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Injection Valve & Sample Loop

Easy injection of barcoded mRNA capture beads into the scRNA-Seq system

Individually encapsulated mRNA capture beads for scRNA-seq applications

Injection Valve and Sample Loop for scRNA-Seq

The Injection Valve and Sample Loop for scRNA-Seq from Dolomite Bio enables easy and gentle introduction of evenly distributed mRNA capture beads into the scRNA-Seq System. This allows beads to be individually encapsulated into droplets with single cells for scRNA-Seq applications.

Injection Valve and Sample Loop benefits:

- Minimal damage to beads: Uses no harsh mechanical stirring methods, so beads are not damaged/broken prior to encapsulation
- Easy visualization: The integrated mirror and chip holder enables convenient use of the High Speed Microscope and Camera
- Efficient bead usage: The full bead suspension volume (500µl) is processed for encapsulation, with minimal dead volume and wasted beads, unlike syringe pump methods
- Prevents blocking: Beads are evenly distributed within the sample loop, which prevents grouping and blockages when flowing into the RNA-Seq chip
- Convenient sample collection: An integrated holder for either Falcon® tubes or Eppendorf® tubes makes emulsion collection easy

The RNA-Seq System

The Injection Valve and Sample Loop, for scRNA-Seq, is a complete module for the loading and subsequent flow of 500µl of barcoded mRNA capture beads (suspended in lysis buffer) into the scRNA-Seq Chip. Beads are loaded into the sample loop via a 1ml syringe and are evenly distributed across the length of the sample loop.

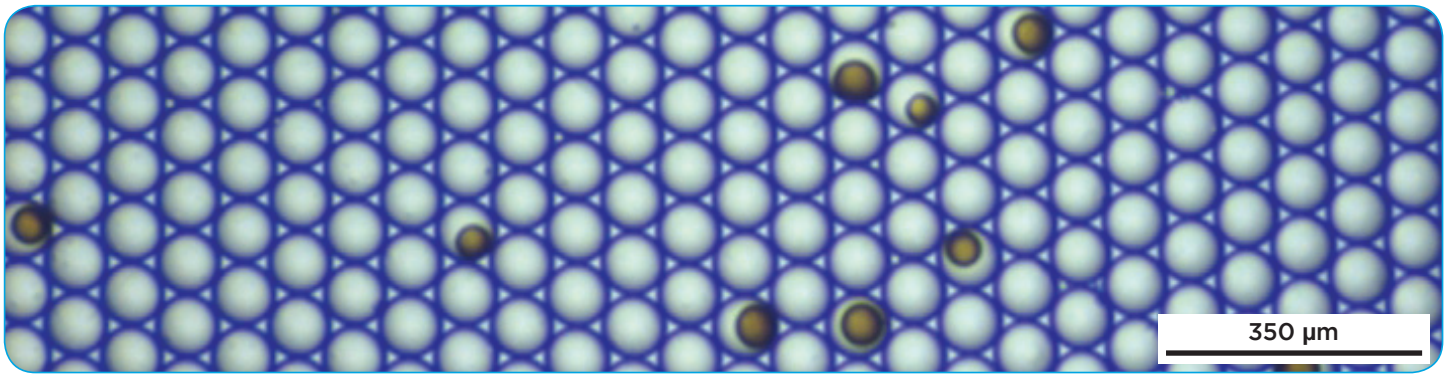
The Injection Valve and Sample Loop module is fitted with a 4-Way valve, which can be switched from injection to pumping a driving fluid from a pressure pump. The driving fluid pushes the beads from the sample loop into the chip for encapsulation with single cells for scRNA-Seq. Droplets can then be collected inside a Falcon®/Eppendorf® tube.

The module works to prevent blockages or bead damage and creates simple, compact microfluidic connections, between injection and pumping.

Injection Valve and Sample Loop for scRNA-Seq features:

The module includes a sample loop, 4 way-valve and integrated mirror and chip holder. The internal diameter of the sample loop makes the module highly suited to dealing with large beads and minimising the chances of blockages. The module also has a Falcon®/Eppendorf® tube holder to capture droplets after formation.

The module is fully compatible with Dolomite Bio's scRNA-Seq system, and connects directly to the P-Pump, 1ml loading syringe and scRNA-Seq Chip via simple microfluidic connections.



Droplets produced using the Injection Valve and Sample Loop as part of the Dolomite Bio RNA-Seq system.

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UK Head Office (Europe, S.E. Asia, Australasia, China, Middle East, Africa)
t: +44 (0)1763 252 102
e: info@dolomite-bio.com
w: www.dolomite-bio.com

North America Office
t: 617 848 1211
e: info@dolomite-bio.com

Japan Office
t: 045 263 8211
e: info@dolomite-bio.com

India Office
t: +91 22 2686 4410
e: info@dolomite-bio.com

Brasil Office (Latin America)
t: +55 11 5083 4963
e: info@dolomite-bio.com