USER MANUAL

Biomeme

Biomeme Sample Prep Guide

Last Updated: 12/11/2019

Table of Contents

Technique Tips

M1 Sample Prep Cartridge

- Try to attach the column tip to the syringe while the former is still in the pouch
- Be sure to make a second hole in each well (except for the air dry) as you go
- Hold the syringe by the column with one hand while pumping with the other
- Pump the syringe at a natural tempo; follow the speed of the liquid (except the air dry, which should always be pumped rapidly)
- To remove the syringe from a well, rock far forward once, far back once, and then out
- Remove the tip from the syringe inside the pouch
- To watch these tips and a full sample prep, view our How-To Video: https://vimeo.com/374684460

Go-Strips

- About one centimeter of eluate should be in the transfer pipette tip when transferring to Go-Strips
- Pipette up and down around 5x in each Go-Strip well to ensure the eluate and lyophilized cake are well-mixed
- Tap the tip on the side of the well to ensure all liquid is transferred

- Once all the eluate is transferred and the void-filling caps have been placed in the Go-Strips, gently tap the Go-Strips on a nearby surface to make sure they are settled and there are no large bubbles
- To watch these tips and see a sample transfer to Go-Strips, view our How-To Video: https://vimeo.com/374937104

FAQs

How do I increase the amount of extracted nucleic acid?

A. Increase the input sample volume.

I. Note: The Biomeme Lysis Buffer (BLB) in the M1 Bulk Sample Prep Kit should not be diluted by more than 1:2 by the addition of your sample (or 500 uL in 1 mL of buffer) or 2:1 (1 mL in 500 uL of buffer) for the M1 Sample Prep Kit for DNA - High Concentration. Dilution beyond these limits may impact the efficiency of the nucleic acid binding to the M1 sample prep column.

B. Increase lysis and/or binding of your sample to the Biomeme M1 sample prep column.

I. Incubate the samples for 1-5 minutes in the Biomeme Lysis Buffer (BLB).

II. Increase the number of pumps in the Biomeme Lysis Buffer (BLB).

III. The developer kits include a single glass M1 sample prep column. Biomeme offers a double glass M1 sample prep column for samples

that are difficult to capture (contact Biomeme to learn more).

IV. For hard to lyse samples, vigorous shaking or bead beating of your sample prior to the Biomeme M1 sample prep process is recommended.

How do I increase the concentration of extracted nucleic acid?

A. Increase the amount of extracted nucleic acid.

   I. See above for suggestions.

B. Decrease the elution volume and use a large (20 mL) syringe for air-dry.

   I. To increase the concentration of the nucleic acids in your elution, we recommend decreasing the volume of the elution buffer. Because some of the elution buffer will remain in the M1 sample prep column, it is suggested that you go no lower than 150 uL. Furthermore, because some Biomeme drying wash (BDW) can remain in the M1 sample prep column at the time of elution we also recommend increasing the air-dry step of the extraction process if you are going to use lower elution volumes. We have thoroughly tested this process and strongly recommend switching the M1 sample prep column to a new 20 mL syringe, doing no more than 10x pumps, switching to a new clean 1 mL syringe, and then eluting.

How do I increase the purity of my extracted nucleic acid?

A. Decrease the amount of buffer that is carried over into the elution

step.

I. Small amounts of buffer may be carried into the elution step. In the vast majority of cases this will not interfere with qPCR. However, should you desire purer nucleic acids we recommend increasing the air-dry step of the extraction process. We have thoroughly tested this process and strongly recommend switching the M1 sample prep column to a new 20 mL syringe, doing no more than 10x pumps, switching to a new clean 1 mL syringe, and then eluting as usual

B. Decrease the amount of protein that is carried over into the elution step.

I. Depending on your sample type, it is possible that small amounts of protein may be carried into the elution step. In the vast majority of cases this will not interfere with qPCR. However, should you desire purer nucleic acids we recommend increasing the volume and/or number of pumps in BPW, BWB, and/or BDW.

What should I do if the sample prep column starts to clog and makes pumping difficult during the lysis buffer stage?

