LUER CONNECTORS
LUC-1

INSTRUCTIONS FOR USE

PRODUCT DESCRIPTION

LUC-1 Luer Connectors are sterile, single-use connectors that bridge the AIM chips to luer fittings such as syringes and tubing adaptors thus enabling modular expansion in the AIM chips. This product comes with AIM Inlet Seals that can prevent the leakage of media from gel inlets when flow is applied in the AIM chips.

Nomenclature:

a : nub

b : connector

COMPATIBLE PRODUCT

Product Name	Product Code
3D Cell Culture Chip	DAX-1

STERILIZATION

LUC-1 Luer Connectors are supplied in a clear doubly-sealed package and sterilised by gamma beam irradiation. The connectors are sterile if the packaging is not damaged.

SHIPPING AND STORAGE

LUC-1 Luer Connectors are shipped together with **AIM Inlet Seals** at room temperature. Store in a dry environment at room temperature.

PRECAUTIONS AND WARNINGS

The LUC-1 Luer Connectors are for **single use** only. Do not reuse. Do not re-sterilize. May cause leakage if reused or re-sterilized.

Always use **aseptic technique** while handling the connectors. Do not use if packaging is damaged.

Not compatible with aromatic hydrocarbons (such as benzene).

END USER LICENSE AGREEMENT

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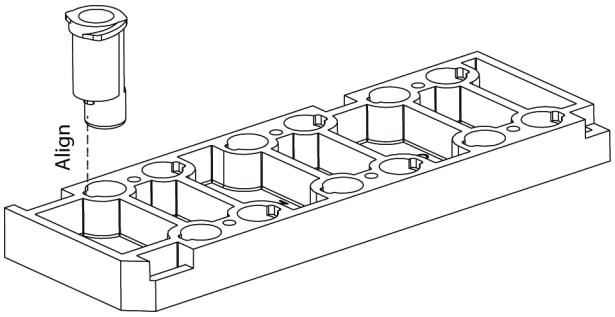
PROTOCOL OVERVIEW

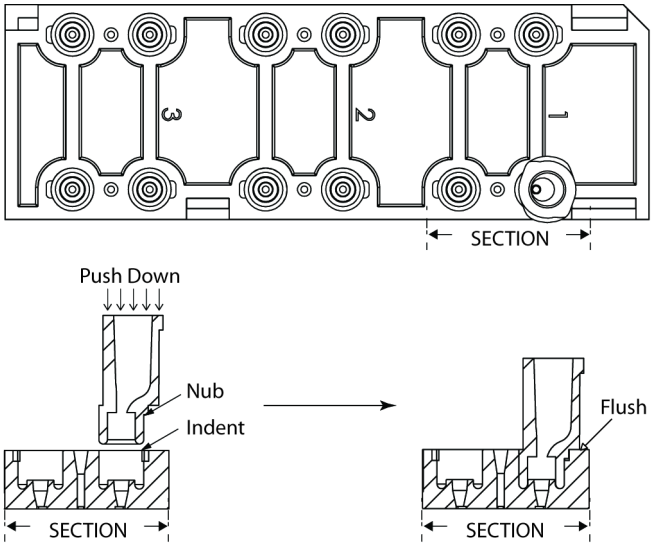
Assembling Connectors ⏱ TIMING 10 min

1. Perform the following steps in a laminar flow hood.

2. Fit connectors into all four media inlets by aligning the nub of the connectors to the corresponding indent at the ports.



3. Press connectors down into AIM chips to make sure the contact areas between the connectors and the AIM chips are flush.



Preparing & Filling Collagen Gel ⏱ TIMING 50 min

4. Prepare collagen gel according to the pre-determined collagen gel recipe. You may use any hydrogel relevant to your specific application.

5. Fill 10 µl of collagen solution from either one of the gel inlets and stop near the end of posts. Fill from the other gel inlet until the gel fronts merge.

6. Seal the gel inlets immediately with **AIM Inlet Seals** by using tweezers.

7. Place the gel-filled chips into a 37 °C incubator and incubate for 30 min.

Hydrating & Coating Media Channels ⏱ TIMING 70 min

8. After incubation, gently inject 15 µl of coating solution into the channel that requires coating. Repeat this step for the other channel. Use culture medium instead if coating is not required.

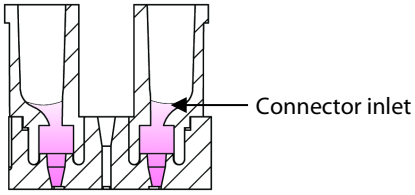
9. Incubate for 1 h or for the optimized time of other coating solutions in a 37 °C incubator.

10. Add 100 µl of medium into one connector to flush out the coating solution from the opposite connector.

Seeding Cells ⏱ TIMING 40 min

11. Prepare cell suspensions with densities ranging from 0.5 to 3 M cells/ml, depending on the applications.

12. Remove medium from all connectors by using a micropipette until the medium levels are the same as or slightly above the connector inlets. Do not apply negative pressure directly at the connector inlets to prevent the medium in the media channels from being removed.



The medium levels should be the same as or slightly above the level of connector inlet

13. Add 20 µl of cell suspension into one connector. Wait for 2 min and then repeat the same procedure for the opposite connector that is attached to the same media channel.

14. Visual inspection under a microscope is recommended. If the cell distribution is not optimal for your application, adjust the density of the cell suspension and repeat the seeding steps.

15. If another cell type B is to be seeded in the opposite media channel, incubate the chips for at least 30 min after cell type A has been seeded to allow proper attachment of cell type A on the substrates.

16. Keep the chips in an incubator.

Changing Medium ⏱ TIMING 10 min

17. (Optional) Change medium 2 to 4 h (or longer for less adhesive cell types) after the cells have been seeded.

18. Remove medium from all connectors. Add 100 µl of fresh medium into one connector to flush out the old medium from the opposite connector. Repeat this for the other channel.

Applying Flow

19. **Option 1**: Attach auxiliary reservoirs to the connectors to generate pressure differences between media channels. We recommend using 1ml luer slip syringe barrels as auxiliary reservoirs.

20. **Option 2**: Attach auxiliary luer adaptors and tubing that are connected to syringe pumps to the connectors to control the pressure difference between/within media channels more precisely. We recommend using male luer lock adaptors with 1/16" ID low profile barb and biocompatible tubing. Tubing with sizes ranging from 1/16" (for incompressible tubing) to 1/32" ID (for compressible tubing) may be used. The corresponding needle sizes are 15 and 18 gauge respectively and we recommend using blunt end needles.

Please refer to www.aimbiotech.com/protocols for a detailed explanation of the connector-related and application-specific protocols.