

AssayMAP Protein Sample Prep Workbench

Immobilization v2.0 Quick Start Guide

This guide is intended for users who have been trained in the proper use of the AssayMAP Bravo Platform and understand the safety guidelines in the [Bravo Platform Safety and Installation Guide](#). The procedures in this guide require the Protein Sample Prep Workbench and VWorks Automation Control software. See the user guide to verify the required software versions.

Step 1. Design your run

Use the **Immobilization Reagent Volume Calculator** to:

- Determine reagent volume preparation requirements.
- Ensure labware selections are consistent with the volume requirements.

For in-depth assay development guidelines, see the [Immobilization v2.0 Users Guide](#) in the Literature Library of the Protein Sample Prep Workbench.

Step 2. Prepare reagent plates

To minimize evaporation, fill the labware immediately before run time or keep them covered until you run the protocol.

CAUTION

A small reagent volume excess is required in all labware types to ensure proper volume transfer.

Use the Reagent Volume Calculator to automatically include excess volume, or look up the recommended value for each allowable labware type in the [AssayMAP Labware Reference Guide](#), which is available in the Literature Library page of the workbench.

Step 3. Prepare the system

To prepare the system:

- 1 Check the levels of the wash station source and waste carboys, and fill or empty as required.
- 2 If you have not already done so, turn on the AssayMAP Bravo Platform and accessories, and start the Protein Sample Prep Workbench.
- 3 Open the **Utility Library**, and then open the **System Startup/Shutdown** utility



- 4 Click **Run Startup** to prepare the system for the run.

WARNING

The Bravo head and tie bar will move during the Bravo Startup protocol. To prevent injury, keep clear of the device while it is in motion.

- 5 During the Startup protocol, verify that all the wash station chimneys have liquid flowing through them. If liquid is not flowing through the chimneys, see the [96 Channel Wash Station Maintenance Guide](#) for troubleshooting guidelines.



CAUTION

To avoid a hardware crash and equipment damage, ensure that the wash station contains the white wide-bore chimneys when using the AssayMAP 25 µL cartridges.

Note: The wash station wide-bore chimneys work for both 5-µL and 25-µL cartridges and are standard on wash stations purchased in 2020 onward. The wide-bore chimneys are white plastic, whereas the normal-bore chimneys are a semi-clear plastic. For details, see the [96 Channel Wash Station Maintenance Guide](#).

Step 4. Run the application

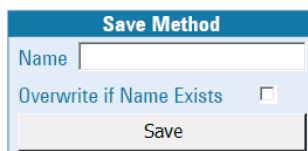
To run the application:

- 1 Run the **Cartridge Transfer** utility to set up the cartridges .
- 2 Open the **Immobilization v2.0** app.
- 3 Under **Select Method**, click , and then locate and select the method for the cartridge size you are using (5 or 25 µL). Click **Load** to display all the settings associated with the selected method.

Note: Immobilization methods are saved in the C:\VWorks Workspace\Methods\Immobilization 2.0 folder. Agilent provides a method with default settings for each cartridge size. Each default method file name has the cartridge size as a prefix.

To modify the selected method, proceed to step 4. Otherwise, go to [step 5](#).

- 4 To create or modify a method:
 - a Select the **Application Settings**. For help, see ["Application Settings" on page 3](#).
 - b In the **Labware Table** of the app interface, select the labware for your run.
 - c Specify the method **Name** in the **Save Method** area, and if applicable, select **Overwrite if Name Exists**. Click **Save**.



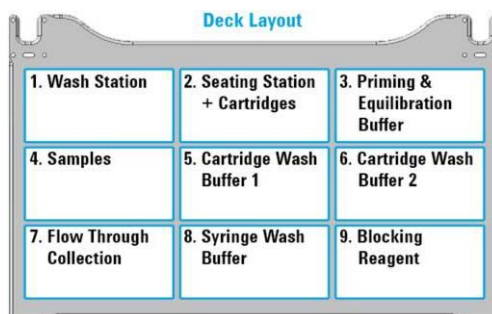
The image shows a 'Save Method' dialog box. It has a title bar 'Save Method'. Inside, there is a 'Name' label followed by a text input field. Below that is a label 'Overwrite if Name Exists' followed by an unchecked checkbox. At the bottom is a 'Save' button.

