MED64 PRESTO

MEA Plate Steralization

1. Rinse a new MEA plate with sterilized distilled water (SDW) at least three times. Rinse it with 70% ethanol several times (or immerse it in 70% ethanol for <15 minute), and then let it dry naturally on a clean bench. Higher-grade ethanol is recommended to avoid deposits of organic substances onto the MEA plate after drying.

2. Rinse the MEA plate with SDW at least three times, and then let it dry under ultraviolet irradiation for 15-30 min. Store and handle the MEA Plate in a sterilized manner.

- **Do NOT autoclave.**

Pre-coating MEA Plate (Cardiomyocyte)

1. Add Fibronectin (50 μg/ml) or Matrigel (200 μg/ml) into each well in the MEA plate.

2. Incubate at 37°C for 1 h (Matrigel®) or at 4°C overnight (fibronectin).

MEA Plate Types	MEA24 well Plate		
	Comfort MED-2430L	Eco MED-2430M	Sakura MED-2430S
Fibronectin / Matrigel (μL)	500 (5)	250 (5)	50 (5)

- The volumes listed above will **coat the entire bottom** of a well. ( ) show volumes to cover recording electrodes

3. Aspire the coating solution and plate carciomycoyte before electrodes dried.

- Coating with 0.005% PEI before Fibronectin/Matrigel coating may be recommended depending on type of your cells or/and experiments (Refer to the next page for the PEI coating).

Do NOT touch the electrodes

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Pre-coating MEA Plate (Neuron Cultures)

PEI-Laminin method

1. Make 25 mM borate buffer, as follows:
   - Dissolve 4.768 g $Na_2B_4O_7 \cdot 10\ H_2O$ in 450 ml distilled water.
   - Adjust pH to 8.4 with HCl.
   - Add distilled water to final volume of 500 ml.

2. Dilute PEI to a 1% stock solution in distilled water.

3. Dilute PEI again to 0.005% in borate buffer.

4. Add the 0.005% PEI solution into each well, and leave it for 10 min.
   - You might need to change the concentration of PEI and its time depending on your type of cells and experiments.

5. Aspirate PEI solution (avoid touching electrodes) and rinse the MEA plate 4x (or more) with distilled water.

6. Add Laminin (iMatrix511) into each well and incubate for one hour at 37 degree/CO_2 5%.

7. If there are bubbles on the electrodes, carefully remove them using a pipette. Plate neurons to center of the MED Probe before electrodes dry.

PDL-Laminin method

1. Add Poly-D-Lysine into each well in the MEA plate and incubate for one hour at 37 degree/CO_2 5%.

2. Aspire the Poly-D-Lysine. Dry the MEA Plate in a clean bench (for around one hour).

3. Dilute Laminin (iMatrix511) x200 with PBS (to 2.5 μg /ml).

4. Add Laminin into each well in the MEA plate and incubate for one hour at 37 degree/CO_2 5%.

5. If there are bubbles on the electrodes, carefully remove them using a pipette. Plate neurons to center of the MED Probe before electrodes dry.

Volumes

MEA Plate Types	MEA24 well Plate		
	Comfort MED-2430L	Eco MED-2430M	Sakura MED-2430S
PEI (0.005%) or Poly D Lysine (μL)	500	250	50
Laminin (μL)	400 (5)	200 (5)	40 (5)

- The volumes listed above will **coat the entire bottom** of a well. ( ) show volumes to cover recording electrodes only.

Do NOT touch the electrodes