A. If the column starts to clog, you will experience an increase in pressure. **Do not press harder as this will cause additional clogging**. Instead, remove the tip of the M1 sample prep column from the BLB and gently pull back the plunger, wait a few seconds, and slowly push the plunger

back down. You should notice some of the liquid discharge at the open end of the syringe. Repeat this process until all liquid has been discharged from the column.

B. Decrease the amount of sample that you are adding to the Biomeme Lysis Buffer (BLB).

C. Pre-filter your sample prior to extraction to remove any large particulate material.

D. Decrease the number of pumps that you are doing in Biomeme Lysis Buffer (BLB).

How should I store my extracted nucleic acids?

A. For DNA, we recommend storage at 4°C for shorter periods of time or -20°C to -80°C for long term storage.

B. For RNA, we recommend immediate usage or storage at -20°C to -80°C.

Can I buy the buffers separately from the cartridges?

Yes, you have two options:

- The M1 Bulk Buffer Variety Pack contains all the buffers in a bulk form factor
- We can modify the above variety pack if you need a lot of one or two specific buffers or washes. Please contact support@biomeme.com to discuss in detail.

Sample Type Notes

Filter

- Be sure to use with the Sample Homogenization Kit
    - Unscrew the 5mL blue capped tube and set the ball bearing in the inverted cap of the tube
    - Remove your filter from the filter housing and roll so that the surface containing the majority of the filtered material is facing inwards, then place into the blue-capped tube
    - Using a 1 mL transfer pipette, add 2mL of the homogenization buffer (BLB) to the blue-capped tube
    - Be sure to spread and flatten your filter against the inside of the the blue-capped tube before placing the ball bearing inside
    - Carefully place the ball bearing inside, close the cap and vigorously shake the tube for no less than 1 minute to mechanically disrupt the sample
    - Using an additional 1mL syringe, draw up to 1mL of the homogenized solution containing your sample
    - Firmly seat the syringe filter onto the syringe tip's luer lock and then slowly push down on the syringe plunger to filter your sample into the sample prep cartridge
    - Dispose of syringe accordingly
    - Proceed with sample prep
- You can watch the video here: https://vimeo.com/332729079/6be5497c51

Whole Blood

- We recommend using between 25µL and 100µL of whole blood sample
    - For most sensitivity, 100µL is recommended
- When using lower elution volume, please be sure to air dry vigorously during the air drying step
- For whole blood, we recommend using the M1 Sample Prep Cartridge for RNA, even if testing for a DNA target

Tissue

- We recommend homogenizing no more than 25mg of tissue in the Homogenization Tube of our Sample Homogenization Kit
- If sizable debris is present after homogenization:
    - Pre-filter OR
    - let sample settle then transfer supernatant to sample prep cartridge
- For ticks, do not homogenize more than one tick per Homogenization Tube
- For mosquitos, we recommend testing one at time

Swab

- Allowing the swab to sit in the Biomeme Lysis chamber for around 1-3 minutes may increase nucleic acid yield
- Swirl and press against the side of the tube until the associated material has disassociated from the swab or the swab itself begins to dissolve

- You can see and purchase swabs optimized for use with our sample prep technology here: https://shop.biomeme.com/collections/accessories/products/swab-sample-collection-pack-100-qty

Water

- Add up to 1 mL of water when using DNA-HI cartridges
- Do not add more than 250µL when using with DNA or RNA sample prep cartridges
- Pre-filter may be required depending on the turbidity of your water
- Make sure target is abundant enough to detect in 1mL or 250µL of water (depending on sample prep cartridge being used)

Urine

- Add up to 1 mL of urine when using DNA-HI cartridges
- Add up to 250µL of urine when using DNA or RNA sample prep cartridges

Disclaimer

For Research Use Only. Not for use in human or veterinary diagnostics. Biomeme products may not be transferred to third parties, resold, modified for resale or used to manufacture commercial products or to provide a service to third parties without written approval of Biomeme, Inc.

All warranties are subject to our Terms & Conditions and Privacy Policy.

Biomeme, Inc.
1015 Chestnut Street, Suite 1401
Philadelphia, PA, USA 19107
support@biomeme.com

Terms & Conditions and Privacy Policy
https://biomeme.com/privacy-policy-and-terms-of-use/

Patent Protected
https://biomeme.com/patents