

VIA Extractor™ tissue disaggregator for Omics applications

FAQs

Equipment and components

1. What is the VIA Extractor™ tissue disaggregator?

The VIA Extractor™ tissue disaggregator* digests human and animal solid tissue and tumor samples into a homogenous cell suspension of viable single cells. It is a standardized, closed system and provides a semi-automated process for use in high-throughput omics research research (genomics, proteomics, metabolomics).

2. Where should the VIA Extractor™ tissue disaggregator be placed?

The VIA Extractor™ tissue disaggregator sits on the VIA Freeze™ Uno controlled-rate freezer. The VIA Freeze™ Uno controlled-rate freezer is a benchtop device (width 29.3 cm, depth 35.9 cm, height 44.9 cm) and can be placed in any laboratory environment where the tissue digestion takes place.

3. What is the VIA Freeze™ Uno controlled-rate freezer?

The VIA Freeze™ Uno controlled-rate freezer is a liquid nitrogen-free controlled-rate freezer for biological samples. It combines customizable freezing profiles, electronic control systems, and a conduction cooling method to optimize GMP-compliant cryopreservation. Further details can be found [here](#).

4. What equipment and components do I need to get started with VIA Extractor™ tissue disaggregator for omics applications?

You need the following items:

• VIA Extractor™ tissue disaggregator	• Omics applicator
• VIA Freeze™ Uno controlled-rate freezer	• Heat sealer
• Omics clamp	• Forceps or tweezers
• Omics pouch	• Luer-lock 5 mL syringe

The Omics bundle provides the VIA Extractor™ tissue disaggregator, VIA Freeze™ Uno controlled-rate freezer, and Omics clamp in one convenient package.

- #### 5. Do I need to use the insertion syringes?
- Tissue can be inserted using forceps or tweezers; however, any liquid remaining on the heat seal mark may impair seal quality. Insertion syringes not only facilitate sample insertion but also protect the sample and bag.
- #### 6. Do I need a heat sealer?
- To prevent any sample contamination between samples a heat seal is recommended. See heat seal instructions for more information.

*For research use only (RUO). Not for diagnostic use.

Sample types and cell viability

1. Which tissue samples can be disaggregated by the system?

The system is designed to disaggregate mammalian tissues, tumors and small organs. The system has been tested on:

Mouse	Human
• Kidney	• Melanoma
• Liver	• Brain tissue
• Skeletal muscle	• Spleen
• Lung	• Renal cell carcinoma

- #### 2. Can we extract nuclei?
- This has not yet been tested.
- #### 3. Can we extract cells from fresh frozen tissue?
- Yes, although thawing the sample prior to digestion is recommended. The quality of the cells after the thaw would highly depend on the process by which the tissue was frozen.
- #### 4. Can the cells be preserved for use at a later stage?
- Cells can be preserved by controlled-rate freezing using VIA Freeze™ Uno controlled-rate freezer to maintain viability for further downstream applications.
- #### 5. What sample size ranges can be disaggregated?
- A minimum sample size of 30 mg and maximum sample size of 1.2 g can be successfully disaggregated (dependent upon tissue type).
- #### 6. How is cell viability optimized?
- The VIA Extractor™ tissue disaggregator uses a mild, semi-automated processing approach to maximize cell integrity and preserve content relative to the parent sample.
- #### 7. Which parameters on the device can be adjusted to control tissue disaggregation?
- Different protocols for tissue disaggregation can be created for different tissue types. The parameters that can be adjusted by the user are:
- Time: the length of time of digestion can be changed.
 - Speed: the speed at which the paddles rotate can be varied from 50 to 240 rpm.
 - Mode: the instrument can be set on standard mode (continuous paddle beating) or intermittent (one minute of rotation, one minute pause).
 - Temperature: the temperature of digestion can be adjusted from 0°C to 37°C.

Operational characteristics

- 1. What are the recommended volumes of enzyme reagent?**
2 to 5 mL, depending on tissue size and type.
- 2. At what temperatures does the VIA Extractor™ tissue disaggregator operate?** Digestion can be conducted between 0°C and 37°C.
- 3. At what speed does the VIA Extractor™ tissue disaggregator operate?** Digestion can be conducted between 50 and 240 rpm.
- 4. The maximum temperature of the VIA Extractor™ tissue disaggregator is 3°C lower than the VIA Freeze™ Uno controlled-rate freezer. Is this OK?** Yes, this is to prevent overheating of the sample.
- 5. How do we separate the compartments of the pouch?**
We would recommend carefully cutting with a pair of scissors along the perforations between the compartments.

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CY11631-18Jan22-QA

