

Table S2 Antibodies information

Primary Antibodies	Application	Source
Nanog	ICC	EMD Millipore (MABD24)
Oct4	ICC	EMD Millipore (MAB4401)
Nestin	ICC	EMD Millipore (MAB5326)
Mushashi1	ICC	EMD Millipore (MABE268)
Class III β Tubulin (Mouse)	ICC	EMD Millipore (MMS-435P)
Class III β Tubulin (Rabbit)	ICC	Sigma (T2200)
MAP2	ICC	EMD Millipore (AB5622)
RIMS1	WB	Synaptic systems (140003)
Anti-DDDK tag antibody [F-tag-01] – (Equivalent to FLAG antibody from Sigma)	WB for co-IP (PNKD (L) self- oligomerization)	Abcam (ab18230)
Anti-FLAG M2 antibody	WB for co-IP (RIMS1 α and PNKD (L) Interaction)	Sigma (F3165)
Myc-Tag (9B11) Mouse mAb	WB ICC	Cell Signaling Technology
Synapsin I	WB	Sigma (S193)
VGLUT1	ICC	Synaptic systems (135511)
VGAT	ICC	Synaptic systems (131011)
GFAP	ICC	Synaptic systems (173011)
GAPDH	WB	Abcam (ab9482)
OCT4	Flow Cytometry	EMD Millipore (MAB4401)
TRA-1-60	Flow Cytometry	EMD Millipore (MAB4360)
NESTIN Alexa Fluor 488	Flow Cytometry	eBioscience (53-9843-82)
SOX2 eFluor 660	Flow Cytometry	eBioscience (50-9811-82)
MAP2 & Class III β Tubulin	ICC in electrophysiology	Abcam(ab32454) (MAP2) & BioLegend (801201) (Class III β Tubulin)
Pan-synapsin (E028) & MAP2	ICC in electrophysiology	http://www.informatics.jax.org/antibody/key/8034 & Sigma (M1406) (MAP2)
Secondary Antibodies	Application	Source
Cy3-conjugated AffiniPure F(ab') ₂ Fragment Goat Anti- Mouse IgG (H+L)	ICC	Jackson ImmunoResearch (115-166-003)
Goat anti-Rabbit IgG (H+L) Superclonal Secondary Antibody, Alexa Fluor 488 conjugate	ICC	Thermo Fisher Scientific (A27034)
Goat anti-Mouse IgG1 Secondary Antibody, PE	Flow Cytometry	ThermoFisher Scientific (P21129)
Goat anti-Mouse IgM Heavy Chain Cross- Adsorbed Secondary Antibody, Alexa Fluor 488	Flow Cytometry	ThermoFisher Scientific (A21042)