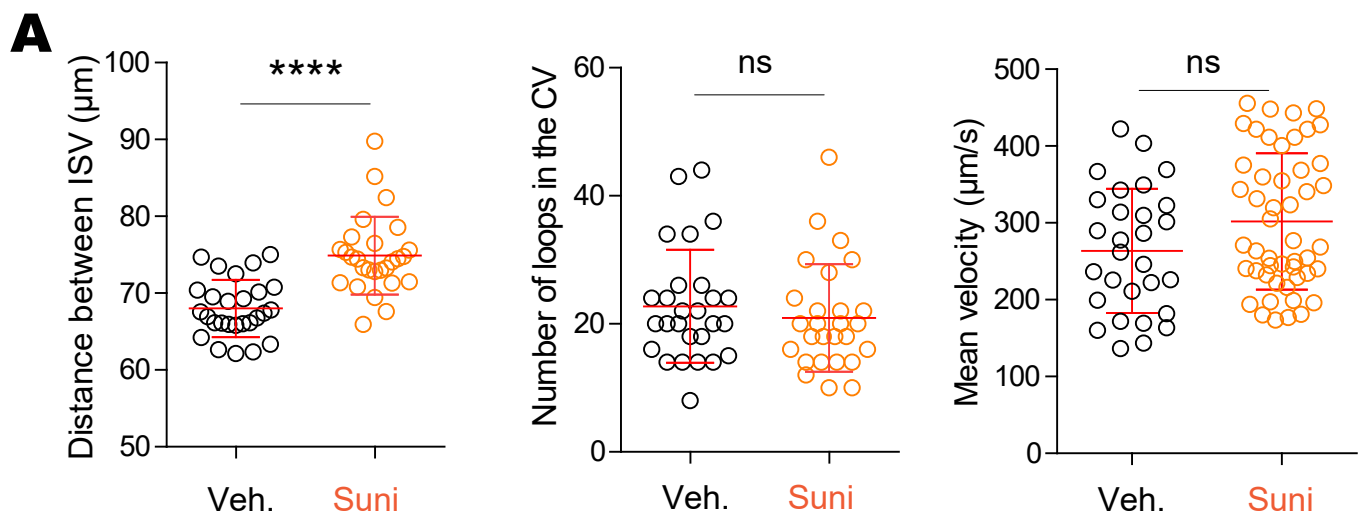
**Figure S3: Inhibition of VEGFRs with cediranib reduces extravasation in the caudal plexus. A** – Quantification of the effect of cediranib on vessel architecture after 24h of treatment, N embryos: vehicle = 10, cediranib 0.1  $\mu$ M = 15, unpaired t test. **B** – Quantification of the effect of cediranib on blood flow after 24h of treatment, N embryos: vehicle = 12, cediranib 0.1  $\mu$ M = 14, unpaired t test.

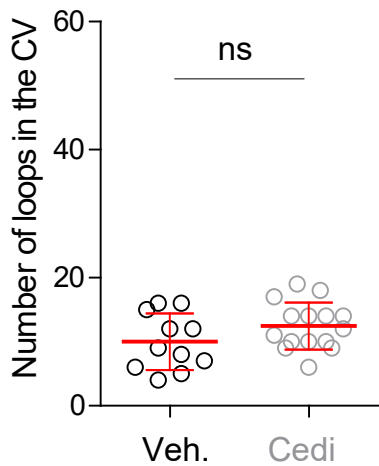
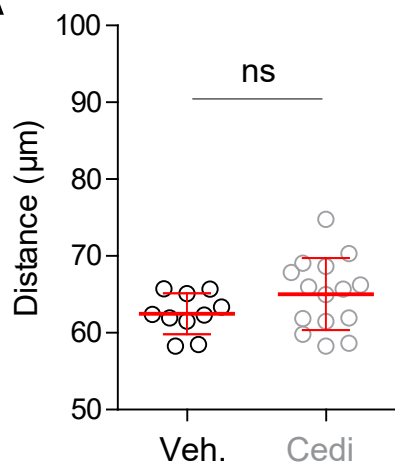
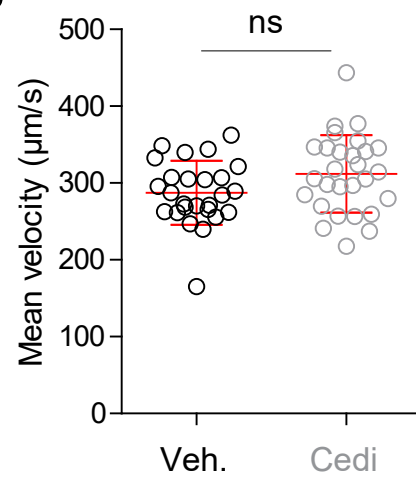
**Figure S4: Gene ontology analysis for *in vitro* RNAseq data.** Results from global Gene Ontology (GO) analysis on 'biological process' and 'cellular process', showing most significantly impacted GO classes.

