

AUTOLAB HBH: Diagnostics Application Note



Transforming Molecular Sample Prep with Autolab HBH

The **Autolab HBH** is a fast and effective nucleic acid preparation method that delivers molecular test-ready samples—both **RNA and DNA**—in under 2 minutes across a wide range of sample types and matrices. The system employs **hyperbaric heating (HBH)** conditions (i.e., internal temperatures exceeding 100°C in a pressurized environment) to rapidly lyse samples and release nucleic acids.

Autolab HBH is technically simple, requiring only two steps:

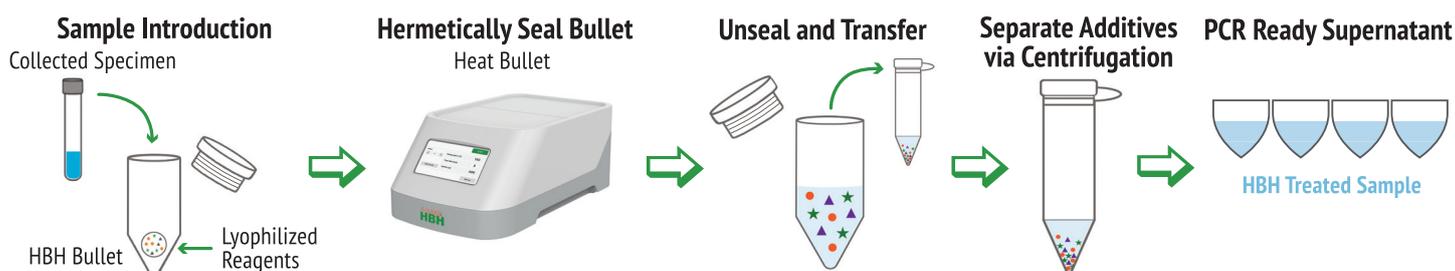
1. Heat up to 1 mL of sample in the proprietary HBH bullet
2. Briefly centrifuge to pellet additives

The resulting supernatant contains **both RNA and DNA**, making it ready for a broad range of molecular testing applications.

Clinical or Research Use Case

The Autolab™ HBH is designed for “Research Use Only” (RUO). It has the ability to detect multiple types of pathogens across multiple sample types, including those known to be difficult to lyse. This makes it suitable for use in multiple research settings including in vitro diagnostic research used to detect pathogens such as *Candida*, *TB*, *Respiratory Viruses such as SARS-Co-V2*, *Flu A/B*, *RSV* and *Strep A*.

Standard Workflow



1. Add room temperature sample to each bullet
2. Load HBH bullet on Autolab HBH instrument and heat
3. Centrifuge post-HBH bullet for at least 30 seconds at 3500 x g
4. Transfer the content of each bullet to a microcentrifuge tube and centrifuge for at least 30 seconds at 3500 x g
5. Transfer supernatant to a new tube. Supernatant is ready for downstream molecular testing.

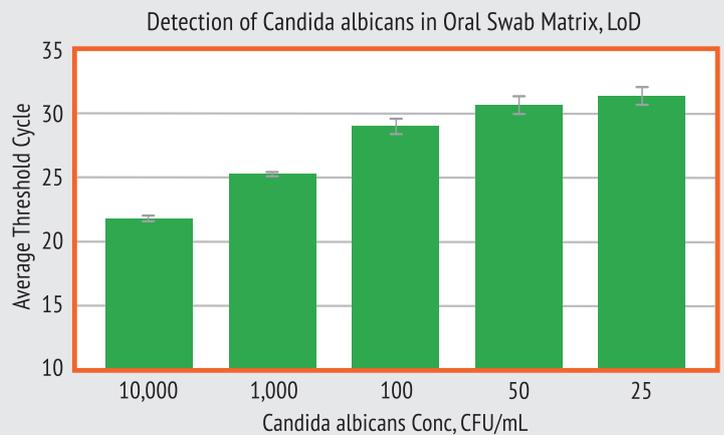
Note: Based on sample types, there might need to be additional steps prior to HBH. Heating time and temperature depends on target.

