

Sunlight Medical

Assisted Reproduction **Microtools**



www.sunlight-medical.com

Sunlight Medical Inc (SLM) manufactures and supplies a complete line of micropipettes for in vitro fertilization (IVF) procedures such as intracytoplasmic sperm injection (ICSI), embryo biopsy, assisted hatching, and other related procedures. We offer **consistency, precision, reliability, convenience, and value.**

Quality Assurance

SLM micropipettes are designed and manufactured under the direct supervision of scientists who are experts in the field of assisted reproduction technology (ART) and micromanipulation. Each micropipette is hand-crafted by highly trained technicians in a controlled environment and is individually examined for quality assurance.

SLM micropipettes are **traceable** to the materials, procedures, and production and QA personnel in preparing each individual pipette for **quality assurance**. This extra step puts pressure on everyone of us for consistent high quality products, but gives you relaxation and confidence for **precision manipulations and desired outcomes.**

Packaging

SLM pipettes are packed in our convenient **color coded** pipette safe cases. The case is designed with a **green** concept by using minimal materials for conservation and minimizing weight and size of the total package in the effort to reduce energy used for transportation. The outer box, including all labels, is made of paper for easy recycling.

“High quality”

“Well made”

“Flexibility of the pipette tip is excellent (doesn’t break easily like other brands)”

“Needle to needle consistency”

“Inspires confidence in those that use them”

“Conforms to desired specification”

We like the shape of the needle, it is very thin and sharp but maintains rigidity. The needles are consistent with very little variation. The packaging is easy to use and so we have no breakages when getting them out. The price is very competitive. Most importantly we have seen an improvement in fertilization rate and a decrease in damage rate.

— An anonymous embryologist from U.K.



Select an ICSI pipette that is best for your need!

Sunlight Medical offers three types of spiked ICSI injection pipettes for our diversified customers. The table below summarizes their differences, characteristics and advantages.

V type



Characteristics:

- Short taper
- Long parallel wall section
- Standard tip to elbow length (0.55 mm)

Advantages:

- Smooth control of sperm injection and cytoplasm suction,
- Less cytoplasm draws back when breaking oocyte membrane,
- Less damage to oocyte,
- Better fertilization and embryo development.
- Multiple sperm can be loaded and injected.

Disadvantages:

- May not be easy in immobilizing sperm for some embryologists who need press down very hard on sperm tail.

H type



Characteristics:

- Longer taper
- Short parallel wall
- Longer tip to elbow length (0.75 mm)

Advantages:

- Multiple sperm can be loaded and injected.
- Smooth control of sperm injection.
- Less damage to oocyte,
- Better fertilization and embryo development.

Disadvantages:

- Sperm may turn around when loading and injecting multiple sperm.

W type



Characteristics:

- Short taper
- No parallel wall
- Long parallel wall section
- Standard tip to elbow length (0.55 mm)

Advantages:

- Strong and Less flexible tip, so easy in immobilizing sperm

Disadvantages:

- May suck lots of cytoplasm, especially for people who are not familiar with this type of pipette.
- Sperm may turn around when loading and injecting multiple sperm.

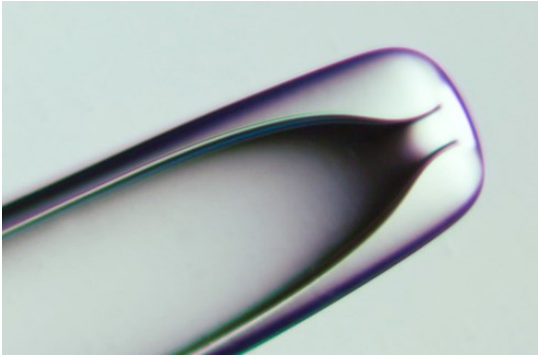
ICSI Injection Pipettes

- SLM ICSI Injection Pipettes are used to perform intracytoplasmic sperm injection (ICSI).
- SLM offers three types of spiked and two types of non-spiked ICSI Injection Pipettes. See page 3 for details.
- SLM offers three sizes of ICSI injection pipette.
- All our injection pipettes are supplied with an angle of 0° - 45° and a tip to elbow length of 0.55 mm and 1.0 mm.



