1. How does NSD2-KO differ from NSD1-KO?

*This is relative NSD1.KO baseline*

* + **More upregulated genes in NSD2.KO than downregulated**
  + Pathways enriched in cellular structure development are found in both upregulated genes and downregulated genes
  + Overrepresentation of pathways in cancer also found in downregulated genes

1. Does NSD1/2-DKO have a greater effect than KO of NSD1 or NSD2 alone? What about NSD1/2/3-TKO?
   * **NSD.DKO has few DEGs when compared to NSD1.KO**
     + NSD.DKO is very similar to NSD1.KO, suggesting redundancy in NSD2KO
   * **Largest number of DEGs also found between TKO and NSD2.KO**
     + NSD2KO seems to have the smallest effect
   * There appears to have some differential expressed pathways in the TKO and in NSD2.KO compared to others, but not in NSD1.KO or NSD.DKO
     + NSD.DKO and NSD1.KO similar to the other NSD knockouts but NSD2.KO and NSD.TKO is different
2. Can NSD2-OE return NSD1-KO or NSD1-MT cells to a NSD1-WT-like state? K36M-OE is baseline
   * NSD2-OE in NSD1-KO seems to “rescue” NSD1
     + Very few DEGs found
3. Are genes affected by K36M-OE the same ones that change when we perturb NSD1 and/or NSD2?
   * Many more downregulated genes in NSD1KO compared to K36M-OE whereas NSD2.KO vs K36M-OE results in roughly equal DEGs in either direction
     + More downregulated genes again in NSD.DKO vs K36M-OE
   * 86 genes differentially expressed when we perturb NSD1 compared to K36M-OE
   * 94 genes in common when we perturb NSD2 compared to K36M-OE