# Materials List for:

**Studying DNA Looping by Single-Molecule FRET**

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## Materials

<table>
<thead>
<tr>
<th>Name</th>
<th>Company</th>
<th>Catalog Number</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small DNA FRAG Extract Kit-100PR</td>
<td>VWR</td>
<td>97060-558</td>
<td></td>
</tr>
<tr>
<td>Acrylamide 40% solution 500 ml</td>
<td>VWR</td>
<td>97064-522</td>
<td></td>
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<tr>
<td>Bis-acrylamide 2% (w/v) solution 500 ml</td>
<td>VWR</td>
<td>97063-948</td>
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<tr>
<td>GeneRuler 100 bp DNA Ladder, 100-1,000 bp</td>
<td>Fermentas</td>
<td>SM0241</td>
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</tr>
<tr>
<td>Mini Vertical PAGE System</td>
<td>VWR</td>
<td>89032-300</td>
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</tr>
<tr>
<td>Syringe filter 0.2 μm CS50</td>
<td>VWR</td>
<td>A2666</td>
<td></td>
</tr>
<tr>
<td>Trolox</td>
<td>Sigma-Aldrich</td>
<td>238813-1G</td>
<td>triplet state quencher</td>
</tr>
<tr>
<td>Protocatechuic acid (PCA)</td>
<td>Sigma-Aldrich</td>
<td>08992-50MG</td>
<td>oxygen scavenging system</td>
</tr>
<tr>
<td>Protocatechuate 3,4-Dioxygenase (PCD)</td>
<td>Sigma-Aldrich</td>
<td>P8279-25UN</td>
<td>oxygen scavenging system</td>
</tr>
<tr>
<td>mPEG-silane, MW 2,000 1 g</td>
<td>Laysan Bio</td>
<td>MPEG-SIL-2000-1g</td>
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</tr>
<tr>
<td>Biotin-PEG-Silane, MW 3,400</td>
<td>Laysan Bio</td>
<td>Biotin-PEG-SIL-3400-1g</td>
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<tr>
<td>Avidin, NeutrAvidin Biotin-binding Protein</td>
<td>Invitrogen</td>
<td>A2666</td>
<td></td>
</tr>
<tr>
<td>Phusion Hot Start High-Fidelity DNA Polymerase</td>
<td>New England Biolabs</td>
<td>F-540L</td>
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<tr>
<td>Gel/PCR DNA Fragments Extraction Kit</td>
<td>IBI Scientific</td>
<td>IB47020</td>
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<tr>
<td>Premium plain glass microscope slides</td>
<td>Fisher Scientific</td>
<td>12-544-1</td>
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<tr>
<td>VWR micro cover glass, rectangular, no. 1</td>
<td>VWR</td>
<td>48404-456</td>
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<tr>
<td>Fisher Scientific Isotemp 1006S Recirculating Chiller/Heater</td>
<td>Fisher Scientific</td>
<td>150303</td>
<td>temperature control</td>
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<tr>
<td>Objective Cooling Collar</td>
<td>Bioptechs</td>
<td>150303</td>
<td>temperature control</td>
</tr>
<tr>
<td>KMI53 Biological Micrometer Measuring Stage</td>
<td>Semprex</td>
<td>KMI53</td>
<td></td>
</tr>
<tr>
<td>High Performance DPSS Laser 532 nm 50 mW</td>
<td>Edmund optics</td>
<td>NT66-968</td>
<td>Cy3 excitation</td>
</tr>
<tr>
<td>CUBE Fiber Pigtailed 640 nm, 30 mW, Fiber, FC/APC Connector</td>
<td>Coherent</td>
<td>1139604</td>
<td>Cy5 excitation</td>
</tr>
<tr>
<td>650 nm BrightLine Dichroic Beamsplitter</td>
<td>Semrock</td>
<td>FF650-DI01-25x36</td>
<td>splitting dichroic</td>
</tr>
<tr>
<td>LaserMUX Beam Combiner, reflects 514.5, 532, &amp; 543.5 nm lasers, 25 mm</td>
<td>Semrock</td>
<td>LM01-552-25</td>
<td>combining dichroic</td>
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<tr>
<td>Brightline Fluorescence Filter 593/40</td>
<td>Semrock</td>
<td>FF01-593/40-25</td>
<td>Cy3 emission filter</td>
</tr>
<tr>
<td>Component Description</td>
<td>Manufacturer</td>
<td>Model/Part Number</td>
<td>Notes</td>
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<tr>
<td>-----------------------------------------------------------------</td>
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<tr>
<td>635 nm EdgeBasic LWP longpass Filter, 25 mm</td>
<td>Semrock</td>
<td>BLP01-635R-25</td>
<td>Cy5 emission filter</td>
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<tr>
<td>EMCCD iXon+</td>
<td>Andor Technology</td>
<td>DU-897E-CS0-#BV</td>
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<tr>
<td>IX51 inverted microscope frame</td>
<td>Olympus</td>
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<tr>
<td>Objective UApo N 100X/1.49 Oil TIRF</td>
<td>Olympus</td>
<td></td>
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</tr>
<tr>
<td>Immersion oil type-F for fluorescence microscopy</td>
<td>Olympus</td>
<td>IMMOIL-F30CC</td>
<td></td>
</tr>
<tr>
<td>2 mm Diameter 45° Rod Lens Aluminum Coated</td>
<td>Edmund optics</td>
<td>54-092</td>
<td>miniature mirror</td>
</tr>
<tr>
<td>1/4&quot; Travel Single-Axis Translation Stage</td>
<td>Thorlabs</td>
<td>MS-1</td>
<td>translation of miniature mirror</td>
</tr>
<tr>
<td>Ø1&quot; Achromatic Doublet, ARC: 400-700 nm, f=200 mm</td>
<td>Thorlabs</td>
<td>AC254-200-A</td>
<td>focusing lens</td>
</tr>
<tr>
<td>Adjustable Mechanical Slit</td>
<td>Thorlabs</td>
<td>VA100</td>
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<tr>
<td>Dielectric Mirror</td>
<td>Thorlabs</td>
<td>BB1-E02</td>
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<tr>
<td>Ø1&quot; Achromatic Doublet, f = 100 mm</td>
<td>Thorlabs</td>
<td>AC254-100-A</td>
<td>relay lens</td>
</tr>
<tr>
<td>Lens Mount for Ø1&quot; Optics</td>
<td>Thorlabs</td>
<td>LMR1</td>
<td></td>
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<tr>
<td>Dichroic Filter Mount</td>
<td>Thorlabs</td>
<td>FFM1</td>
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<tr>
<td>Fixed Cage Cube Platform</td>
<td>Thorlabs</td>
<td>B3C</td>
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<tr>
<td>Kinematic Mount for Ø1&quot; Optics</td>
<td>Thorlabs</td>
<td>KM100</td>
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<tr>
<td>N-BK7 Plano-Convex Lens, Ø1&quot;, f = 40 mm</td>
<td>Thorlabs</td>
<td>LA1422-A</td>
<td>collimating lens</td>
</tr>
<tr>
<td>N-BK7 Plano-Convex Lense, Ø6.0 mm, f = 15 mm</td>
<td>Thorlabs</td>
<td>LA1222-A</td>
<td>telescope lens</td>
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<tr>
<td>N-BK7 Plano-Convex Lense, Ø6.0 mm, f = 150 mm</td>
<td>Thorlabs</td>
<td>LA1433-A</td>
<td>telescope lens</td>
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</tbody>
</table>