

Covaris®

a PerkinElmer Company

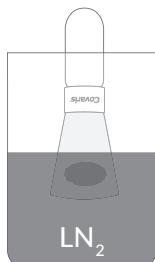
cryoPREP® Product Line

The non-contact, rapid, dry cryo-pulverization
system for biological tissue

Biomolecule Extraction using Covaris Products

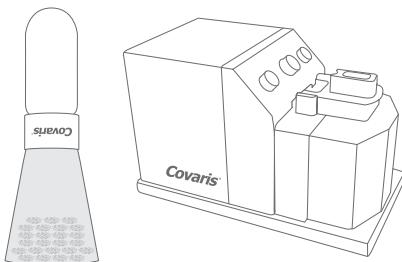
Tissue Disruption for Downstream Analytical Applications

Covaris dry cryo-pulverization systems have been designed to simplify tissue processing workflows. Tissues are collected in Covaris [tissueTUBEs](#), flash-frozen in liquid nitrogen, pulverized, and then transferred to a Covaris tube for extraction powered by Adaptive Focused Acoustics® (AFA®). The Covaris cryoPREP system is used to process tissues and extract biomolecules from a wide range of masses for downstream analyses including next-generation sequencing (NGS), qPCR, Microarrays, Mass Spectrometry (MS), GC-MS, NMR, and other detection methods.



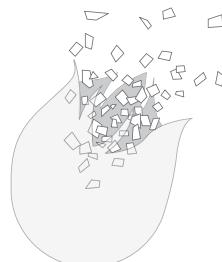
Flash-freeze in liquid nitrogen

Flash-freeze the sample in liquid nitrogen to thermally stabilize biomolecules. Samples may be stored at -80 °C.



Dry pulverize with cryoPREP

Dry pulverize the sample to increase surface area and disrupt extracellular matrix without the need for use of organic solvents. Samples may be stored at -80 °C.



Lyse with AFA-energetics®

Acoustically extract biomolecule in an appropriate stabilizing buffer prior to purification or analysis.

