

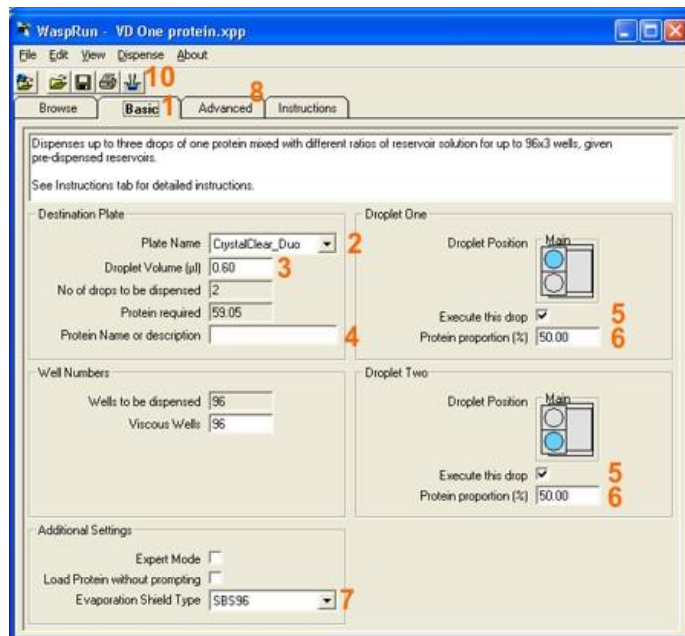
Dispenses multiple drops of one protein mixed with different ratios of reservoir solution for up to 96x3 wells, given pre-dispensed reservoirs.  
Can cover drops with Pure Silicone oil.



## Step-by-Step Instructions

Start WaspRun Screening by clicking on this icon:

Navigate to Vapor Diffusion and then click on "Single protein up to 3 drops" or the image.



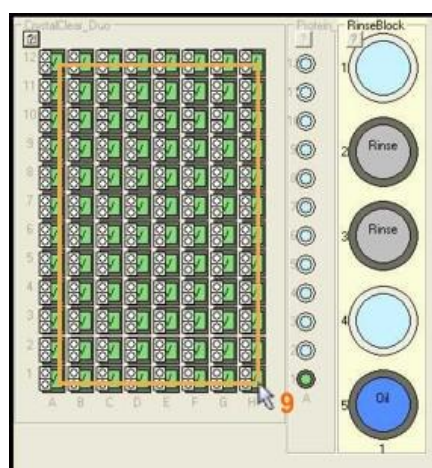
1. Switch to the 'Basic' Tab
2. Choose a Plate type (number of drops displayed will adjust automatically)
3. Specify a volume for the drops
4. Enter a Protein name or description for the experiment if desired. This can be printed and will be logged
5. Choose whether to execute each drop
6. Specify Protein proportion for each droplet position
7. Check that the correct shield is selected (SBS96 for Oryx4/8, SBSNano for OryxNano)

8. Check items on the 'Advanced' tab if desired

*New:* Number of Rinses and Dips: Increasing these reduce the possibility of transfer from one reservoir to the next drop(s) but slows the experiment down. Default values are: Number of Rinses: 0; Number of Dips: 1

9. (Optional) Drag out a block on the Destination Plate in the plateloader view to dispense all or part of a plate.

10. Click on the 'Dispense' menu item or button to execute the experiment.



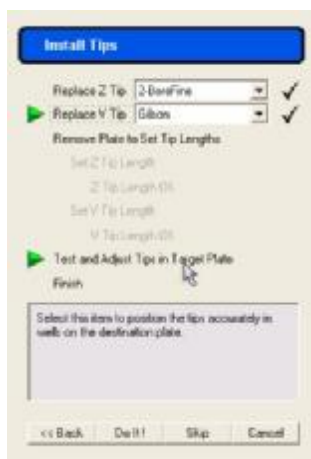
## Hardware Preparation

1. Place the desired Destination plate on the left side of the table of the Plate Loader.
2. Place the Source Plate to the right of the Destination Plate
3. Place the Protein load plate and rinse block or combined protein load strip and rinse block to the right of the Source plate.
4. Place a glass vial in each well of the rinse block. Fill the glass vials with water as follows: Vials 1, 2 and 3: 95% full. Vial 4: empty. Vial 5: 50% full of Pure Paraffin Oil (for modified Microbatch where some evaporation is required the plate can be topped up with 1.5-2.5ml of a mixture of 50% Silicone oil and 50% paraffin oil after the experiment is completed.)



5. Connect a **2-channel Microtip** to the first two channels (green and red). Place the tip in the 2-channel "collet" (holder) on the left (Z) arm of the Plate Loader.
6. Fill the ground glass syringes of the upper valves with degassed pure water and replace them.

## Software Preparation



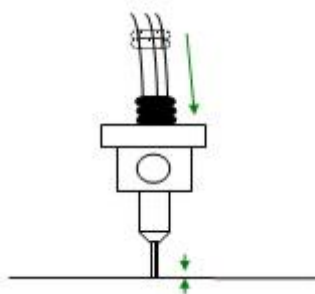
7. You will be asked to confirm that the correct tip is attached. Follow the instructions on the Wizard (shown on the left) to install the correct tips and align the tip with the plate.
8. Click on the items in the Wizard to perform the action or to indicate that you have done what was requested.
9. You may skip actions in the Wizard by clicking on items further down or on 'Finish'.
10. You may repeat items in a Wizard by clicking on earlier items that are enabled.
11. Clicking 'Cancel' will abort the experiment. (Don't do it)
12. You will be asked to place the plates on the Plateloader

## Running the Experiment

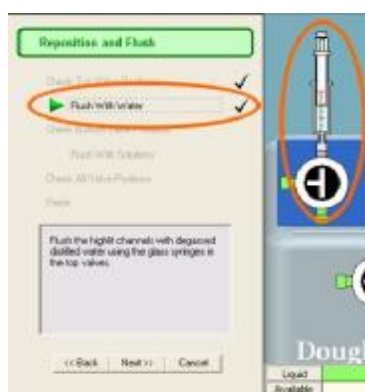
13. A page of configuration information and instructions will now appear. Click OK
14. Air will now be loaded into the Microtip to separate the protein from water already in the Microtip.
15. After loading air, you will be asked to provide protein. Place the protein in the position chosen on the Protein Load Plate. Click OK. The tip will automatically load the protein. Wipe the tip after the loading is complete if required.
16. Click OK to carry out the experiment automatically

## Setting the Height of the Microtip

1. If you suspect that the 2-channel Microtip is not set to the correct height select **Remove Plate to Set Tip Lengths** then **Set Z Tip Height**. The arm(s) will move to its lowest position. Follow the instructions on the screen:



- a. Move one o-ring towards the tip and the other two away from the tip
- b. Adjust the height of the Microtip until it is just touching the table by pushing through the lower o-ring
- c. Mark the height by moving the top two o-rings down to the top of the collet.



## Debubbling and Flushing

1. At the beginning of each day the system will require debubbling. When presented with the "Reposition and Flush" Wizard the Microtip will be above the Rinse bottle. If air bubbles are present in the lines:
  - a. Remove the PTFE tubing from the needles of debubbled motorized syringes.
  - b. Expel water and air bubbles from the tubing using the ground glass syringe.
  - c. Reconnect the tubing carefully, ensuring no air bubbles re-enter.
2. This action will also flush water through the Microtip, but it is a good idea to flush more water through the tip after reconnecting the tubing to the motorized syringe to ensure that there is no air in the Microtip.
3. Check all valve positions match the software before continuing with the experiment.