Manufacturer
BioDynamics Laboratory Inc. (BDL)
Manufacturing Site
Room 310, 3rd Floor, Mitsui Link Lab Shinkiba 2, 1-17-8,
Shinkiba, Koto-ku, Tokyo 136-0082, Japan
Technical Inquiries
Please contact us via the inquiry form on our website.

Product Datasheet

Version：1.1, Issue Date：2026-10-14

Japanese Datasheet https://www.biodynamics.co.jp/products/
English Datasheet https://bdl-biodynamics.com/products/

Product Name：PhazeKeep, Light

Product Code：DD210S
Size：10 tubes

Product Code：DD210
Size：100 tubes

Product Name：PhazeKeep, Heavy

Product Code：DD220S
Size：10 tubes

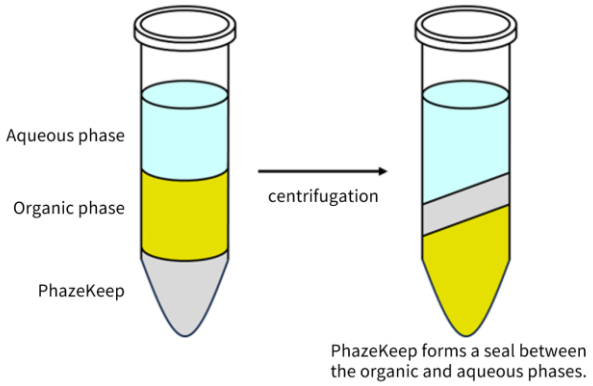
Product Code：DD220
Size：100 tubes

For Research Use Only

Description

Nucleic acid extraction using phenol and chloroform is a method for separating and purifying DNA and RNA through the partitioning of the aqueous phase (upper layer) and organic phase (lower layer) after centrifugation. PhazeKeep migrates to the interface between the aqueous and organic phases upon separation and forms a barrier. Since the organic phase is trapped beneath the gel barrier, contamination from the organic phase or interfacial substances is prevented, and the aqueous phase can be easily recovered. The use of PhazeKeep enables the efficient recovery of DNA and RNA.

PhazeKeep does not inhibit standard nucleic acid restriction enzyme reactions, and it does not adsorb or degrade DNA even when present during heat inactivation (30 minutes at 65° C).



Storage Condition

Store at room temperature.
Do not freeze.

Product Shelf Life

1 year from the date of receipt

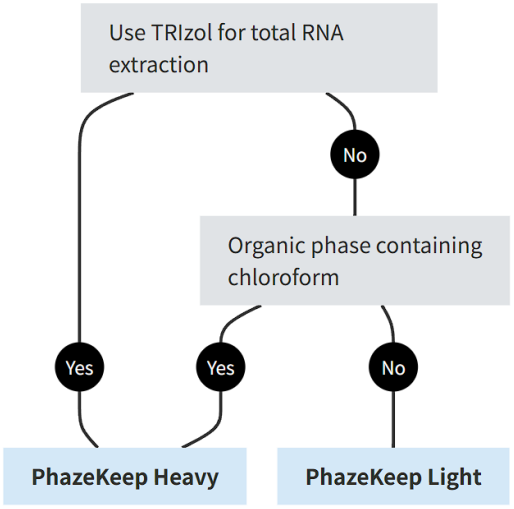
Important Notice

・Since this product is used with hazardous chemicals, please follow the instructions provided by the manufacturers of each chemical regarding handling, storage, and disposal.
・PhazeKeep is difficult to clean up, so please take care to avoid getting it on equipment such as lab benches and pipettes.
・Perform all operations at room temperature.

PhazeKeep and Density

PhazeKeep can be used in protocols for extracting aqueous samples with phenol, phenol-chloroform, and chloroform. For optimal phase separation, the density of PhazeKeep must be lower than that of the organic phase and higher than that of the aqueous phase.
Please refer to the selection chart below to find the PhazeKeep product best suited for your application.