| Catalogue Number | Size | Tip Style | Tip to Elbow Length | Tip Angle degree |
|--|--|----------------|------------------------------|--|
| SIC-45V-xx SIC-45V-xxL SIC-45W-xx SIC-45W-xxL SIC-45H-xx | ID: 4.0-4.5 μm OD: 5-6 μm | Spiked tip | xx – 0.55 mm xxL – 1.0 mm | xx – 0° , 5° , 10° , 15° , 20° , 25° , 30° , 35° , 40° , 45° |
| SIC-45T-xx SIC-45T-xxL SIC-45N-xx SIC-45N-xxL | ID: 4.0-4.5 μm OD: 5-6 μm | Non spiked tip | xx – 0.55 mm xxL – 1.0 mm | xx – 0° , 5° , 10° , 15° , 20° , 25° , 30° , 35° , 40° , 45° |
| SIC-50V-xx SIC-50V-xxL SIC-50W-xx SIC-50W-xxL SIC-50H-xx | ID: 4.5-5.0 μm OD: 6-7 μm | Spiked tip | xx – 0.55 mm xxL – 1.0 mm | xx – 0° , 5° , 10° , 15° , 20° , 25° , 30° , 35° , 40° , 45° |
| SIC-55V-xx SIC-55V-xxL SIC-55W-xx SIC-55W-xxL SIC-55H-xx | ID: 5.0-5.5 μm OD: 6-7 μm | Spiked tip | xx – 0.55 mm xxL – 1.0 mm | xx – 0° , 5° , 10° , 15° , 20° , 25° , 30° , 35° , 40° , 45° |

Holding Pipettes



- SLM Holding Pipettes are used to hold an oocyte or embryo in position during ICSI and other micromanipulation procedures.
- There are three series and six sizes for selection. The classic series has an ID 15-20 μm and OD in 90 μm , 100 μm , 120 μm , 130 μm and 150 μm . The 'S' series has smaller ID (10-15 μm). The 'B' series has an ID 25-30 μm and OD in 120 μm , 130 μm , 150 and 180 μm . The 'B' series may be used for holding an oocyte with cumulus cells attached and for embryo biopsy.
- All our holding pipettes are supplied with a tip angle of 0° - 45° and a tip to elbow length of 0.65 mm.
- Packed in a box of 10.

| Catalogue Number | Outer Diameter μm | Inner Diameter μm | Tip Angle degree |
|------------------|------------------------------|------------------------------|--|
| SHP-70S-xx | 70 | 10-15 | xx – 0° , 5° , 10° , 15° , 20° , 25° , 30° , 35° , 40° , 45° |
| SHP-90-xx | 90 | 15-20 | |
| SHP-100-xx | 100 | 15-20 | |
| SHP-120-xx | 120 | 15-20 | |
| SHP-120B-xx | 120 | 25-30 | |
| SHP-130-xx | 130 | 15-20 | |
| SHP-130B-xx | 130 | 25-30 | |
| SHP-150-xx | 150 | 15-20 | |
| SHP-150B-xx | 150 | 25-30 | |
| SHP-180B-xx | 180 | 25-30 | |

Zona Drilling Pipettes



- SLM Zona Drilling Pipettes are used to apply acidic solution for creating a hole on the zona pellucida to enable assisted hatching and/or embryo biopsy.
- There are two sizes available for selection: ID 8-10 μm and ID 10-12 μm . These pipettes are designed with a slightly fire-polished tip.
- They are supplied with 0° - 45° tip angle and a tip to elbow length of 0.55 mm.

| Catalogue Number | Inner Diameter μm | Tip Style | Tip Angle degree |
|------------------|------------------------------|-----------|---|
| SZD-10-xx | 8-10 | Flat | xx – 0° , 5° , 10° , 15° , 20° , 25° , 30° , |
| SZD-12-xx | 10-12 | Flat | 35° , 40° , 45° |

Polar Body Biopsy Pipettes

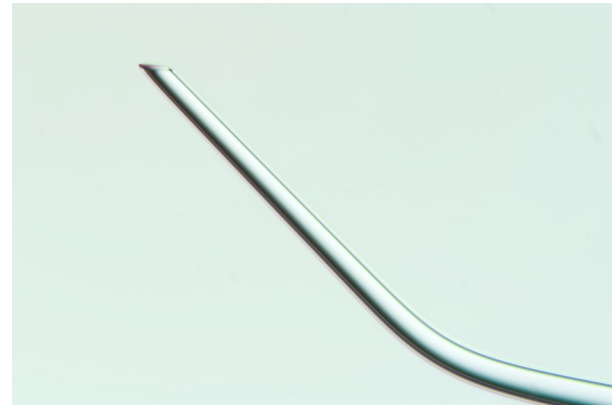


- SLM Polar Body Biopsy Pipettes are used to remove polar bodies from human oocytes and embryos for pre-implantation genetic diagnosis (PGD).
- There are three series of pipettes available for selection: 15Z (flat tip), 15X (beveled tip) and 15S (spiked tip).
- All these pipettes are designed with a fire polished edge to avoid damage to the cell membrane.
- They are supplied with a tip angle of 0° - 45° and a tip to elbow length of 0.55 mm.