Note: Agilent recommends using the cartridge size as a prefix for your method naming convention so that you know if the method matches the cartridge size in use.

WARNING

The probes of the Bravo 96AM Head are sharp and can scratch you if they brush across your hand. A probe scratch can expose you to any contaminants remaining on the probes. Be careful to avoid touching the probes.

- 5 Place filled reagent plates at the assigned deck locations, as shown in the **Deck Layout** of the app interface.

**CAUTION**

Improperly seated labware can cause a hardware collision, resulting in equipment damage. Ensure that all labware are properly seated within the alignment features of their respective platepads.

CAUTION

Incorrect labware selections can cause a hardware collision, resulting in equipment damage. Ensure that the selections in the Labware Table exactly match the physical labware present on the Bravo deck.

- 6 Click **Run Protocol** to start the run.

Step 5. Clean up after each run


To clean up after the run:

- 1 Remove used labware from the deck.
- 2 Discard the leftover reagents appropriately.
- 3 *Optional.* To conduct stringent washing of the syringes, run the **Syringe Wash** utility



Step 6. Shut down at end of day

To shut down at the end of the day:

- 1 Open the **System Startup/Shutdown** utility .
- 2 Remove everything from the deck except the 96AM Wash Station (deck location 1) and the 96AM Cartridge & Tip Seating Station (deck location 2), and then click **Run Shutdown**.
- 3 After the Shutdown protocol has completed, turn off the power at the AssayMAP Bravo Platform and the accessories.
- 4 Close the Protein Sample Prep Workbench software.

Application Settings

The following tables provide an overview of the Application Settings section in the Immobilization v2.0 app.

Immobilization v2.0

Select Method
Browse for a Method [] Load

Application Settings
Number of Full Columns of Cartridges [1]

Step	Conduct Step?	Volume (µL)	Flow Rate (µL/min)	Wash Cycles
Initial Syringe Wash	<input type="checkbox"/>			
Prime	<input type="checkbox"/>			
Equilibrate	<input type="checkbox"/>			
Load Samples	<input type="checkbox"/>			
Collect Flow Through	<input type="checkbox"/>			
Cup Wash 1	<input type="checkbox"/>			
Internal Cartridge Wash 1	<input type="checkbox"/>			
Collect Flow Through	<input type="checkbox"/>			
Load Blocking Reagent	<input type="checkbox"/>			
Collect Flow Through	<input type="checkbox"/>			
Cup Wash 2	<input type="checkbox"/>			
Internal Cartridge Wash 2	<input type="checkbox"/>			
Collect Flow Through	<input type="checkbox"/>			
Stringent Syringe Wash	<input type="checkbox"/>			
Re-Equilibrate	<input type="checkbox"/>			
Final Syringe Wash	<input type="checkbox"/>			

Deck Layout

1. Wash Station	2. Seating Station + Cartridges	3. Priming & Equilibration Buffer
4. Samples	5. Cartridge Wash Buffer 1	6. Cartridge Wash Buffer 2
7. Flow Through Collection	8. Syringe Wash Buffer	9. Blocking Reagent

Labware Table

Deck Location	Labware Type
1	96AM Wash Station
2	96AM Cartridge & Tip Seating Station + Cartridges
3	No Labware
4	No Labware
5	No Labware
6	No Labware
7	No Labware
8	No Labware
9	No Labware

Status
Run Protocol
Pause
Clear All
Toggle Full Screen
App Library
Utility Library
Workflow Library
Save Method
Name []
Overwrite if Name Exists ☐
Save

Table Application Settings overview

Setting	Description	Default value (range)			
Number of Full Columns of Cartridges	Specifies the number of full columns in the cartridge holder at deck location 2.	1 (1–12)			

Steps	Description	Cartridge size	Volume (µL)	Flow Rate (µL/min)	Wash Cycles
Initial Syringe Wash	Washes syringes at the wash station (deck location 1).	5 µL:	–	–	3
		25 µL:	–	–	3
		Range:	–	–	0–10
Prime	Aspirates Priming Buffer (deck location 3) into the syringes, and then dispenses it through the cartridges into the wash station (deck location 1).	5 µL:	100	300	1
		25 µL:	250	300	1
		Range:	0–250	0.5–500	0–10
Equilibrate	Aspirates Equilibration Buffer (deck location 3) into the syringes, and then dispenses it through the cartridges into the wash station (deck location 1).	5 µL:	50	10	1
		25 µL:	250	10	1
		Range:	0–250	0.5–500	0–10