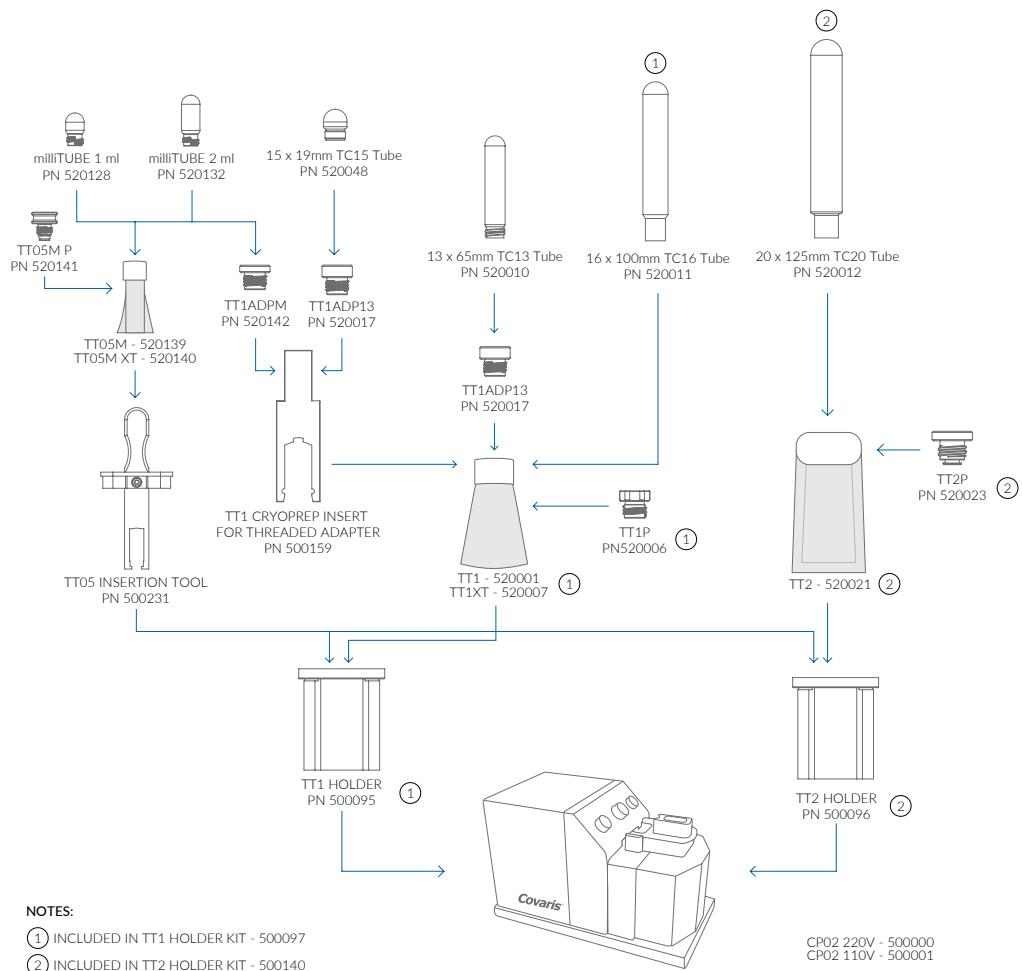
cryoPREP Dry Pulverizers

CP01 cryoPREP Manual Dry Pulverizer	CP02 cryoPREP Automated Dry Pulverizer	CP03 cryoPREP Manual Dry Pulverizer
		

cryoPREP Dry Pulverizers Compatibility Table

tissueTUBE	Sample Type	Mass Range	cryoPREP Compatibility		
TT05M	Soft Tissues	10–50 mg	CP01	CP02	N/A
TT05M-XT	All Tissues				N/A
TT1	Soft Tissues	30–300 mg	CP01	CP02	N/A
TT1-XT	All Tissues				N/A
TT2	All Tissues	300–2000 mg	N/A	CP02	N/A
TT3	All Tissues	2–10 g	N/A	N/A	CP03

cryoPREP CP02 Compatibility Chart

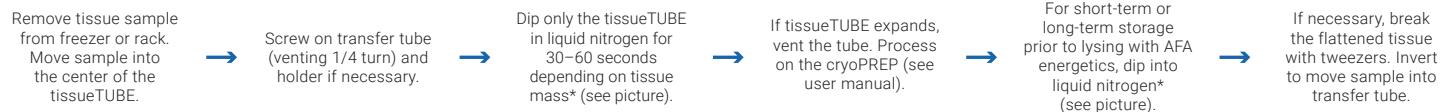


tissueTUBEs

- tissueTUBEs have an expiration date due to the manufacturing process of heat shrinking the material
- Must be vented during processing in the cryoPREP

tissueTUBE Workflows

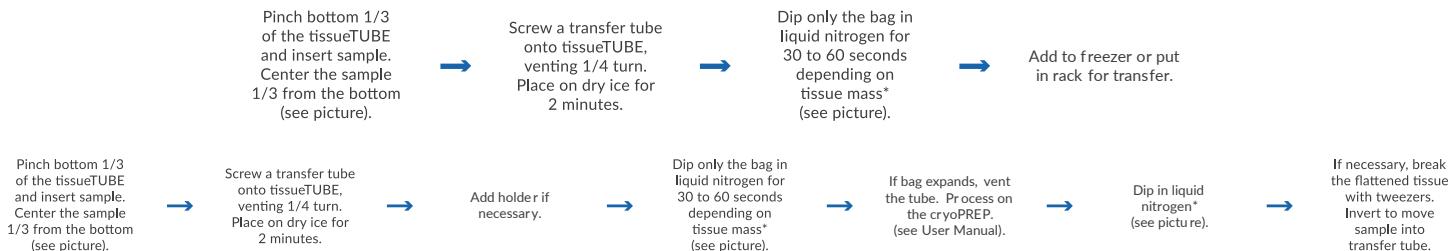
Single-site, Bench-top Workflow



*Note: Do not allow liquid nitrogen to touch the plug or tube. Do not immerse.
Short video on the cryoPREP instrument: <https://www.youtube.com/watch?v=TCJHAwbxeF8>

See Resources section for User Manual links.

Separate Collection and Processing Sites



***NOTE:** Do not allow liquid nitrogen to touch the plug or tube. Do not immerse.
Short video on the cryoPREP system: <https://www.youtube.com/watch?v=TCJHAwbxef8>



tissueTUBE Recommendations with Tissue Mass and CP02 Impact Settings

Mass Range/ Tissue Type	TT05M/TT05M XT		TT1/TT1XT		TT2	
	10–30 mg	30–50 mg	30–100 mg	100–300 mg	300–1000 mg	1000–2000 mg
Brain	1	2	1	2	4	6
Liver	2	3	2	3	4	6
Kidney	3	4	3	4	6	6
Muscle	4	4	4	4	6	6
Heart	5	6	5	6	6	6
Ocular Tissue	5	6	5	6	6	6
Vascular Tissue	5	6	5	6	6	6
Skin	6	6	6	6	6	6
Tumor	6	6	6	6	6	6
Bone	6	6	6	6	6	6
Cartilage	6	6	6	6	6	6