| Catalogue Number | Inner Diameter μm | Tip Style | Tip Angle degree |
|------------------|------------------------------|--------------------|---|
| SPB-15Z-xx | 13-15 | Flat | xx – 0° , 5° , 10° , 15° , 20° , |
| SPB-15X-xx | 13-15 | Beveled | 25° , 30° , 35° , 40° , |
| SPB-15S-xx | 13-15 | Beveled and Spiked | 45° |

Blastomere Biopsy Pipettes

- SLM Blastomere Biopsy Pipettes are used to remove blastomeres and trophectoderm cells from embryos for pre-implantation genetic diagnosis (PGD).
- There are five sizes and two series available for selection. The 'Z' series is flat tip while the 'X' series is beveled tip. Both styles are supplied with an ID in 20 μm , 25 μm , 30 μm , 35 μm , and 40 μm . Size 20 μm and 25 μm are recommended for trophectoderm (TE) biopsy.
- There is no shrinkage at the bending section, so less likely to damage blastomere in case it is sucked through.
- All tips are fire polished to reduce damage to the cell membrane.
- They are supplied with a tip angle of 0^o - 45^o and a tip to elbow length of 0.55 mm.



For trophectoderm (TE) biopsy use
ID 20 μm and 25 μm pipettes.

| Catalogue Number | Tip Style | Inner Diameter μm | Tip Angle degree |
|------------------|-----------|------------------------------|--|
| SBB-20Z-xx | Flat | 20 \pm 0.2 | xx – 0 ^o , 5 ^o , 10 ^o , 15 ^o , 20 ^o , 25 ^o , 30 ^o , 35 ^o , 40 ^o , 45 ^o |
| SBB-25Z-xx | Flat | 25 \pm 0.2 | |
| SBB-30Z-xx | Flat | 30 \pm 0.2 | |
| SBB-35Z-xx | Flat | 35 \pm 0.2 | |
| SBB-40Z-xx | Flat | 40 \pm 0.2 | |
| SBB-20X-xx | Beveled | 20 \pm 0.2 | xx – 0 ^o , 5 ^o , 10 ^o , 15 ^o , 20 ^o , 25 ^o , 30 ^o , 35 ^o , 40 ^o , 45 ^o |
| SBB-25X-xx | Beveled | 25 \pm 0.2 | |
| SBB-30X-xx | Beveled | 30 \pm 0.2 | |
| SBB-35X-xx | Beveled | 35 \pm 0.2 | |
| SBB-40X-xx | Beveled | 40 \pm 0.2 | |

PZD Pipettes



- SLM PZD Pipettes are used to cut an opening on the zona pellucida of an oocyte mechanically to enable assisted hatching and/or embryo biopsy.
- The pipette is designed with a very sharp tip and a strong taper section for easy control and precision manipulation.
- They are supplied with a 0° - 45° tip angle and a tip to elbow length 0.55 mm.

| Catalogue Number | Description | Tip Angle degree |
|------------------|-----------------|------------------|
| SPD-30 | Solid Sharp Tip | 30 |

Instructions for Use:

- To open the case, hold the case as shown in Figure 1. Make sure that the “Sunlight” mark is up facing your right hand.
- Using your left index finger and thumb press the case on both sides marked “IIIII” then using your right index finger and thumb pull the top cover as shown in

Figure 2.

- Hold firmly the pipette in the middle and gently pull it out from the base as shown in Figure 3.