Steps	Description	Cartridge size	Volume (µL)	Flow Rate (µL/min)	Wash Cycles
Load Samples	Aspirates samples (deck location 4) into the syringes, and then dispenses them through the cartridges into the Flow Through Collection plate (deck location 7) or into the wash station (deck location 1).	5 µL:	100	5	3
		25 µL:	100	5	3
		Range:	0–1000	0.1–500	0–10
Collect Flow Through	If selected, collects the sample flow-through in the Flow Through Collection plate (deck location 7). If not selected, discards the sample flow-through to waste in the wash station (deck location 1).	–	–	–	–
Cup Wash 1	Rinses the cartridge cups with Cartridge Wash Buffer 1 (deck location 5), and then discards the liquid into the wash station (deck location 1).	5 µL:	25	–	3
		25 µL:	25	–	3
		Range:	0–100	–	1–10
Internal Cartridge Wash 1	Aspirates Cartridge Wash Buffer 1 (deck location 5) into the syringes, and then dispenses it through the cartridges into the Flow Through Collection plate (deck location 7) or into the wash station (deck location 1).	5 µL:	50	10	3
		25 µL:	250	10	3
		Range:	0–250	0.5–500	0–10
Collect Flow Through	If selected, collects the Internal Cartridge Wash 1 flow-through in the Flow Through Collection plate (deck location 7). If not selected, discards the Internal Cartridge Wash 1 flow-through into the wash station (deck location 1).	–	–	–	–
Load Blocking Reagent	Aspirates Blocking Reagent (deck location 9) into the syringes, and then dispenses it through the cartridges into the Flow Through Collection plate (deck location 7) or into the wash station (deck location 1).	5 µL:	100	5	3
		25 µL:	100	5	3
		Range:	0–250	0.1–500	0–10
Collect Flow Through	If selected, collects the Blocking Reagent flow-through in the Flow Through Collection plate (deck location 7). If not selected, discards the Blocking Reagent flow-through into the wash station (deck location 1).	–	–	–	–
Cup Wash 2	Rinses the cartridge cups with Cartridge Wash Buffer 2 (deck location 6) and discards the liquid into the wash station (deck location 1).	5 µL:	25	–	3
		25 µL:	25	–	3
		Range:	0–100	–	1–10
Internal Cartridge Wash 2	Aspirates Cartridge Wash Buffer 2 (deck location 6) into the syringes, and then dispenses it through the cartridges into the Flow Through Collection plate (deck location 7) or into the wash station (deck location 1).	5 µL:	50	10	3
		25 µL:	250	10	3
		Range:	0–250	0.5–500	0–10

Steps	Description	Cartridge size	Volume (µL)	Flow Rate (µL/min)	Wash Cycles
Collect Flow Through	If selected, collects Internal Cartridge Wash 2 flow-through in the Flow Through Collection plate (deck location 7). If not selected, discards Internal Cartridge Wash 2 flow-through into the wash station (deck location 1).	–	–	–	–
Stringent Syringe Wash	Aspirates Syringe Wash Buffer (deck location 8) into the syringes, and then discards the liquid into the wash station (deck location 1).	5 µL:	50	–	2
		25 µL:	50	–	2
		Range:	0–250	–	1–10
Re-Equilibrate	Aspirates Equilibration Buffer (deck location 3) into the syringes, and then dispenses it through the cartridges into the wash station (deck location 1).	5 µL:	50	10	1
		25 µL:	250	10	1
		Range:	0–250	0.5–500	0–10
Final Syringe Wash	Washes the syringes at the wash station (deck location 1).	5 µL:	–	–	3
		25 µL:	–	–	3
		Range:	–	–	0–10

**Contacting
Agilent
Technologies**

Web: <https://www.agilent.com>

Contact page: <https://www.agilent.com/en/contact-us/page>

Documentation feedback: documentation.automation@agilent.com