TT05M and TT05M-XT Product Line

Sample Mass: 10–50 mg

tissueTUBE	Transfer Tube	Plug	Insertion Tool*	Holder*
 TT05M (PN 520139) TT05M-XT (PN 520140)	 milliTUBE 1 mL (PN 520128)	 TT05M P (PN 520141)		 TT1 Holder (PN 500095)
 TT05M (PN 520139) TT05M-XT (PN 520140)	 milliTUBE 2 mL (PN 520132)	 TT05M P (PN 520141)		 TT1 Holder (PN 500095)

*Insertion tool and Holder required for CP02.

tissueTUBE: TT05M and TT05M-XT (Used with CP01 and CP02 for sample mass 10–50 mg)

Consumable	Part #	Quantity	Notes
TT05M	520139	25	Soft tissues
TT05M-XT	520140	25	Soft and hard tissues (e.g., heart, muscle, kidney)
TT05 Insertion Tool	500231	1	TT05M and TT05M-XT
TT05M Plug	520141	25	
TT1 Holder	500095	1	TT05M and TT05M-XT (also TT1 and TT1-XT)
milliTUBE 1 mL (no fiber)	520128	100	TT05M and TT05M-XT
milliTUBE 2 mL (no fiber)	520132	100	

Additional Accessories

Consumable	Part #	Quantity	Notes
Rack 10 place tissueTUBE TT05	500284	1	Sample collection rack for (10) TT05. Designed for immersion into liquid nitrogen or dry ice bath.
cryoTUBE 2 mL	520266	25	2 mL cryo-storage tubes compatible with tissueTUBE TT05M when paired with threaded adapter (PN 520264).
tissueTUBE TT05M Insertion Tool for cryoTUBE	500624	1	tissueTUBE Insertion Tool for use with the 2 mL cryogenic vial (PN 520266).
TT05M cryoADAPTER	520264	25	Threaded adapter for use with the 2 mL cryogenic vial and tissueTUBE TT05M (PN 520139 and/or 520140).

TT1 Product Line

Sample Mass: 30–300 mg

tissueTUBE	tissueTUBE Adapter	Transfer Tube	Plug	Insertion Tool*	Holder*
 TT1 (PN 520001) TT1XT (PN 520007)	 TT1ADPM (PN 520142)	 milliTUBE 1 mL (PN 520128)	 TT1P (PN 520006)		 TT1 Holder (PN 500095)
 TT1 (PN 520001) TT1XT (PN 520007)	 TT1ADPM (PN 520142)	 milliTUBE 2 mL (PN 520132)	 TT1P (PN 520006)		 TT1 Holder (PN 500095)
 TT1 (PN 520001) TT1XT (PN 520007)	 TT1ADP13 (PN 520017)	 15x19 mm TC15 Tube (PN 520048)	 TT1P (PN 520006)		 TT1 Holder (PN 500095)
 TT1 (PN 520001) TT1XT (PN 520007)	 TT1ADP13 (PN 520017)	 13x65 mm TC13 Tube (PN 520010)	 TT1P (PN 520006)	N/A	 TT1 Holder (PN 500095)
 TT1 (PN 520001) TT1XT (PN 520007)	N/A	 16x100 mm TC16 Tube (PN 520011)	 TT1P (PN 520006)	N/A	 TT1 Holder (PN 500095)

*|Insertion tool and Holder required for CP02.

tissueTUBE: TT1, TT1-XT (Used with CP01 and CP02 for sample mass 30–300 mg)

Consumable	Part #	Quantity	Notes
TT1	520001	25	Soft tissues (Case of 600 PN 520036)
TT1-XT	520007	25	Soft and Hard tissues (e.g., heart, muscle, kidney) (Case of 300 PN 520092)
TT1 Plug	520006	25	TT1, TT1-XT
TT1 Adapter milliTUBE	520142	25	Recommended for 1 and 2 mL milliTUBE
TT1 Adapter 13x65 mm	520017	25	For 13x65 mm (4 mL) tube 520010
TT1 Insertion Tool	500159	1	Used with TT1, milliTUBE, and 13x65 Adapters
TT1 Holder	500095	1	TT1, TT1-XT (also TT05M and TT05M-XT)
milliTUBE 1 mL (no fiber)	520128	100	Used with TT1 Adapter milliTUBE and TT1 Insertion Tool
milliTUBE 2 mL (no fiber)	520132	100	Used with TT1 Adapter milliTUBE and TT1 Insertion Tool
15x19 mm Tube	520048	100	Used with TT1 Adapter 13x65 and TT1 Insertion Tool
13x65 mm Tube (with cap)	520010	500	Used with TT1 Adapter 13x65
13x65 mm Tube and cap	520025 & 520026	125	Used with TT1 Adapter 13x65
16x100 mm Tube	520191 or 520011	25 or 500	Does not need Adapter

