

# MICROFLUIDIC CHIP CATALOGUE



Flexible platform for droplet microfluidics research.



Agile platform for droplet analysis and manipulation.

## DROPLET GENERATION CHIPS

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**DG-DM-20** Droplet Size: 20–25 $\mu$ m Droplet Volume: 4–8pL

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**DG-DM-25** Droplet Size: 25–30 $\mu$ m Droplet Volume: 8–14pL

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**DG-DM-35** Droplet Size: 30–40 $\mu$ m Droplet Volume: 14–33pL

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**DG-DM-50** Droplet Size: 40–55 $\mu$ m Droplet Volume: 33–113pL

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**DG-DM-60** Droplet Size: 55–65 $\mu$ m Droplet Volume: 113–144pL

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**DG-CF-20** Droplet Size: 30–40 $\mu$ m Droplet Volume: 14–33pL

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**DG-CF-40** Droplet Size: 60–70 $\mu$ m Droplet Volume: 113–180pL

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**DG-CBC2-80** Droplet Size: 125–180 $\mu$ m Droplet Volume: 1–3.5nL

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**DG-DSQ-1** Droplet Size: 125 $\mu$ m Droplet Volume: 1nL

**Note:**

All chips are compatible with OD = 1.07mm microfluidic tubing.  
Chips compatible with different tubing are available upon request.

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The chip is used for monodisperse w/o (water/oil) droplet generation.

Each device has one inlet for the aqueous phase and one inlet for the oil phase.

Each chip has 6 or more microfluidic devices (depending on the design).

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The chip is used for monodisperse w/o (water/oil) droplet generation using two aqueous phases.

Each device has two inlets for the aqueous phase and one inlet for the oil phase.

Each chip has 6 or more microfluidic devices (depending on the design).

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The chip is used for single-cell transcriptome barcoding experiments. It uses four channels to combine three aqueous phases and an inert oil phase to create a monodisperse emulsion.

Each chip has 6 individual devices.

Ref: 10.1038/nprot.2016.154

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Each chip has 6 individual devices.

Ref: 10.1016/j.cell.2015.05.002

## HIGH-THROUGHPUT DROPLET GENERATION CHIPS

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**DG-HT-50** Droplet Size: 50–55µm Droplet Volume: 65–113pL

The chip is used for ultrahigh-throughput (>30k droplets/s) w/o (water/oil) droplet generation.

Each device has one inlet for aqueous phase and one inlet for oil phase.

Each chip has 5 microfluidic devices.

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## DROPLET MANIPULATION CHIPS

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**DG-SRT-30** Manipulation type: High-voltage electric field

The chip is used to actively select a specific droplet population, based on fluorescence signal.

Each device has one emulsion reinjection inlet and two outlets.

Each chip has 3 microfluidic devices.

Ref: 10.1038/nprot.2013.046

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**DG-MIR-40** Manipulation type: High-voltage electric field

The chip is used to actively merge two different droplet populations.

Different designs are available for various applications.

Each chip has 3 microfluidic devices.

Ref: 10.1021/acs.chemrev.6b00848

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**DG-RAD-30** Manipulation type: High-voltage electric field

The chip is used to actively add reagents into the droplets.

Each device has one emulsion reinjection inlet and one inlet for the additional reagents.

Each chip has 3 microfluidic devices.

Ref: 10.1021/acs.chemrev.6b00848

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**DG-DS-30** Manipulation type: Mechanical

The chip is used to passively split one droplet population into two or more.

Different designs are available for various applications.

Each chip has 6 microfluidic devices.

Ref: 10.1021/acs.chemrev.6b00848

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**Note:**

All chips are compatible with OD = 1.07mm microfluidic tubing.

Chips compatible with different tubing are available upon request.

# CUSTOM MICROFLUIDIC CHIP PROTOTYPING

We are committed to supporting the research needs of our clients and strive to make adopting droplet microfluidics as effortless as possible. We believe that every research project is unique and to help you make even the most complex ideas a reality, we offer custom chip prototyping and manufacturing services. Our chips are made from PDMS elastomer allowing for a fast turnaround time. The engineering costs are paid once and after the custom design is put into our production library all subsequent chips of the same design come at a standard price. All custom client designs are kept strictly confidential.



## TYPICAL PROJECT WORKFLOW

### Microfluidic chip design

A custom microfluidic chip is designed according to the client's needs and specifications by our highly experience engineers.

2-5 Days

### Photolithography templates

The prepared design is used to make a high-resolution photolithography mask, which is then patterned on a silicon wafer by photolithography. The prepared template is inspected and measured to verify the feature quality.

7-10 Days

### Custom chip manufacturing

PDMS elastomer is casted on a photolithography template and the design of microchannels is imprinted on the polymer's surface. The PDMS slab is then bound to a glass slide and the device channels coated to achieve a hydrophobic or a hydrophilic surface. The quality of each chip is manually inspected prior to shipping.

5-6 Days

