UConn STED: Fixed Sample Prep. Guide

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1. Prepare samples on #1.5 glass coverslips (0.17 mm thickness)
   - Coverslips come in various thicknesses. For STED, it must be #1.5.
   - The specimen holder fits standard glass slides, 35 mm glass bottom dishes, or chambered coverglass like LabTek II.

2. Label with recommended dyes
   - STED requires bright, stable dyes with optimized photophysical properties.
   - STAR RED is a far red probe and is the best performing dye.
   - Preferred dye combinations for multi‐channel imaging are in the table below.
   - Do not label with DAPI or Hoechst. If you need DNA labeling talk to Chris.
   - Confirm your labeling looks good with conventional confocal.

   **Preferred dye combinations for Abberior STED (see notes at the bottom)**

<table>
<thead>
<tr>
<th>Excitation/STED Depletion Lasers</th>
<th>Single Color</th>
<th>Dual Color</th>
<th>Triple Color</th>
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</thead>
<tbody>
<tr>
<td>640 / 775 nm</td>
<td>STAR RED</td>
<td>STAR RED</td>
<td>STAR RED</td>
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<tr>
<td>561 / 775 nm</td>
<td>STAR ORANGE OR STAR 580 OR Alexa594</td>
<td>STAR ORANGE OR STAR 580 OR Alexa594</td>
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<tr>
<td>488 / 775 nm</td>
<td>Atto490LS OR</td>
<td>STAR GREEN OR STAR 488 OR Alexa 488 OR Oregon Green</td>
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<tr>
<td>488 / 595 nm</td>
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<tr>
<td>440 / 775 nm</td>
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<td>STAR 460L</td>
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</tbody>
</table>

3. Mount sample in appropriate mounting medium
   - Mount fixed samples using a high refractive index mounting medium with antifade.
   - Position coverslip only near the center of the slide.
   - Prolong Gold or Diamond are recommended.
   - Do not use Vectashield or Prolong Glass.

   - We have aliquots of commonly used Abberior STAR secondary antibodies available with a KFS #.
   - Abberior recommends 1:100-1:200 dilutions of their antibodies
   - A variety of Abberior STAR antibodies and reagents for STED can be purchased at Aberrior.com.
   - The facility also has coverslips, slides, and Prolong mounting medium available.