Additional Accessories

Consumable	Part #	Quantity	Notes
tissueTUBE TT1 Cold Station	500157	1	N/A
Rack 8 place tissueTUBE TT1	500041	1	Holds TT1 and TT1-XT. Designed for immersion into liquid nitrogen or dry ice bath.
TT1 & Plug/TT1-XT & Plug Case	520009/520044	300	N/A

TT2 Product Line

Sample Mass: 300 mg–2 g (Compatible with CP02 only)

tissueTUBE	Transfer Tube	Plug	Holder
 TT2 (PN 520021)	 20x125 mm TC20 Tube (PN 520012)		 TT2 Holder (PN 500096)

The TT2 is only compatible with the CP02. The TT2 holder must be installed. The TT2 will require the 20x125 mm TC20 tubes (PN 520012) to hold it in the CP02 properly.

tissueTUBE: TT2 (Used with CP02 for sample mass <2g (Recommended 300 mg–2g))

Consumable	Part #	Quantity	Notes
TT2	520021	25	Soft tissues
TT2 Plug	520023	25	TT2
TT2 Holder	500096	1	TT2
TT2 & Plug Case	520034	300	N/A
20x125 mm (TC20)	520192	25	N/A
20x125 mm (TC20)	520012	500	N/A

TT3 Product Line

Sample Mass: 2–10 g (Compatible with CP03 only)

tissueTUBE	tissueTUBE: TT3 (Used with CP03 for sample mass 2–10g)		
Consumable	Part #	Quantity	Notes
 TT3 (PN 520008)	520008	25	For large tissue mass

The CP03 is designed to make smaller pieces that can then be further processed or pulverized using the CP01 or CP02. The TT3 is a bag and a plastic clip. The sample is added to the TT3 bag and the bag is folded over 1 time for the plastic clip to seal it (like a chip clip).

Starter Kits for cryoPREP Instruments

Starter Kit	Compatible Instruments	Mass Range	Included Products
CP01 Low Mass (PN 500616)	CP01 (PN 500230)	10–300 mg	tissueTUBE TT1 Extra Thick (25) (PN 520007)
			milliTUBE 1 mL AFA Fiber (24) (PN 520135)
			tissueTUBE Extra Thick TT05M XT (25) (PN 520140)
			tissueTUBE TT05M Plug (25) (PN 520141)
			tissueTUBE TT1 - milliTUBE Adapter (25) (PN 520142)
			tissueTUBE TT1 Plug (25) (PN 520006)
CP02 Low Mass (PN 500498)	CP02 110V (PN 500001) CP02 220V (PN 500000)	10–300 mg	Holder tissueTUBE TT1 & tissueTUBE Extra Thick (PN 500095)
			tissueTUBE TT1 Insertion Tool (PN 500159)
			tissueTUBE TT1 Plug (25) (PN 520006)
			tissueTUBE TT1 Extra Thick (25) (PN 520007)
			tissueTUBE TT1 milliTUBE Adapter (25) (PN 520142)
			tissueTUBE TT05 Insertion Tool (PN 500231)
			tissueTUBE TT05M Extra Thick (25) (PN 520140)
			TT05M Plug (25) (PN 520141)
			milliTUBE 1 mL AFA Fiber (24) (PN 520135)
CP02 High Mass (PN 500496)	CP02 110V (PN 500001) CP02 220V (PN 500000)	30 mg–2 g	Holder tissueTUBE TT1 & tissueTUBE Extra Thick (PN 500095)
			tissueTUBE TT1 Plug (25) (PN 520006)
			tissueTUBE TT1 Extra Thick (25) (PN 520007)
			Holder tissueTUBE TT2 (PN 500096)
			tissueTUBE TT2 (25) (PN 520021)
			tissueTUBE TT2 Plug (25) (PN 520023)
			Tube & Cap 16x100 mm (25) (PN 520191)
			Tube & Cap Teflon Septa 20x125 mm (25) (PN 520192)
CP02 Low and High Mass (PN 500497)	CP02 110V (PN 500001) CP02 220V (PN 500000)	10 mg–2 g	Holder tissueTUBE TT1 & tissueTUBE Extra Thick (PN 500095)
			tissueTUBE TT05 Insertion Tool (PN 500231)
			tissueTUBE Extra Thick TT05M XT (25) (PN 520140)
			tissueTUBE TT05M Plug (25) (PN 520141)
			tissueTUBE TT1 Insertion Tool (PN 500159)
			tissueTUBE TT1 Plug (25) (PN 520006)
			tissueTUBE TT1 Extra Thick (25) (PN 520007)
			tissueTUBE TT1 - milliTUBE Adapter (25) (PN 520142)
			Holder tissueTUBE TT2 (PN 500096)
			tissueTUBE TT2 (25) (PN 520021)
			tissueTUBE TT2 Plug (25) (PN 520023)
			milliTUBE 1 mL AFA Fiber (24) (PN 520135)
			Tube & Cap 16x100 mm (25) (PN 520191)
			Tube & Cap Teflon Septa 20x125 mm (25) (PN 520192)
CP03 High Mass (PN 500617)	CP03 (PN 500049)	2–10 g	tissueTUBE TT3 (25) (PN 520008)

