

# Corning® Cell-Tak™ Cell and Tissue Adhesive

## Frequently Asked Questions

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**Q: What is Corning Cell-Tak adhesive?**

A: Cell-Tak adhesive is composed of “polyphenolic proteins” extracted from the marine mussel, *Mytilus edulis*. This family of related proteins is the key component of the glue secreted by the mussel to anchor itself to solid structures in its natural environment.

**Q: For what applications can Cell-Tak adhesive be used?**

A: Cell-Tak adhesive is a specially formulated protein solution designed to be used as a coating on a substrate to immobilize cells or tissue. The adhesive can be used for any application where a strong adherence is required, such as patch clamping, transfection, and ELISAs, as well as studies of yeast, bacteria, and other microorganisms. It can simplify the manipulation of biological samples in a number of common *in vitro* techniques, including establishment of primary cultures, *in situ* hybridization, immunoassays, microinjection, and immunohistochemistry.

**Q: Can Cell-Tak adhesive be used with all kinds of suspension cells?**

A: Cell-Tak adhesive acts like a glue. Customers should experiment with the cell line of interest.

**Q: In what is the protein formulation stored?**

A: The protein formulation is stored in 5% acetic acid.

**Q: What is the coating method for Cell-Tak adhesive?**

A: There are primarily two methods for coating a surface with Cell-Tak adhesive: hand-spreading and adsorption. In general, adsorption is the more consistent and convenient method, but hand-spreading may be useful in special situations, such as coating a portion of a dish or glass slide.

**Q: What is the recommended coating concentration of Cell-Tak?**

A: The suggested range is 1 to 5  $\mu\text{g}/\text{cm}^2$ . However, 3.5  $\mu\text{g}/\text{cm}^2$  is the most commonly used concentration. The optimal density of Cell-Tak adhesive depends on your specific application or cell type. A preliminary dose-response experiment is recommended to determine the optimal density.

**Q. Does Cell-Tak adhesive have to be diluted in 5% acetic acid?**

A: When Cell-Tak adhesive is stored, as recommended, in 5% acetic acid at 2 to 8°C, the stock solution should be diluted only when it will be used. If it is diluted in water, it should be used the same day; if it is diluted in a neutral buffer, it should be used immediately.

**Q: What is the optimal pH range for coating Cell-Tak adhesive by the absorption method?**

A: If the pH in the coating buffer is not between 6.5 to 8.0, Cell-Tak adhesive will not perform optimally.

**Q. In the Cell-Tak manual, there is a step in the hand-spreading protocol for rinsing with ethanol. Do you have any recommendations as to what percentage of ethanol?**

A: 70% ethanol should be sufficient.

**Q: What surface could be used for coating Cell-Tak adhesive?**

A: Cell-Tak adhesive will readily coat a variety of materials, including glass, plastics, and even metals.

**Q: How long is Corning® Cell-Tak™ coating stable?**

A: Cultureware coated with Cell-Tak adhesive are stable for 10 to 14 days at 2 to 8°C after coating or 4 weeks after coating at 2 to 8°C with a desiccant.

**Q: Why do I see poor cell attachment with Cell-Tak adhesive?**

A: The presence of serum may cause poor cell attachment. To increase cell attachment kinetics, try seeding cells in serum-free medium. Also, try reducing the volume of cell suspension. You can seed the cells in serum-containing medium, but do not preincubate the medium in vessels coated with Cell-Tak before adding the cells. Serum proteins can block the adhesive sites. Change to serum-containing medium immediately after cells attach.

**Q: Does Cell-Tak adhesive produce much background when staining with fluorescent antibodies?**

A: Cell-Tak adhesive is a natural protein that contains DOPA in its sequence. As with all other proteins, Cell-Tak protein will have excitation and emission due to aromatic amino acids outside of the visible spectrum, so it may not interfere with normal assays that use higher wavelengths. However, some oxidized species and phenolate anions of DOPA may emit at the lower visible range (~320 nm). If possible, prepare a blank using just Cell-Tak adhesive and design the experiment accordingly.

**Q: What is the fluorescence spectra of Cell-Tak adhesive?**

A: The excitation is 250 to 300 (maximum 280) and the emission is 300 to 400 (maximum 325).

**Q: How do I recover my cells cultured on Cell-Tak adhesive?**

A: You can recover cells cultured on Cell-Tak adhesive using trypsin. Corning recommends that you determine the optimal conditions for your particular application.

**Q: How should I fix my cells attached to Cell-Tak adhesive?**

A: You can use ethanol or methanol to fix cells. In addition, there should be no dissociation with formalin fixation.

**Q: How can I clean glass slides or coverslips for optimum coating of Cell-Tak adhesive?**

A: Clean the slides or coverslips with 95% alcohol, wash with water, air dry or clean with concentrated nitric acid, wash with copious amounts of water, and then air dry.

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