Caution: Consult accompanying document • Do not reuse • Sterilized using irradiation • Do not use if package is damaged • Store dry at room temperature • Keep away from Sunray



Figure 1



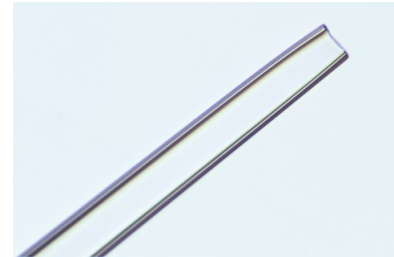
Figure 2



Figure 3

- SLM Denuding pipettes are used with SLM 3-in-One Pipette Controller for denudation, and gametes and embryo transfer.
- The pipettes are made of borosilicate glass which is known for its stability, and is resistant to corrosion and remains absolutely neutral, even to aggressive chemicals in nearly all fields of chemistry.
- The glass pipette has better wetting feature comparing to plastic one, and is less likely to have oil drops attached inside which can sometimes damage an oocyte and embryo.
- Unpolished pipettes are used to remove cumulus cells attached to the zona prior to micromanipulation procedures and fertilization assessment.

Denuding Pipettes



- Polished pipettes are used to transfer blastomere (during PGS), oocytes and embryos from one dish to another during other assisted reproduction procedures.

| Catalogue Number | Inner Diameter μm | Tip Style | Catalogue Number | Inner Diameter μm | Tip Style |
|------------------|------------------------------|------------|------------------|------------------------------|-----------|
| SDP-120 | 120-124 | Unpolished | SDP-70P | 65-74 | Polished |
| SDP-125 | 125-129 | Unpolished | SDP-80P | 75-84 | Polished |
| SDP-130 | 130-134 | Unpolished | SDP-90P | 85-99 | Polished |
| SDP-140 | 135-144 | Unpolished | SDP-100P | 100-119 | Polished |
| SDP-150 | 145-154 | Unpolished | SDP-120P | 120-139 | Polished |
| SDP-160 | 155-164 | Unpolished | SDP-140P | 140-159 | Polished |
| SDP-170 | 165-174 | Unpolished | SDP-160P | 160-189 | Polished |
| SDP-180 | 175-184 | Unpolished | SDP-190P | 190-219 | Polished |
| | | | SDP-220P | 220-249 | Polished |
| | | | SDP-250P | 250-289 | Polished |
| | | | SDP-290P | 290-319 | Polished |
| | | | SDP-320P | 320-360 | Polished |

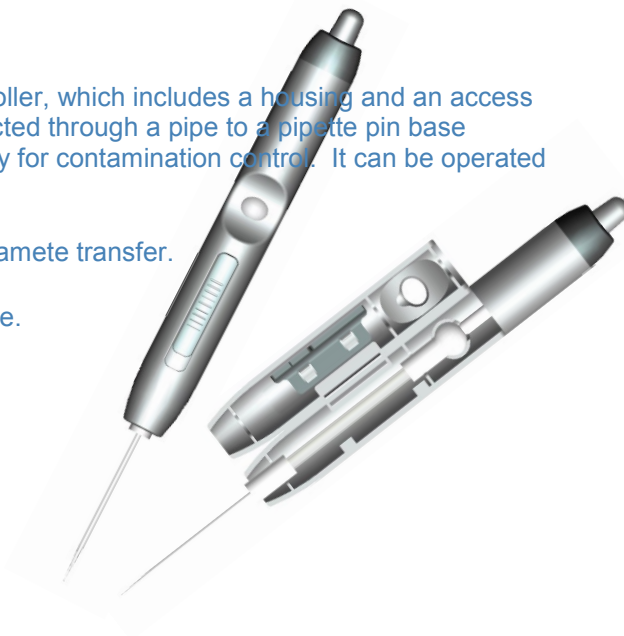
Pipette Controllers

SLM 3-in-One Pipettor is a multi-actuated micro-pipette controller, which includes a housing and an access door, a ballonet seated at the housing. The ballonet is connected through a pipe to a pipette pin base (ballonet assembly). The ballonet assembly can be replaced easily for contamination control. It can be operated in three ways:

- Pressing on the top cap for denudation of cumulus cells and gamete transfer.
- Press on the ballonet directly for denudation and transfer.
- Take the ballonet assembly out and use it like a Pasteur pipette.

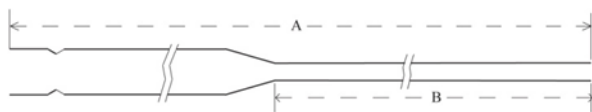
Note: This product is for research use only.

