

Table 1:**KEY RESOURCES TABLE**

REAGENT or RESOURCE	SOURCE	IDENTIFIER
Primary antibodies		
Mouse monoclonal anti-dextran antibody, clone DX1	STEMCELL technologies	Cat# 60026
Rabbit anti-GFP	Abcam	Cat# ab6556
Goat anti-TUBB3	Everest biotech	Cat# EB11685
Rabbit anti-Tbr2	Abcam	Cat# ab183991
Mouse anti-g-tubulin	Sigma-Aldrich	Cat# T6557
Mouse anti-TuJ1	Covance Research Products	Cat# MMS-435P
Rabbit anti-Arl13b	Proteintech Group	Cat# 17711-1-AP
Rabbit anti-H3K27me3	Active Motif	Cat# 39155
Rabbit anti-EZH2	Active Motif	Cat# 39901
Secondary antibodies		
Donkey anti-Rabbit IgG (H+L) Highly Cross-Adsorbed Secondary Antibody, Alexa Fluor 488	Thermo Fisher Scientific	Cat# A-21206
Donkey anti-Rabbit IgG (H+L) Highly Cross-Adsorbed Secondary Antibody, Alexa Fluor 555	Thermo Fisher Scientific	Cat# A-31572
Alexa		
Donkey anti-Mouse IgG (H+L) Highly Cross-Adsorbed Secondary Antibody, Alexa Fluor 488	Thermo Fisher Scientific	Cat# A-21202
Donkey anti-Mouse IgG (H+L) Highly Cross-Adsorbed Secondary Antibody, Alexa Fluor 647	Thermo Fisher Scientific Thermo	Cat# A-31571
Donkey anti-Goat IgG (H+L) Cross-Adsorbed Secondary Antibody, Alexa Fluor 647	Thermo Fisher Scientific	Cat# A-21447
Tissue culture supplies		
Rat serum	Charles River Lab., Japan	Cat# S-919-S

DMEM-F12, modified low glucose	Sigma	Cat# D2902
Dextran-Alexafluor 488 (10,000 MW anionic, fixable)	Invitrogen	Cat# D22913
Agarose, low melting point	Roth	Cat# 6351.2
B-27 supplement	Invitrogen	Cat# 17504-044
Cellmatrix type 1 -A	Kyowa chemical products	Cat# 631-00651
L-Glutamine (200 mM)	Thermo fisher scientific	Cat# 25030024
HEPES-NaOH (pH 7.2 1M)	Sigma-Aldrich	Cat# H3537
Slice/hemisphere culture incubation box	MPI-CBG workshop	N/A
Chemicals, peptides		
EPZ5676	Selleckchem	Cat# S7062
DMSO	Thermo Fisher Scientific	Cat# TS-20688
L-Albizziine	Gold Biotechnology	Cat# A-230-250
Commercial assays		
Neural Tissue Dissociation Kit (P)	Miltenyi Biotec	Cat# 130-092-628
Deposited data		
Single cell RNA sequencing (scRNA-seq) data	This paper	GEO: GSE176323
Experimental models: Organisms/strains		
Wild type mouse: C57BL/6JRj	Janvier Labs	N/A
Transgenic mouse: Tis21+/tm2(Gfp)Wbh	(Haubensak et al., 2004)	N/A
Plasmids and Oligonucleotides		

pCAGGS-mCherry	Genscript	N/A
pCMV-ASNS-GFP	Origene	MG208883
pCMV-GFP	Origene	PS100010
192 polyT primers with unique molecular index and cell barcode	Integrated DNA technologies	Sagar et al., 2018
CEBPG_BS1_ASNS_fw: CAGCATGGATTTGCAGTCAT	Sigma	N/A
CEBPG_BS1_ASNS_rv: TTTCAGGTGGGAGAGAGGATT	Sigma	N/A
CEBPG_BS2_ASNS_fw: AAGCCAGGGTCATCTAGGAAG	Sigma	N/A
CEBPG_BS2_ASNS_rv: GCAGAGACATCCCACATCAAT	Sigma	N/A
ASNS_TSS_fw: TCCCGCTTACCTGAGCACTA	Sigma	N/A
ASNS_TSS_rv: CAGCCACATGATGAAACTTCC	Sigma	N/A
randomhexRT primer, GCCTTGGCACCCGAGAATTCCANNNNNN	Integrated DNA technologies	Sagar et al., 2018
RNA PCR Primers, sequences available from Illumina (RP1, RPI1-RPI12, TruSeq)	Integrated DNA technologies	Sagar et al., 2018
Tissue and hemisphere culture supplies		
40% O ₂ , 55% N ₂ , 5% CO ₂	Airliquide	N/A
Sodium hydroxide pellets	Merck	Cat# 106482
Tyrode's salt	Sigma-Aldrich	Cat# T2145-10x1L
Sodium bicarbonate	Merck	Cat# 106323
Penicillin-Streptomycin	Gentaur	Cat# PAA P11-010
Software and algorithms		
RaceID3	v0.1.6	https://github.com/dg run/RaceID3_Steml D2_package

RStudio	v.3.6.1	https://www.rstudio.com/
R	v1.2.5042	https://www.r-project.org/
Seurat	v.3.1.2	https://satijalab.org/seurat/
Scran	v3.12	https://bioconductor.org/packages/release/bioc/html/scran.html
SingleCellExperiment	v1.8.0	https://www.bioconductor.org/packages/release/bioc/html/SingleCellExperiment.html
SCENIC	v1.1.2	https://github.com/aertslab/SCENIC
GENIE3	v1.12.0	https://github.com/aertslab/GENIE3
RcisTarget	v1.10.0	https://www.bioconductor.org/packages/release/bioc/html/RcisTarget.html
AUCell	v1.12.0	https://bioconductor.org/packages/release/bioc/html/AUCell.html
Bioconductor	v3.12	https://www.bioconductor.org/
clusterProfiler	v3.14.0	https://bioconductor.org/packages/release/bioc/html/clusterProfiler.html
Prism	v.8.0.	https://www.graphpad.com/scientific-software/prism/
Single cell RNA sequencing reagents and supplies		

RNaseOUT	Invitrogen	Cat# 10777-019
Superscript II	Invitrogen	Cat# 18064-014
Second Strand Buffer	Invitrogen	Cat# 10812-014
E. coli DNA ligase	Invitrogen	Cat# 18052-019
E. coli RNaseH	Invitrogen	Cat# 18021-071
E. coli DNA polymerase	Invitrogen	Cat# 18010-025
AMPure XP beads	Beckman Coulter	Cat# A63880
RNAClean XP beads	Beckman Coulter	Cat# A63987
MEGAscript T7 Transcription Kit	Invitrogen	Cat# AM1334
Phusion High-Fidelity PCR Master Mix with HF Buffer	NEB	Cat# M0531
ExoSAP-IT For PCR Product Clean-Up	Affymetrix	Cat# 78200
NEBNext Magnesium RNA Fragmentation Module	NEB	Cat# E6150S
randomhexRT primer, GCCTTGGCACCCGAGAATTCCANNNNNN	Integrated DNA technologies	Sagar et al., 2018
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192 polyT primers with unique molecular index and cell barcode	Integrated DNA technologies	Sagar et al., 2018
Other		
scRNA-seq data analyses workflows	This paper	https://github.com/Vogel-lab/DOT1L_activity_neocortex-paper