

## Check your understanding



**1** What are some advantages of using biochips?

*Answer* [ The capacity of an entire lab can be fitted onto a small chip. This saves money, equipment, space, sample volumes, and chemicals. ]

**2** What is the current design process for biochips (before our approach)?

*Answer* [ Designers come up with multiple possible choices based on many calculations regarding the specifications of the channels and the droplets (and some other things). To test those chips though, one must make all of these possible options and see if they work as expected. ]

**3** How does our simulation make this process easier and better?

*Answer* [ The simulation allows the designer to test the chips BEFORE they are made. This is much simpler and saves a lot of time and money. ]

**4** How do scientists direct the droplets' movements?

*Answer* [ By using microfluidic resistance. Droplets always prefer the channels with lowest resistance. The level of resistance depends on the dimensions of the channels, which is why their design is really important. ]