・If the organic phase contains chloroform, use PhazeKeep Heavy; if it does not, use PhazeKeep Light.
・For samples with high salt concentrations or high protein concentrations, we recommend using PhazeKeep Heavy, as salt and protein increase the density of the aqueous phase.



Protocol

1. Before use, make sure that PhazeKeep is at the bottom of the tube. If PhazeKeep is not at the bottom of the tube, spin down the tube (3,000 xg, approximately 30 seconds).
2. Add the aqueous sample and an organic solvent (such as phenol) to the tube containing PhazeKeep.
   *1 When mixing inside the tube containing PhazeKeep, mix with inversion method. If you need to vortex the aqueous sample and organic solvent, vortex them in another tube first, then transfer the mixture to the tube containing PhazeKeep.
   *2 The total volume of the sample and organic solvent used should not exceed 1.5 mL.
3. Centrifuge to separate the phases. Refer the “Centrifugation Speed and Time” guidelines below as a reference.
   *When using a centrifuge with a fixed-angle rotor, align the tubes in the same orientation as when centrifuging in Step 1.
4. Transfer the aqueous phase (upper layer) to a new tube using a pipette.
   *If decanting, proceed with caution and ensure that the barrier is sufficiently strong.
5. Follow the protocol appropriate for your application, such as ethanol precipitation.

Centrifugation Speed and Time

The separation time varies depending on the density difference between the sample and PhazeKeep, as well as the liquid volume. Please refer to the following information.

Test tube size		8,000 *xg*	12,000 *xg*	16.000 *xg*
2 mL	Light	–	10 min	5 min
2 mL	Heavy	2 min	2 min	2 min

Examples of seal Formation Times under Different Centrifugation Conditions

《Test Condition》
PhazeKeep Light / 0.75 M NaCl Solution : Phenol = 1 : 1
PhazeKeep Heavy /2.5 M NaCl Solution : Phenol/Chloroform = 1 : 1

Even if a small amount of PhazeKeep may remain in the bottom of the tube, you can proceed to the next step once the seal is formed.

Appendix

The density of the aqueous phase must be lower than that of PhazeKeep. If the density of the aqueous phase is high, it will be difficult to form a barrier. In that case, please dilute the aqueous phase. The table below shows whether a barrier can be formed, using the concentration of a sodium chloride solution as an aqueous phase.

	NaCl Concentration					
	0.25 M	0.75 M	1.0 M	2.5 M	3.0 M	3.5 M
Light	○	○	×	×	×	×
Heavy	○	○	○	○	×	×

FAQ

Problem	Possible Cause	Resolution
PhazeKeep does not separate properly	The centrifuge speed is incorrect	Increase the centrifuge speed or extend the centrifugation time
	PhazeKeep may have frozen	Store PhazeKeep at room temperature (do not freeze).
	PhazeKeep was not centrifuged before use.	Before use, centrifuge the tube containing PhazeKeep to move the PhazeKeep to the bottom of the tube.
PhazeKeep moves above the aqueous phase	The density of the aqueous phase is too high	Dilute the aqueous phase with water or buffer. After mixing, pierce the PhazeKeep barrier on the tube with a pipette tip, add water or buffer to reduce the density of the aqueous phase, and centrifuge again.
	PhazeKeep has low density	If using “Light,” use “Heavy” instead.
PhazeKeep won't move	The density of the organic phase is low.	Add chloroform to increase the density of the organic phase, then centrifuge again.
	The centrifuge speed is incorrect	Increase the centrifuge speed or extend the centrifugation time
	PhazeKeep has a high density	If using “Heavy,” use “Light” instead.
Samples in TRIzol reagent or similar products do not separate properly with PhazeKeep Heavy	The density of the aqueous phase is too high	Add RNase-free water or buffer (up to 0.2 mL per 1 mL of lysis reagent) to reduce the density of the aqueous phase, then centrifuge again.
	The centrifuge speed is incorrect	Increase the centrifuge speed or extend the centrifugation time