Protocol for Gephyrin Antibody (Cat. No. 147 021) Immunohistochemistry Glyoxal (IHC-G) Fluorescence Staining - Slide Mounted

This protocol is suitable for the immunohistochemical analysis of glyoxal fixed tissue-sections. The tissue-sections are stained on slides. For tissue preparation, please refer to our Protocol for Immunohistochemistry Glyoxal (IHC-G) Tissue Preparation.

Materials and reagents

- **TBS:** Tris buffered saline (50 mM Tris, 150 mM NaCl), pH 7.2
- **Blocking buffer:** 10% normal serum, 0.3% Triton X-100 in TBS (if secondary antibodies are used, normal serum from the host-species of the secondary antibodies is recommended for blocking)
- **Incubation buffer:** 5% normal serum, 0.3% Triton X-100 in TBS (if secondary antibodies are used, normal serum from the host-species of the secondary antibodies is recommended for blocking)
- **Primary antibody:** Gephyrin antibody (cat. no. 147 021)
- **Secondary antibody:** Fluorophore conjugated mouse specific secondary antibody
- *Optional: DAPI nuclear stain*
- **Hydrophobic barrier pen**
- **Mounting medium**

Procedure

1. Take cryo-tissue sections from -20°C freezer.
2. Air-dry sections at room temperature (RT).
3. Surround tissue with hydrophobic pen.
4. Rehydrate sections for 10 min in **TBS** at RT in staining dishes.
5. Add **blocking buffer** and block for 1 h at RT in a wet chamber.
6. Remove the **blocking buffer** and add the **incubation buffer** with the **primary antibody** at a dilution of **1:**.
7. Incubate with the **primary antibody** overnight at 4°C in a wet chamber.
8. Wash three times for 10 min in **TBS** (RT; orbital shaker: 70 - 80 rpm).
9. Transfer the slides back to the wet chamber and apply the **incubation buffer** with the **secondary antibody** diluted to the manufacturer's recommended concentration.
10. Incubate for 1 h at RT.
    Notes:
    - *In multiplex staining, make sure to use secondary antibodies cross-adsorbed against the host species of the other primary antibody used in your experiment. Ideally, all secondary antibodies should come from the same host species. If not, make sure that they have been cross-adsorbed against IgGs of the host-species of the other secondary antibody as*

well. This avoids cross-reaction between the secondary antibodies.

- *Avoid bright light when working with the secondary antibody to minimize photo bleaching of the fluorescent dye.*

11. Wash slides once for 10 min in **TBS** in staining dishes (RT; orbital shaker: 70 - 80 rpm).
12. *Optional: Add DAPI solution for 10 min in TBS at RT.*
13. Wash slides twice for 10 min in **TBS** in staining dishes (RT; orbital shaker: 70 - 80 rpm).
14. Wash slides with tap water.
15. Remove the hydrophobic circle around the tissue section.
16. Mount slides.

Note: This protocol has been validated in the SYSY Antibodies laboratories to ensure consistent and reliable staining results. However, for achieving the best specific signal with minimal background, the optimal antibody concentration, incubation temperature, and incubation duration should be optimized for each experiment.