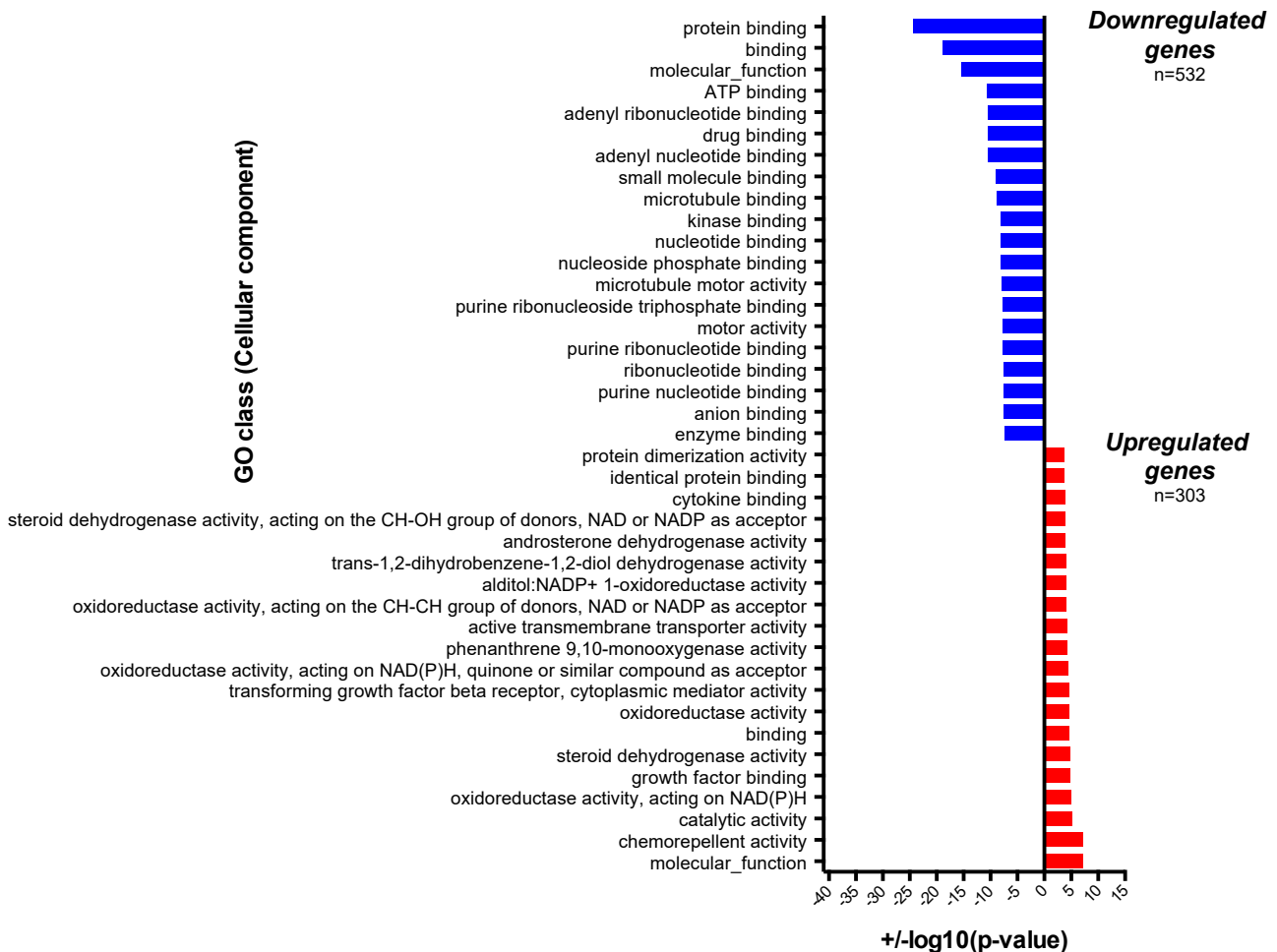
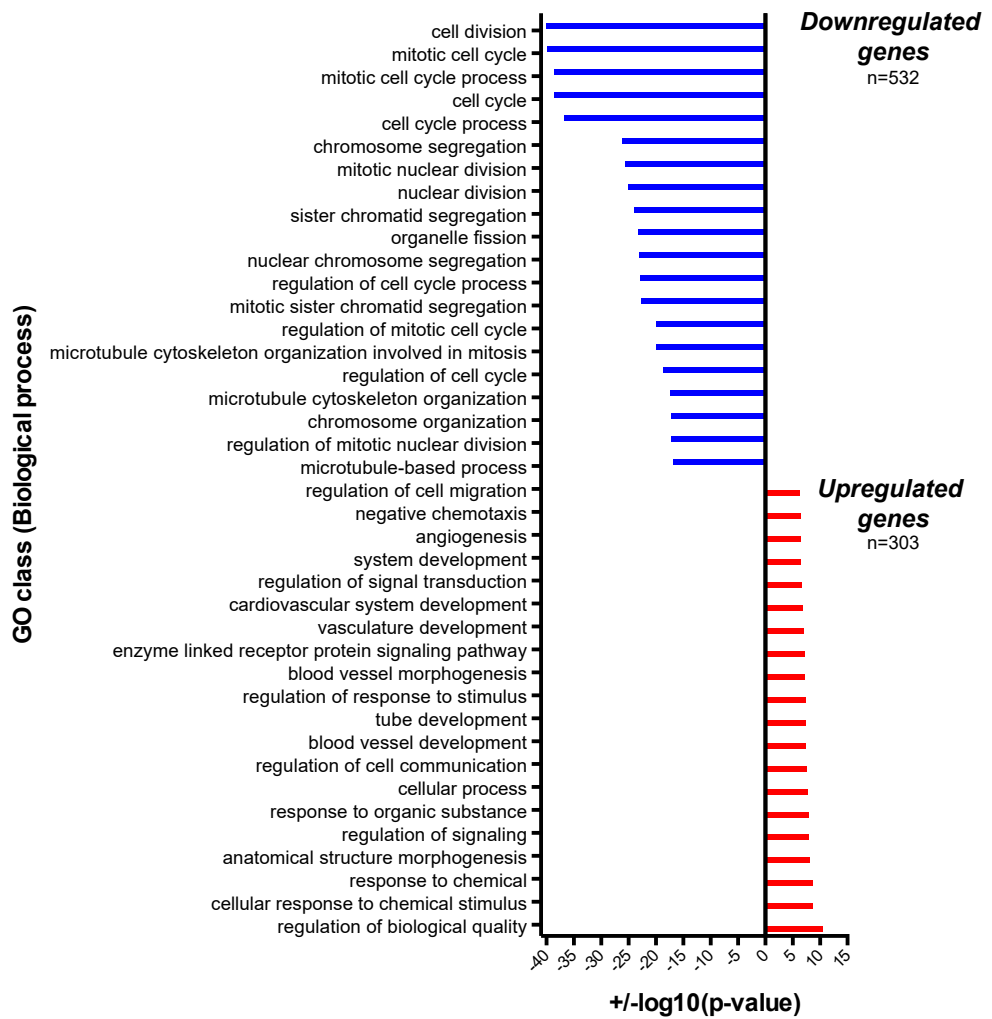
**Figure S5: Uncropped western blot membranes.** 5 independent experiments were blotted simultaneously. The protein ladder has been superposed to uncropped membrane acquisitions to display molecular weights.



