

Coat with polydopamine to enhance cell adhesion

This protocol describes coating of polydopamine to non-treated polystyrene dishes or MultiDish 2x2. Polydopamine can significantly improve attachment for a range of semi-adherent cells during LigandTracer measurements compared to attachment to regular cell culture dishes.

Important Information

The polydopamine effect on attachment is cell line dependent. It is possible that a ligand binds non-specifically to polydopamine-coatings, although this has never been observed by Ridgeview Instruments AB. To investigate this, you can coat with polydopamine in the cell free reference area(s) as well.

Materials

- Dish, 87-89 mm (diameter) and about 15 mm (height), e.g. LigandTracer MultiDish 2x2 *for coatings** (Cat. No. 1-4-204, Ridgeview Instruments AB) or non-treated polystyrene Nunc Petri Dish (Cat. No. 263991, Thermo Fisher Scientific)
- Dopamine (Cat. No. H8502, Sigma-Aldrich)
- 10 mM Tris buffer pH 8
- Milli-Q water (MQ)

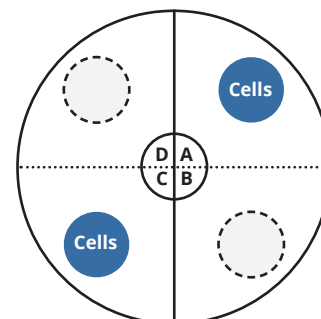
Procedure

- Mix dopamine with 10 mM Tris buffer pH 8 to a concentration of 2 mg/ml. The solution should be added to the dishes within one hour.
- Add the dopamine solution. Recommended volumes are 600 µl and 500 µl per area for a MultiDish 2x2 and a regular Petri dish, respectively. You can use a coating template to correct positioning of the drops. The number of drops depends on purpose and dish choice. In the examples on the right the blue circles are cells attached to coated polydopamine (target areas) and the grey circles are polydopamine coatings without cells (reference areas). Coating of the reference area(s) can be omitted once it has been confirmed that no non-specific binding is taking place.
- Incubate for 3 h at room temperature without the lid on.
- Remove the dopamine solution by carefully rocking the dish, tilting it and aspirate near the rim of the dish. Wash twice with MQ. Avoid extensive touching of the coated area with the pipette tip. Try to remove any clear signs of black powder with the pipette. Aim at getting the dish *for coatings* as liquid-free as possible, especially between the spot and the rim of the dish. A darker color at the coated spot compared to the non-treated plastic surface is expected after the washes.
Note that dopamine is classified as Hazardous to the aquatic environment. Dispose of excess solution according to national or local regulations or laws.
- Store the dishes at room temperature or +4°C.

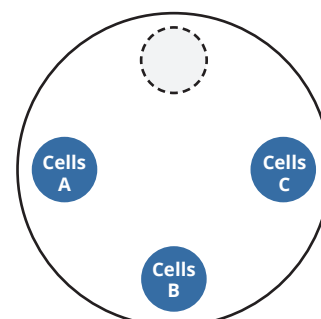
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* LigandTracer MultiDish 2x2 is only compatible with LigandTracer Green Second generation (serial numbers RCF-041XXX) or older LigandTracer Green instruments that have been upgraded.

MultiDish 2x2



Regular dish



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