

Supplementary Information on Antibodies

The primary antibodies

1. chicken anti-GFP (1:500, Invitrogen, Carlsbad, CA, #A10262), mouse, IHC, validation on manufacturer's website: <https://www.thermofisher.com/antibody/product/GFP-Tag-Antibody-Polyclonal/A10262#/IHC-content>.
2. rat anti-Ki67 (SolA15) (1:500, eBioscience, 14-5698, San Diego, CA, USA), mouse, IHC, validation on manufacturer's website: <https://www.thermofisher.com/antibody/product/Ki-67-Antibody-clone-SolA15-Monoclonal/14-5698-82>
3. rabbit anti-GFAP (1:2000, DAKO, #Z0334, Carpinteria, CA, USA), mouse, IHC, validation on publication: PMID: 21516088
4. chicken anti-Nestin (1:500, Aves Labs, #NES0407, Tigard, OR, USA), mouse, IHC, validation on publication: PMID: 28100736
5. rabbit anti-Doublecortin (1:500, Cell Signaling Technology, #4604S, Beverly, MA, USA), mouse, IHC, validation on manufacturer's website: <https://www.cellsignal.com/products/primary-antibodies/doublecortin-antibody/4604>
6. rabbit anti-cleaved caspase-3 (Asp175) (1:500, Cell Signaling, #9661, Danvers, MA, USA), mouse, IHC, validation on manufacturer's website: <https://www.cellsignal.com/products/primary-antibodies/cleaved-caspase-3-asp175-antibody/9661>
7. mouse anti-NeuN (clone A60) (1:500, Millipore, MAB377, Billerica, MA, USA), mouse, IHC, validation on manufacturer's website: http://www.emdmillipore.com/US/en/product/Anti-NeuN-Antibody-clone-A60,MM_NF-MAB377?ReferrerURL=https%3A%2F%2Fwww.google.com%2F&bd=1
8. rabbit anti-S100 β (1:1000, Dako, Z0334, Carpinteria, CA, USA), validation on publication: PMID: 28100736
9. mouse anti-FMRP (clone 1C3) (1:500, Millipore, MAB2160), mouse, IHC, validation on manufacturer's website: http://www.emdmillipore.com/US/en/product/Anti-Fragile-X-Mental-Retardation-Protein-Antibody-clone-1C3,MM_NF-MAB2160
10. mouse anti-Nitrotyrosine (39B6) (1:500, Santa Cruz Biotechnology, sc-32757, Texas, DA, USA), mouse, IHC, validation on manufacturer's website: <https://www.scbt.com/scbt/product/nitrotyrosine-antibody-39b6>
11. mouse anti-Huntingtin (3E10) (1:500, Santa Cruz Biotechnology, sc-47757, Texas, DA, USA), mouse, IHC, validation on manufacturer's website: <https://www.scbt.com/scbt/product/huntingtin-antibody-3e10>
12. mouse anti-Opal ([EPR11057(B)]) (1:1000, Abcam, ab157457, Cambridge, MA), mouse, WB, validation on manufacturer's website: <https://www.abcam.com/opal-antibody-epr11057b-ab157457.html>
13. mouse anti-Mfn1 (3C9) (1:1000, Abcam, ab57602, Cambridge, MA), mouse, WB, validation on manufacturer's website: <https://www.abcam.com/mitofusin-1-antibody-3c9-ab57602.html>

14. rabbit anti-Mfn2 (1:500, Proteintech, 12186-1-AP, Rosemont, IL), mouse, WB, validation on manufacturer's website: <https://www.ptglab.com/products/MFN2-Antibody-12186-1-AP.htm>
15. rabbit anti-Drp1 (EPR19274) (1:1000, Abcam, ab184247, Cambridge, MA), mouse, WB, validation on manufacturer's website: <https://www.abcam.com/drp1-antibody-epr19274-ab184247.html>
16. mouse anti-FMRP (7G1-1) (1:500, DSHB, 7F1-1-C, University of Iowa, Department of Biology, IA), mouse, IP, validation on manufacturer's website: <http://dshb.biology.uiowa.edu/7G1-1>

Fluorescent secondary antibodies used for IHC by 1:500 dilution:

1. goat anti-chicken-488 (A11039, Invitrogen), mouse, IHC, validation on manufacturer's website: <https://www.thermofisher.com/antibody/product/Goat-anti-Chicken-IgY-H-L-Secondary-Antibody-Polyclonal/A-11039>
2. goat anti-mouse 568 (A11004, Invitrogen), mouse, IHC, validation on manufacturer's website: <https://www.thermofisher.com/antibody/product/Goat-anti-Mouse-IgG-H-L-Cross-Adsorbed-Secondary-Antibody-Polyclonal/A-11004>
3. goat anti-rabbit 647 (A21245, Invitrogen), mouse, IHC, validation on manufacturer's website: <https://www.thermofisher.com/antibody/product/Goat-anti-Rabbit-IgG-H-L-Highly-Cross-Adsorbed-Secondary-Antibody-Polyclonal/A-21245>
4. donkey anti-goat 568 (A11057, Invitrogen), mouse, IHC, validation on manufacturer's website: <https://www.thermofisher.com/antibody/product/Donkey-anti-Goat-IgG-H-L-Cross-Adsorbed-Secondary-Antibody-Polyclonal/A-11057>
5. donkey anti-rabbit 647 (A31573, Invitrogen), mouse, IHC, validation on manufacturer's website: <https://www.thermofisher.com/antibody/product/Donkey-anti-Rabbit-IgG-H-L-Highly-Cross-Adsorbed-Secondary-Antibody-Polyclonal/A-31573>
6. goat anti-mouse 647 (A21235, Invitrogen), mouse, IHC, validation on manufacturer's website: <https://www.thermofisher.com/antibody/product/Goat-anti-Mouse-IgG-H-L-Cross-Adsorbed-Secondary-Antibody-Polyclonal/A-21235>
7. goat anti-rabbit 568 (A11011, Invitrogen), mouse, IHC, validation on manufacturer's website: <https://www.thermofisher.com/antibody/product/Goat-anti-Rabbit-IgG-H-L-Cross-Adsorbed-Secondary-Antibody-Polyclonal/A-11011>
8. donkey anti-mouse 647 (A31571, Invitrogen), mouse, IHC, validation on manufacturer's website: <https://www.thermofisher.com/antibody/product/Donkey-anti-Mouse-IgG-H-L-Highly-Cross-Adsorbed-Secondary-Antibody-Polyclonal/A-31571>

Fluorescent secondary antibodies used for WB by 1:5000 dilution:

1. IRDye 800CW Goat anti-Mouse IgG (H+L) (925-32210, LiCore), mouse, WB, validation on manufacturer's website: https://www.licor.com/bio/products/reagents/secondary_antibodies/irdye_800cw.html

2. IRDye 800CW Goat anti-rabbit IgG (H+L) (925-32211, LiCore), mouse, WB, validation on manufacturer's website:
https://www.licor.com/bio/products/reagents/secondary_antibodies/irdye_800cw.html
3. IRDye 680LT Goat anti-Mouse IgG (H+L) (925-68020), LiCore), mouse, WB, validation on manufacturer's website:
https://www.licor.com/bio/products/reagents/secondary_antibodies/irdye_680lt.html
4. IRDye 680LT Goat anti-Rabbit IgG (H+L) (925-68021), LiCore), mouse, WB, validation on manufacturer's website:
https://www.licor.com/bio/products/reagents/secondary_antibodies/irdye_680lt.html