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Protocol – Candida albicans

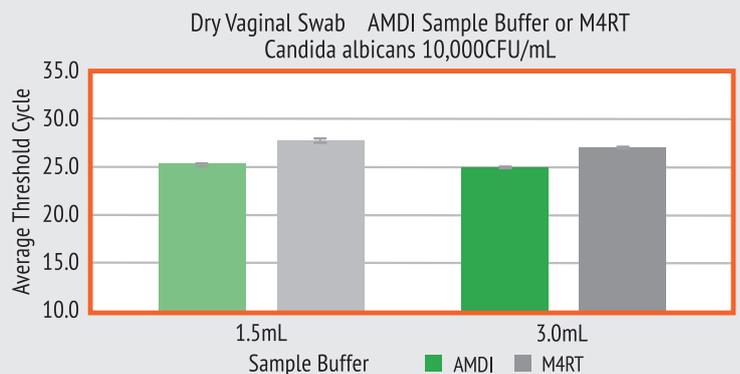
Oral Swab

1. Add room temp sample to each bullet
2. Set the Autolab HBH according to below:
 - Temp: 130°C
 - Hold Time: 0 sec
 - Sample Volume: 400uL
3. Load HBH bullet on Autolab HBH instrument and heat
4. Centrifuge post-HBH bullet for at least 30sec at 3500 x g
5. Transfer the content of each bullet to a microcentrifuge tube and centrifuge for at least 30sec at 3500g
6. Transfer supernatant to a new tube. Supernatant is ready for downstream molecular testing.



Dry Vaginal Swab

1. Resuspend room temp dry swab in choice of buffer. Vortex.
2. Set the Autolab HBH according to below:
 - Temp: 130°C
 - Hold Time: 0 sec
 - Sample Volume: 400uL
3. Proceed with steps 1 – 5 from the standard protocol

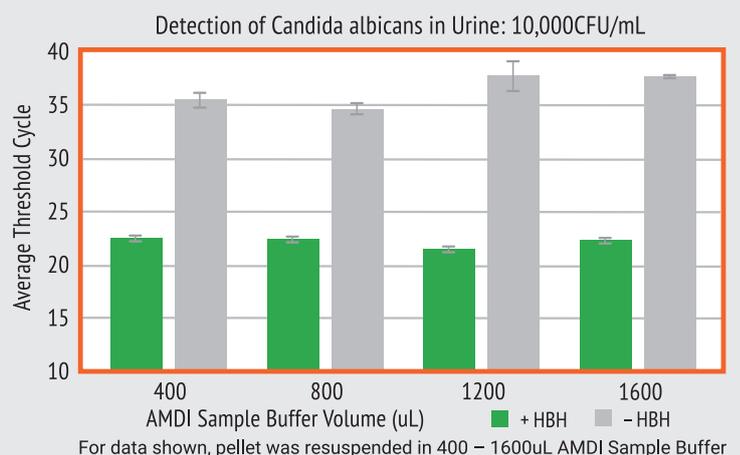


Note: high salt content buffers might need further dilutions prior to Autolab HBH

For data shown 1.5mL and 3.0mL of AMDI Sample Buffer or M4RT were used

Urine

1. Centrifuge room temp urine sample (1 mL) at 3,000 x g for 10 mins
2. Decant supernatant without disturbing the pellet
3. Resuspend pellet in choice of buffer
4. Set the Autolab HBH according to below:
 - Temp: 130°C
 - Hold Time: 0sec
 - Sample Volume: 400uL
5. Proceed with steps 1 – 5 from the standard protocol



For data shown, pellet was resuspended in 400 – 1600uL AMDI Sample Buffer

Sample Volume and Kits

Sample Volume (uL)	Kit Catalog Number
300 – 600uL	HBH-K01
700 – 1000uL	HBH-K02