

Can the Electrodes be Coated with Proteins?

Yes, the wells can be coated with proteins, and this is quite common. Our suggested protocol is to make a solution of the protein at 200 micrograms per ml in 0.15M NaCl. The use of phosphate buffer can seriously interfere with the adsorption of some proteins and should be avoided. If a buffer is essential, a mild Tris solution (e.g. 0.01M) is OK.

To coat the electrode, simply place a small amount of the protein solution in the bottom of the well and allow it to remain in place for 10 minutes or more. If the protein is valuable, with the 8W1E arrays, it is only necessary to coat the small active electrode (250 micrometer diameter), and as little as 10 microliters or less can be carefully applied to this very small spot at the bottom of each well.

Once the adsorption has taken place, an approximate monomolecular layer of the protein will be coating the surface and will not be removed by rinsing. If desired you can rinse the protein solution from the well with sterile medium, PBS, saline or water. Medium can now be added and inoculation begun. The effect of adsorbed proteins sometimes produces dramatic changes in the dynamics of cell attachment and spreading.

If the protein is in plentiful supply, e.g. gelatin, solutions of 1 mg/ml can of course be used, but again avoid phosphate buffers and rinse the wells before inoculation. In either case, we do not recommend drying the protein solutions in place as it can foul or damage the electrodes.