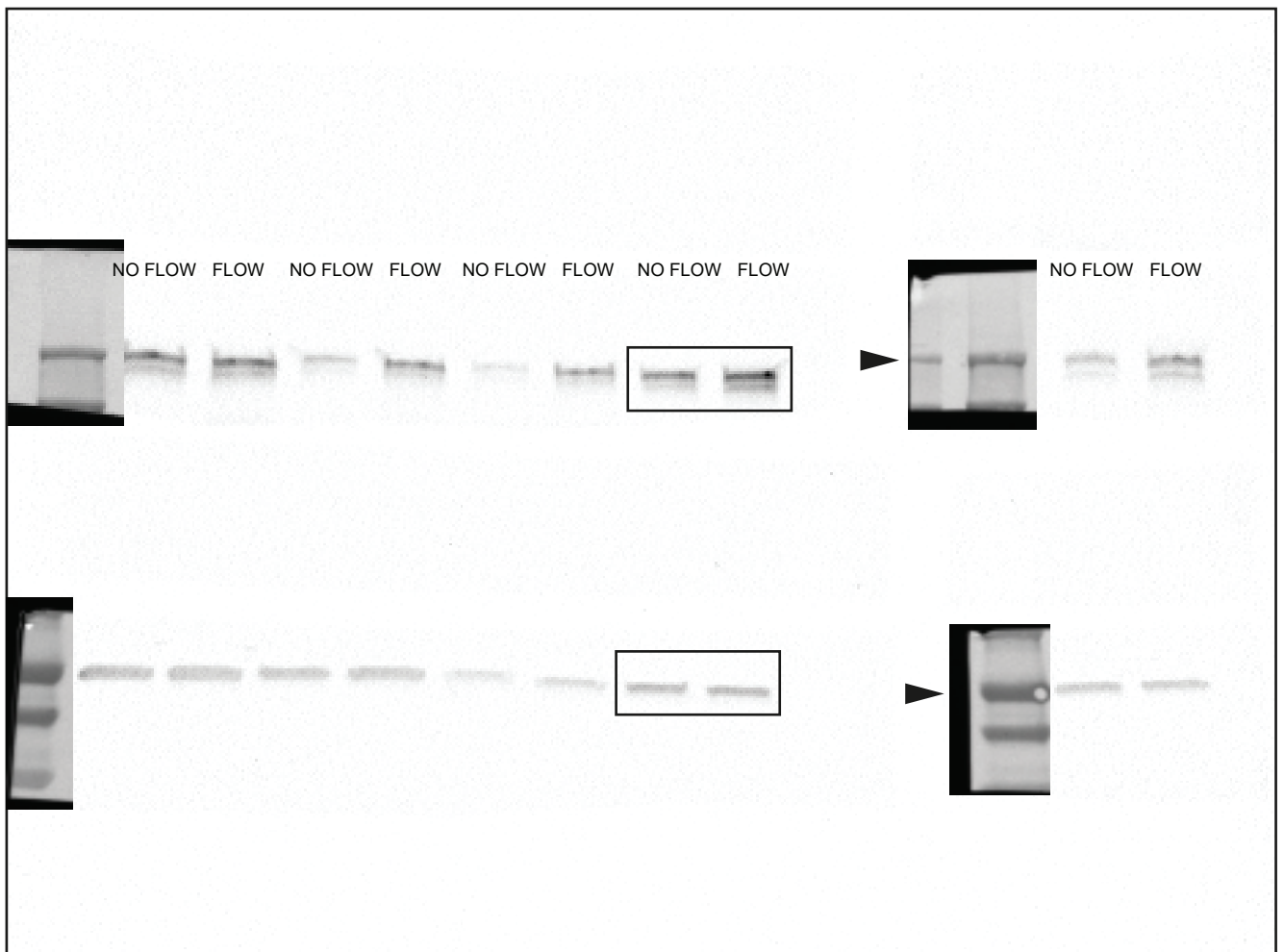
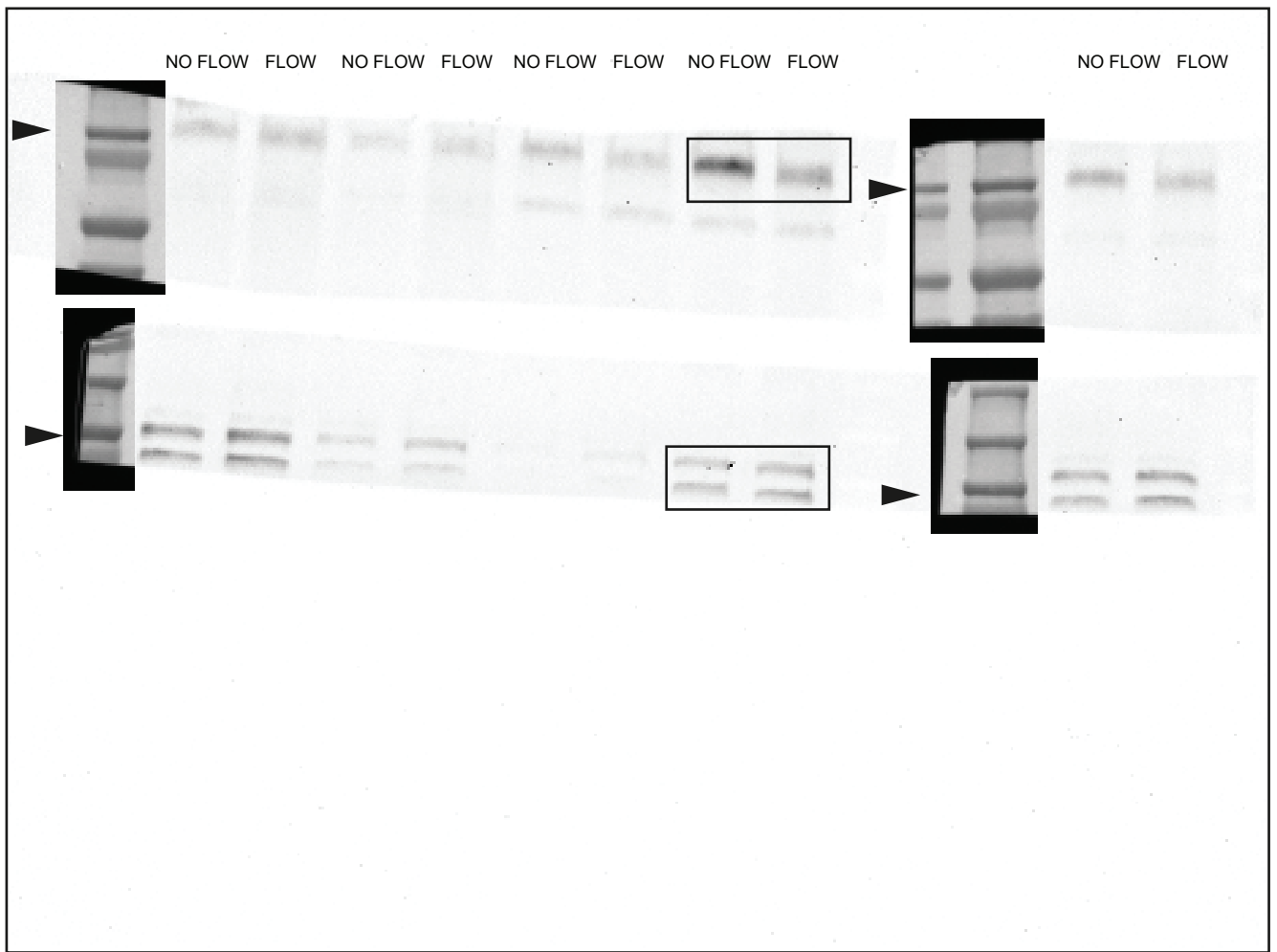
Supplementary Figure 1 - Follain\_Osmanni et al.



**A****B**



**Supplementary Figure 4 - Follain\_Osmani et al.**



**Supplementary Figure 5 - Follain\_Osmanni et al.**