

# TruSight Tumor 170 DNA Shearing Quick Guide

## DNA Shearing with M220/ME220/E220/LE220/LE220-plus/LE220R-plus/LE220Rsc

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The protocols presented in this DNA Shearing Quick Guide feature a pulsing mode, developed to deliver higher DNA recovery and enhanced QC metrics (variants and coverage) for library preparation and downstream sequencing applications.

### Values are nominal values. The tolerances are as follows:

- Temperature +/-2 °C
- Sample volume:
  - microTUBE-50: 55 µL, ± 2.5 µL

### Sample Guidelines

- DNA input: microTUBE-50 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 treatments.

### Instrument Setup

- Refer to the instrument manual for complete setup
- microTUBE-50 consumables require specific racks

### Instrument Settings

- Recommended settings are subject to change without notice
- Supported SonoLab Versions
  - LE220-plus: 8.4 or above
  - ME220: 8.0.1 or above
  - LE220: 7.3 or above
  - E220: 7.3 or above
  - M220: 7.2 or above
- ***For the current printable version of this protocol ([PN 010515](#))***

### Analysis

- Customers should perform their own QC as performances vary with analytical systems, library preparation, and sequencing methods. Typically, Covaris creates DNA shearing protocol guidelines to a target base pair of +/- 15% with a %CV < 10% as analyzed using the Agilent, Bioanalyzer High Sensitivity DNA Kit, cat# 5067-4626.
- DNA fragment distribution will vary with analytical systems. To reach desired fragment size distribution, carry out a time course experiment based on settings provided in this document. There is size bias with different analyzers, chips, kits, buffers, and origin of DNA. Please see [Variability in DNA Fragment Size and Distribution Analysis Across Various Fragment Analyzers](#) for additional details.

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M220

microTUBE-50 AFA Fiber Screw-Cap

Vessel



Part Number (PN)

520166

SonoLab Version

7.2 or above

Holder

M220 Holder XTU (PN 500414)

Insert

M220 Holder XTU Insert microTUBE-50 (PN 500488)

Delay Time (sec)

10

Repeat/Iterations

10

Bath Temperature (°C)

10

Peak Incident Power (W)

25

Duty Factor (%)

40

Cycles per Burst (cpb)

1000

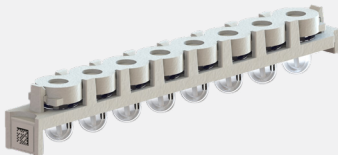
Treatment Time (sec)

10

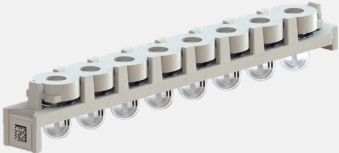
Total Treatment Time (sec)

100

ME220

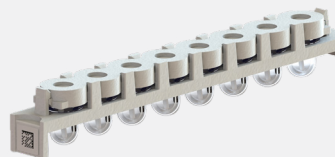
Vessel	8 microTUBE-50 AFA Fiber Strip V2 (PN 520174)	8 microTUBE-50 AFA Fiber H-Slit Strip V2 (PN 520240)
		
SonoLab Version	8.0.1 or above	
Sample Volume	55 µl	
Holder	ME220 Rack 8 microTUBE Strip V2 (PN 500518)	
Rack Definition	"8 microTUBE-50 Strip V2 PN 520174.2"	"8 microTUBE-50 H Slit Strip V2 PN 520240.2"
Waveguide	ME220 Waveguide 8 Place (PN 500526)	
Delay Time (sec)	N/A	
Repeat/Iterations	16	
Bath Temperature (°C)	10	
Peak Incident Power (W)	50	
Duty Factor (%)	30	
Cycles per Burst (cpb)	1000	
Treatment Time (sec)	10	
Total Treatment Time per Sample (sec)	160	

## E220

Vessel	8 microTUBE-50 AFA Fiber Strip V2 (PN 520174)	8 microTUBE-50 AFA Fiber H-Slit Strip V2 (PN 520240)
		
SonoLab Version	7.3 or above	
Sample Volume	55 $\mu$ l	
Holder	Rack 12 Place 8 microTUBE Strip V2 (PN 500444)	
Plate Definition	"E220_500444 Rack 12 Place 8 microTUBE-50 Strip V2 -10mm offset"	
Water Level	-2	
Intensifier	Yes (PN 500141)	
Dithering	N/A	
Delay Time (sec)	N/A	
Repeat/Iterations	18	
Bath Temperature ( $^{\circ}$ C)	7	
Peak Incident Power (W)	75	
Duty Factor (%)	15	
Cycles per Burst (cpb)	1000	
Treatment Time (sec)	10	
Total Treatment Time per Sample (sec)	180	

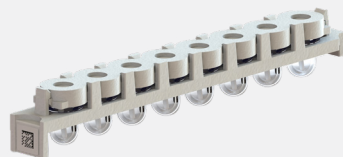
## LE220

Vessel	8 microTUBE-50 AFA Fiber Strip V2 (PN 520174)	8 microTUBE-50 AFA Fiber H-Slit Strip V2 (PN 520240)
SonoLab Version	7.3 or above	
Sample Volume	55 $\mu$ l	
Holder	Rack - XT 12 Place 8 microTUBE Strip V2 (PN 500485)	
Plate Definition	"LE220_500485 Rack-XT 12 Place 8 microTUBE-50 Strip V2 -12mm offset"	
Water Level	-2	
Dithering	0.5mm X-dither & 0.5mm Y-dither at 10mm/sec	
Delay Time (sec)	10	
Repeat/Iterations	20	
Bath Temperature ( $^{\circ}$ C)	7	
Peak Incident Power (W)	450	
Duty Factor (%)	20	
Cycles per Burst (cpb)	1000	
Treatment Time (sec)	10	
Total Treatment Time per Sample (sec)	200	



LE220-plus, LE220R-plus, and LE220Rsc

Vessel	8 microTUBE-50 AFA Fiber Strip V2 (PN 520174)	8 microTUBE-50 AFA Fiber H-Slit Strip V2 (PN 520240)
SonoLab Version	8.4 or above	
Sample Volume	55 µl	
Holder	Rack - XT 12 Place 8 microTUBE Strip V2 (PN 500485)	
Plate Definition	"LE220plus_500485 Rack-XT 12 Place 8 microTUBE-50 Strip V2 -12mm offset"	
Dithering	0.5mm X-dither & 0.5mm Y-dither at 10mm/sec	
Delay Time (sec)	10	
Repeat/Iterations	20	
Bath Temperature (°C)	7	
Peak Incident Power (W)	450	
Duty Factor (%)	20	
Cycles per Burst (cpb)	1000	
Treatment Time (sec)	10	
Total Treatment Time per Sample (sec)	200	



Please refer to the respective instrument User Manuals for SonoLab uninstallation/reinstallation instructions. Please refer to the respective instrument DNA Shearing Quick Guides for detailed instructions on how to program these methods.

For LE220-plus instruments with SonoLab 8.3 or below,  
please contact Covaris at [TechSupport@covaris.com](mailto:TechSupport@covaris.com) to upgrade instrument to SonoLab 8.4 or above.

For ME220 instruments with SonoLab 8.0.0 or below,  
please contact Covaris at [TechSupport@covaris.com](mailto:TechSupport@covaris.com) to upgrade instrument to SonoLab 8.0.1 or above.