This Quick Guide provides DNA Shearing protocols for the Covaris 96 AFA-TUBE TPX Plate consumable using a Covaris R230 Focused-ultrasonicator instrument.

Values mentioned in this Quick Guide are nominal values. The tolerances are as follows:

- **Temperature**: +/- 3 °C
- **Sample Volume**:
  - 96 AFA-TUBE TPX Plate for ≥ 300 bp: 50 µL, ± 2.5 µL
  - 96 AFA-TUBE TPX Plate for ≤ 300 bp: 20 µL, ± 2.5 µL
- **Water Level**: +/- 0.5

Sample Guidelines

- **DNA Input**: 96 AFA-TUBE TPX Plate up to 5 µg purified DNA
- **Buffers**: TE - Tris-EDTA, pH 8.0
- **DNA Quality**: Genomic DNA (> 10 kb). For lower quality DNA, Covaris recommends setting up a time dose response experiment for determining appropriate treatment times.
- **WARNING**: DO NOT use the AFA-TUBE TPX Plates for long term sample storage. Samples should be transferred after processing.

Instrument Setup

- Refer to the instrument manual for complete setup.
- DNA Shearing vessels have specific tracks and waveguides associated with them.

Instrument Settings

- Recommended settings are subject to change without notice.

**NOTE**: DNA fragment representation will vary with analytical systems. Covaris recommends a time course experiment to reach the desired fragment size distribution. Please contact [ApplicationSupport@covaris.com](mailto:ApplicationSupport@covaris.com) regarding details on how to set up a method for time course experiment and for final optimized shearing.

Follow [this link](#) for updates to this document.
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AFA-TUBE TPX Plate with SonoLab 10.0.0 or Higher

<table>
<thead>
<tr>
<th>Vessel</th>
<th>96 AFA-TUBE TPX Plate (PN 520291)</th>
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<th>Suggested Sample Volume</th>
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<th>Plate Definition</th>
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<th>Base Pair Mode (bp)</th>
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<th>350</th>
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<th>Repeat/Iterations (#)</th>
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<th>Repeat Process Treatment Duration (sec)</th>
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<th>Duty Factor (%)</th>
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<th>Sample Volume (µL)</th>
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*The Delay step is required only for time course experiments and in run scenarios when only 1 column is being tested. For shearing in more than one column with optimized final setting, delay step is not required.

Please contact ApplicationSupport@covaris.com regarding details on how to set up a method for time course experiment and for final optimized shearing.

Additional Accessories

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<th>Product</th>
<th>Product Description</th>
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<tr>
<td>R230 Rack 96 AFA-TUBE TPX Plate</td>
<td>This rack is compatible for use with the 96 AFA-TUBE TPX Plate on R230 Focused-ultrasonicators.</td>
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Appendix A: 175 bp Protocol on SonoLab 10.0 for R230 – 1 column

Following are some example screenshots for processing of 175 bp protocol with 1 column of the AFA-TUBE TPX Plate in the Method Editor and Method Screen.

Shearing Protocol in Method Editor

Shearing Protocol in Method Screen
Appendix B: 350 bp Protocol on SonoLab 10.0 for R230 – 1 column

Following are some example screenshots for processing of 350 bp protocol with 1 column of the AFA-TUBE TPX Plate in the Method Editor and Method Screen.

Shearing Protocol in Method Editor

Shearing Protocol in Method Screen
Appendix C: 175 bp Protocol on SonoLab 10.0 for R230 – more than 1 column

Following are some example screenshots for processing of 175 bp protocol with more than 1 column of the AFA-TUBE TPX Plate in the Method Editor and Method Screen.

Shearing Protocol in Method Editor

Shearing Protocol in Method Screen
Appendix D: 350 bp Protocol on SonoLab 10.0 for R230 – more than 1 column

Following are some example screenshots for processing of 350 bp protocol with more than 1 column of the AFA-TUBE TPX Plate in the Method Editor and Method Screen.

Shearing Protocol in Method Editor

![Shearing Protocol in Method Editor](image1)

Shearing Protocol in Method Screen

![Shearing Protocol in Method Screen](image2)
Technical Assistance

- By telephone (+1 781.932.3959) during the hours of 9:00 a.m. to 5:00 p.m., Monday through Friday, United States Eastern Standard Time (EST) or Greenwich Mean Time (GMT) minus 05:00 hours
- By e-mail at ApplicationSupport@covaris.com

Revision History

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