Sunlight Medical
3 in One PIPETTOR
 Patent pending

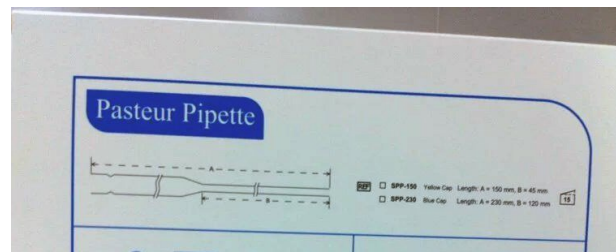


Pasteur Pipettes

SLM Pasteur pipettes are designed and manufactured with the best quality glass for critical laboratory procedures. They are packed individually for the best protection of the pipettes. Their quality has been batch tested for LAL and MEA.



| Catalogue Number | Description | Package Size |
|------------------|--------------------------------|--------------|
| SPP-150 | Length: A = 150 mm, B = 45 mm | 15 or 30 |
| SPP-230 | Length: A = 230 mm, B = 120 mm | 15 or 30 |



iVitri[®]-Straw

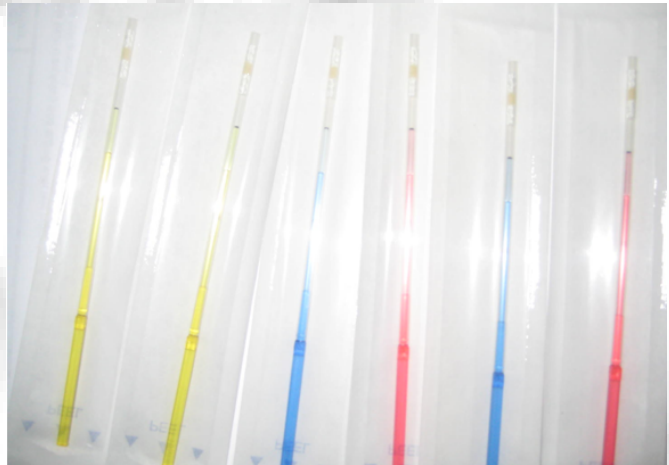
iVitri[®]-Straw is US patent and registered product (USPTO), specifically designed for vitrification, which can be used for freezing oocyte and embryos.

The device tip is made of special material and in a curved shape for keeping gametes and embryo in a defined droplet to reduce alteration of osmolarity which may seriously impact on the survive rate of oocyte and embryos after warming.

This product is for research use only.

Reference:

1. Human Reproduction Vol.22. No.7 pp. 1959-1972, 2007
2. Proc Natl Acad Sci U S A 107(10): 4596-4600



SperMagic[®] Medium

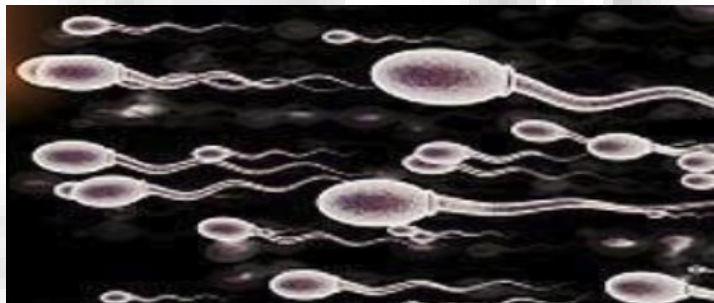
- Improving sperm function like magic.

1. SperMagic[®] can enhance Ca²⁺ influx via membrane Ca²⁺ channel, consequently increase dynamic movement of micro-tubules through signal transduction system, and finally promotes sperm motility.
2. SperMagic[®] could bind sperm membrane receptor and then stimulate receptor-linked signal transduction system, and increase Ca²⁺ influx, consequently promote sperm capacitation and hyper-activation.
3. SperMagic[®] can produce more ATP energy via increasing mitochondria metabolism, and further provide enough ATP for sperm movement.

Note: This product is for research use only.

References:

1. Biology of Reproduction, Special Issue, P229-230, 2005
2. Theriogenology, Suppl. 2008, P36.
3. Reproduction, fertility & development, 2006; 18(1, 2):259.
4. Biology of Reproduction, 2008 SEP 15; 112(6): 182-182.



How to order?

Please contact your local distributor when placing your order. If a distributor is not available in your region, orders can be placed by email: slm@sunlightmedical.net, fax: (904) 363 0958, or online at www.sunlight-medical.com.

We would be happy to send you samples for evaluation.

Visit us at

www.sunlight-medical.com

Distributor



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