MASSIVE PHOTONICS

DNA-PAINT KIT

MASSIVE-sdAB 1-PLEX

Expiration after 6 months *(For research use only)*

CONTENT

SECONDARY SINGLE DOMAIN ANTIBODIES

- **FluoTag®-XM-QC Anti-Mouse IgG kappa light chain** (Clone: 1A23) + **Docking site 1** (To be meas ured with Imager 1) or **FluoTag®-XM-QC Anti-Rabbit IgG** (Clone: 10E10) + **Docking site 2** (To be measured with Imager 2)
- Concentration: 5 µM Protein, 5 µM DNA (1 DNA strand per protein)
- Volume: 100 µL
- Storage: -20 °C
- Storage buffer: PBS, 50 % glycerol + 0.05 % NaN_3
- Recommened dilution: 1:200 - 1:500 (for optimal results the dilution needs to be optimized depending on the target accessiblity and expression level)

IMAGERS

- **Imager 1** or **2** Cy3B or ATTO 655
- Concentration: 1 µM in TE buffer (10 mM Tris, 1 mM EDTA, pH 8)
- Volume: 300 µL
- Storage: 20 °C (1 µM imager solutions are stable for multiple freeze-and-thaw cycles)

  Optional: Prepare 50 µL aliquots and store at -20 °C. Working aliquots can be stored at 4 °C for short-term or -20 °C for long term

  Note: Further dilutions should be prepared fresh before use. Low imager concentrations are not stable in plastic tubes.

BUFFERS

- **Antibody incubation buffer**, 30 mL, store at 2 - 8 °C

  Note: For longer-term storage we recommend to store aliquots at -20 °C.
- **Washing buffer (10×)**, 20 mL, store at room temperature (to be diluted 1:10 in water before use)
- **Imaging buffer**, 50 mL, store at room temperature

SAMPLE PREP. PROTOCOL

1. Prepare sample using a protocol optimized for your target and primary antibody staining.
2. Wash with washing buffer (1×).
3. Dilute secondary DNA-PAINT single domain antibodies in Antibody incubation buffer.
4. Incubate for 30 - 60 min at room temperature.
5. Wash three times with washing buffer (1×).
6. Optional: Incubate fiducial markers.
7. Wash with imaging buffer before adding the final imaging solution with imager strands.
8. Before imaging: Add imager strands diluted in imaging buffer. We recommend a starting concentration of 1 nM. However, the optimum imager concentration strongly depends on the target and labeling density. Thus, the imager concentration should be adjusted such that distinct single molecule blinking events can be observed.
9. After imaging, exchange buffer to washing buffer (1×) for storage at 4 °C.

IMAGING PARAMETERS

- Exposure time: 100 - 150 ms
- Laser-Intensity: ~200 W/cm² (561 nm) and ~300 W/cm² (640 nm). This intensity might vary due to different illumination depths/modes (TIRF/HILO). For dense targets we recommend increasing the laser power to enhance blinking.
- Total imaging time/target: 30 min (Depends on target density and applied imager concentration)
- Temperature: The kit is optimized for image acquisition at 21 - 25 °C. At higher temperatures shorter exposure times and higher laser powers are required.

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