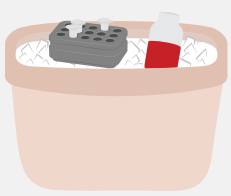
Tips and Tricks

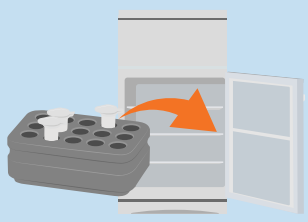
Working with Corning® Matrigel® Matrix Aliquots for Organoid Culture

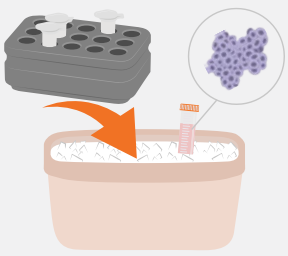
Aliquot from a Matrigel matrix vial.



1. Using autoclaved Corning Costar 1.7 mL low binding microcentrifuge tubes will prevent the Corning Matrigel matrix from sticking.
2. Thaw Matrigel matrix overnight in a bucket of ice in the back side of the fridge (2˚C to 8˚C).
3. Pre-chill all pipet tips/labware that you plan to place in contact with Matrigel matrix.
4. Place sterile microcentrifuge tubes and thawed Matrigel matrix on ice using a Corning CoolRack for the microcentrifuge tubes. Be sure to use tubes made of polypropylene or other compatible tubes that can withstand cold temperatures.
5. Using pre-chilled pipet tips, transfer Matrigel matrix to microcentrifuge tubes using desired aliquot volumes, taking care to not introduce air bubbles. Choose volumes that allow for one time use post-thaw.
6. Label Matrigel matrix aliquots with key information (e.g., catalog number, lot number and/or protein concentration, and date) and transfer aliquots to a -70˚C or -20˚C freezer until ready for use.

Thaw an aliquot of Matrigel matrix using a pre-chilled Corning CoolRack M6 module in the back side of the fridge.



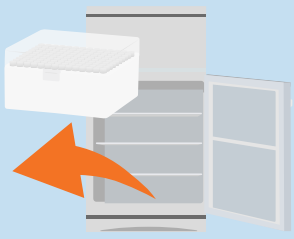


Transfer the CoolRack to a Corning ice pan with ice. Place in a cell culture hood.

- Place cell suspension in a centrifuge tube in the CoolRack module.

Retrieve pre-chilled pipet tips from the fridge.

- Use the 200 µL Axygen Maxymum Recovery universal fit pipet tip to prevent the Matrigel matrix and cells from sticking.
- When working with several samples, keep your tip box in the Corning ice bucket to ensure consistent temperatures.



Utilize the 20-200 µL Corning Lambda Plus single-channel pipettor with the pre-chilled tips to mix the Matrigel matrix with the cells.

- Skip this step if working in 2D cell culture.

Dispense Matrigel matrix or Matrigel matrix-cell mixture into a cell culture plate such as the Falcon 96-well clear flat bottom TC-treated microplate.

- When working in 2D cell culture, pre-chill the plate and be sure to only dispense the Matrigel matrix. Use only enough to coat the cell growth area of the well.

Dome or Sandwich method

Dome Method

After mixing Matrigel matrix with cells:

1. Using pre-chilled pipet tips, transfer small volumes of Matrigel matrix-cell mixture as droplets onto a surface, such as a TC-treated polystyrene 24-well plate.

NOTE: To help limit spreading of Matrigel matrix droplets on the surface, you can also use a non-treated plate depending on the length of culture and frequency of media exchanges. Alternatively, incubating a TC-treated plate in a 37˚C incubator for at least 24 hours prior to use has been found to result in taller domes that polymerize more quickly.

2. Incubate the plate upside down for 5 minutes in a humidified 37˚C, 5% CO_2 incubator. After the quick incubation, flip the plate again and incubate it right position for 15-20 minutes to allow the Matrigel matrix to polymerize.
3. Add culture medium and incubate.

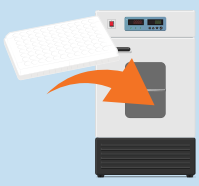
Sandwich Method

After the polymerization of Matrigel matrix:

1. Using pre-chilled pipet tips while keeping Matrigel matrix aliquot on ice, transfer the desired volume of Matrigel matrix to your cell seeding suspension in culture media (e.g., 10% final Matrigel concentration).

NOTE: You do not need to keep the dilute Matrigel-cell mixture cold.

2. Add cells in dilute Matrigel matrix on top of Matrigel matrix beds and incubate.



Transfer the cell culture plate to the incubator for the Matrigel matrix to polymerize.

Add the cell culture media – without cells for 3D, with cells for 2D – and incubate.

Learn more about Corning Matrigel matrix

Learn more about our sample cooling and heating products

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