MIC
Molecular Imaging Center

How to Use Injection Pump

Connect the pump to electric power
Load the syringe into the syringe slot Use the button at the back of the pump to move the pusher block to the left until it is pressing on the syringe barrel. See table below for explanation on how to move the pusher block
Set up the syringe diameter: Press SET DIAMETER See table below for most common syringe diameters
Set REFILL rate to a maximum value This is the speed with which the pusher block moves backwards
Set the TARGET volume in ml! This is the total volume of the contrast that will be injected. For a rat of 200 g, this will be 200 µl (dose 0.1 mmol/kg) or 400 µm (dose 0.2 mmol/kg) NOTE: If this is the first injection, add 100 µl to the total volume to flush the dead space inside the cannula.
Set the INFUSE rate in µm/min! To compute the infuse rate, use the formula below. In general, multiply target V (in µl): by 6 for a 10 sec or by 4 for a 15 sec injection
Push RUN to start the infusion Make sure the display says INFUSE when you are ready to start If it says INTERRUPT, you will get a wrong volume

REFILL = pusher block moves back
INFUSE = pusher block moves forward

Set Target Volume, Infuse Rate and Refill Rate by:
Press SET + TARGET VOLUME/INFUSE RATE/ REFILL RATE + DESIRED NUMBER + ENTER

Infuse rate (µl/min) =

$$\frac{\text{Target Volume (ml)} * 1000\ \mu l/1ml}{10\ s * 1\ min/60\ s} = \frac{\text{Target Volume } (\mu l)}{(1/6)}$$

1 ml syringe = 4.78 mm
3 ml Omnifix Braun = 9.68 mm
5 ml Omnifix = 12.45 mm
Insulin syringe (8mm tip) = 3.5 mm