## **Description of Additional Supplementary Files**

File name: Supplementary Data 1 **Description:** The source data for figure 1c File name: Supplementary Data 2 Description: The source data for figure 2b File name: Supplementary Data 3 Description: The source data for figure 2f and supplementary figure 4a File name: Supplementary Data 4 Description: The source data for figure 3a File name: Supplementary Data 5 Description: The source data for figure 3d-3f File name: Supplementary Data 6 Description: The source data for Supplementary figure 4b File name: Supplementary Data 7 Description: DEGs of 4FnoO iMSCs vs. 5F iMSCs. File name: Supplementary Data 8 Description: The source data for figure 5e, 6f, and 7d File name: Supplementary Data 9 Description: The source data for figure 6a and 6b File name: Supplementary Data 10 Description: DMCs of 4FnoO iMSCs vs. 5F iMSCs