



DEC 29, 2023

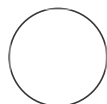
🌐 Loading Syringes to Inject into Microfluidics Device

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Droplet Microfluidics



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ABSTRACT

Protocol for loading syringes with small amounts of liquid sample for injection into droplet microfluidic devices.

PROTOCOL MATERIALS

⌘ PE tubing Scientific
Commodities Catalog #BB31695-PE/2

Step 3

⌘ HFE 7500 Perfluorinated
Oil

Step 2

OPEN  ACCESS



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Protocol status: Working
We use this protocol and it's working

Created: Aug 22, 2022

Last Modified: Dec 29, 2023

Preparing Syringes

5m

1 Take out a syringe

Equipment

Luer Lok Syringe (1mL) NAME

BD Biosciences BRAND

309628 SKU

Add 27g needle to the syringe


Equipment

Precisionglide Needle NAME

BD BRAND

301629 SKU

2 Use the needle and syringe to draw out approximately 200 μ L of

 HFE 7500 Perfluorinated Oil Becton Dickinson
(BD)

3 Cut approximately **20 centimeters** of PE tubing Becton Dickinson (BD) Catalog #BB31695-PE/2

with a razor and attach it to the needle tip.

Note

Cutting the tubing at an angle makes for easier insertion into microfluidic device downstream

Loading the Syringe

5m

- 4 Push the syringe so that the HFE7500 oil starts dripping at end of the tubing.

Note

Make sure to keep the syringe pointed up so that the air leaves the syringe first. **There must be no air bubbles in the syringe or needle.**

- 5 Put the tube into the solution that you would like to load, and slowly draw the syringe to pull the solution into the tubing and syringe.

Note

Keep the syringe upright the whole time so that the oil remains on the bottom of the syringe. **Ensure there are no air bubbles** in the tubing - if there are, push syringe to clear the air bubbles then pull to draw again.

Interfacing with the Device

5m

- 6 Attach the loaded syringes to the syringe pumps

Note

You may have to keep the syringe pump and syringe upright to keep the oil on the bottom and the solution on top. *This is only necessary for large volumes of sample solution*

Equipment

NE-300 Just Infusion™ Syringe Pump NAME

Automatic syringe pump TYPE

New Era Pump Systems, Inc. BRAND

NE-300 SKU

<https://www.syringepump.com/NE-300.php> LINK

- 7** Insert the other end of the tubing into the appropriate hole in the microfluidic device, using a tweezer or by hand.

- 8** Set the appropriate syringe diameter and pump rates into the syringe pump and press start. You may want to begin the pumps with a higher pump rate in order to get the syringes to pressurize more quickly.