Oct 06, 2020

Protocol 1: Micropipette

In 1 collection

1

[1]UCSC

1 *Works for me* This protocol is published without a DOI.

UCSC BME 22L

Kamron Mojabe

ABSTRACT

For this lab, you will understand the mechanics, know how to use the buttons, and understand the standard error involved with a micropipette.

Students must know how to appropriately use their tools, it is vital that they understand how to use their micropipette for they will have to use it for the remainder of their lab course/career. They should understand when to use which tip and how to extract and give precise measurements of the product

Students will understand how there is error involved in micropipettes. Every time they use it there will be different results. This understanding of error also allows us and them to know that their equipment is accurately calibrated/assembled.

PROTOCOL CITATION

2020. Protocol 1: Micropipette. **protocols.io**
https://protocols.io/view/protocol-1-micropipette-bjcskiwe

COLLECTIONS

Protocols for Materials

CREATED

Aug 05, 2020

LAST MODIFIED

Oct 06, 2020

PROTOCOL INTEGER ID

40050

PARENT PROTOCOLS

Part of collection
Protocols for Materials

MATERIALS

NAME	CATALOG #	VENDOR
P1000 micropipet and Tips		
Water		
P20 micropipette and tips		
P200 micropipette and tips		
Scale		

NAME	CATALOG #	VENDOR
Weigh boat		

SAFETY WARNINGS

Always have on Necessary PPE
Makes sure to keep your micropipette upright at all times
Do not get microscale wet
Always replace pipette tip after use

ABSTRACT

For this lab, you will understand the mechanics, know how to use the buttons, and understand the standard error involved with a micropipette.

Students must know how to appropriately use their tools, it is vital that they understand how to use their micropipette for they will have to use it for the remainder of their lab course/career. They should understand when to use which tip and how to extract and give precise measurements of the product

Students will understand how there is error involved in micropipettes. Every time they use it there will be different results. This understanding of error also allows us and them to know that their equipment is accurately calibrated/assembled.

BEFORE STARTING

Watch Supplemental Videos
Read Protocol
Take Prelab Quiz

Calibrating your Scale

1 Turn the scale on and wait for the display to show “0.000g”

2 Press and hold the ON key until the display shows “CAL” then release

3 Press the ON key once more. The display will flash 10.000g.

4 Place one of the 10g calibration weights on the center of the platform.

Once the weight is accepted, the display will change to show 20.000g

5 Place the second 10g weight on the top of the first one to equal a total of 20.000g.

The scale is then calibrated.

Using the Micropipette

6 Hold Micropipette firmly in hand.

7 Add the correct pipette tip for the appropiate volume.

Large tips for **1000 µl** . Small tips for **200 µl** and **20 µl** .

8 Turn the dial to the respective volume.

Make sure you do not turn the dial past the maximum point.

9 Now, gently press on the top of the pipette until you reach the first click.

Release the the button to fully extract the desired amount of the solution into the tip.
Make sure that the pipette is held perfectly veritcal to ensure that the full volume of what the solution you want is extracted.

10 Once the solution is in the tip, place the pipette into the empty container you would like to dispense the solution in. Firmly press the top of the pipette to dispense the full volume of the solution into the container.

11 When the full volume of the solution is out of the tip, you may place to the tip over the "tip waste" container and discard the used tip by pressing the eject button.

Calculating Mass

12 Turn on your weighing scale (0.000 g)

13 Once the scale is on, a number will display. Add the weigh boats and hit the tare button.

The tare will calibrate whatever is on the scale to display as zero. The scale should display no weight is on it, even though our weigh boat is on top of it.

14 Using the steps in the above section (Using the micropipette), pipette a known volume of your reagent (water or glycerol).

15 Add reagent to weigh boat and record the measured weight.

16 After recording the weight, hit the tar button

17 Repeats steps 8-11 for 5 times with each reagent and each micropipette.

18 Discard the weigh boat with the reagents on it.