Buffer Volume and Focused-ultrasonicator Accessories for Transfer Tubes

Transfer Tube Name and Part Number	Buffer Volume	M220 Holder & Insert	S-Series Holder	ME220 Rack & Waveguide	E220evolution Rack	E220 Rack	LE220 Rack
milliTUBE 1 mL (PN 520128)	300 µL–1.0 mL	Holder XTU (PN 500414) & Insert milliTUBE 1 mL (PN 500422)	Holder milliTUBE 1 mL (PN 500371)	Rack 4 Place milliTUBE (PN 500520) & Waveguide 4 Place (PN 500534)	Rack E220e 4 Place milliTUBE 1 mL (PN 500431)	Rack 24 Place milliTUBE 1 mL (PN 500368)	Rack 24 Place milliTUBE 1 mL (PN 500368)
milliTUBE 2 mL (PN 520132)	1.0–2.0 mL	Holder XTU (PN 500414) & Insert milliTUBE 2 mL (PN 500591)	Holder milliTUBE 2 mL (PN 500375)	Rack 4 Place milliTUBE (PN 500520) & Waveguide 4 Place (PN 500534)	Rack E220e 4 Place milliTUBE 1 mL (PN 500431)	Rack 24 Place milliTUBE 2 mL (PN 500376)	Rack 24 Place milliTUBE 2 mL (PN 500376)
15x19 mm TC15 (PN 520048)	1.0–1.3 mL	N/A	Holder 15x19 mm Tube (PN 500156)	N/A	N/A	Rack 24 Place 15x19 mL Tube (PN 500154)	Rack 24 Place 15x19 mL Tube (PN 500154)
13x65 mm TC13 (PN 520010)	1.0–4.0 mL	N/A	Holder 13x65 mm Tube (PN 500011)	N/A	N/A	Rack 24 Place 13x65 mm Tube (PN 500033)	Rack 24 place 13x65 mm Tube (PN 500033)
16x100 mm TC16 (PN 520011)	1.0–12 mL	N/A	Holder 16x100 mm Tube (PN 500012)	N/A	N/A	Rack 12 Place 16x100 mm Tube (PN 500031)	Rack 12 place 16x100 mm Tube (PN 500031)
20x125 mm TC20 (PN 520012)	5–25 mL	N/A	Holder 20x125 mm Tube (PN 500051)	N/A	N/A	Rack 12 Place 20x125 mm Tube (PN 500032)	Rack 12 Place 20x125 mm Tube (PN 500032)

Resources

cryoPREP

- CP01 User Manual: https://covaris.com/wp-content/uploads/pn_010125.pdf
- Tissue processing with CP01: https://covaris.com/wp-content/uploads/pn_010458.pdf
- CP02 User Manual: https://covaris.com/wp-content/uploads/pn_010035.pdf
- Tissue processing with CP02: https://covaris.com/wp-content/uploads/pn_010303.pdf
- CP02 conversion kit: https://covaris.com/wp-content/uploads/pn_010062.pdf

tissueTUBE

- TT05M: https://covaris.com/wp-content/uploads/pn_010120.pdf
- TT1: https://covaris.com/wp-content/uploads/pn_010046.pdf
- TT2: https://covaris.com/wp-content/uploads/pn_010057.pdf
- Instructions for TT1, TT1 Adapter, and 13x65 mmTtube: https://covaris.com/wp-content/uploads/pn_010058.pdf



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M020074_RevH_Sep2024

