Collagen I-Cell Culture Surface Coating Kit
Cat. No. 8188

Introduction

Type I collagen, a fibrous protein abundant in connective tissues including tendon, ligament, dermis and blood vessel, is the major component and the primary determinant of tensile strength of the extracelluar matrix (ECM). It is widely used as a thin layer on tissue-culture surfaces to enhance the attachment and proliferation of a variety of cells including endothelial cells, fibroblasts, hepatocytes, epithelial cells and etc. In addition, collagen I can self-assemble into a 3-D superamolecular gel *in vitro*, making it an ideal biological scaffold to promote more *in vivo*-like cellular morphology and function.

The ScienCell™ collagen I-Cell Culture Surface Coating Kit includes collagen I purified from rat tail tendon by a modification of the method of Bell *et al*[1] and supplied as a sterile liquid in 1/1000 acetic acid. The kit also includes a 100× collagen I solvent, which can be used to dilute collagen I into appropriate concentration for the coating of cell culture vessels.

Kit Components

Cat. No.	# of vials	Reagent	Quantity	Storage
8188a	1	Collagen I from rat tail, 1 mg/ml	10 ml	2-8°C
8188b	1	Collagen I Solvent, 100×	2 ml	RT

Quality Control

The ScienCell™ collagen I-Cell Culture Surface Coating kit is tested for the promotion of adherence of human dermal fibroblasts (Figure 1) and tested and found negative for bacterial contamination.

Cell Culture Surface Coating Procedures

1. Dilute 2 ml of 100× Collagen I Solvent with 198 ml of DI H_2O, store at 2-8°C as the 1× Collagen I Solvent, keep sterile.
2. Dilute appropriate volume of 1 mg/ml collagen I 20 times with the 1× Collagen I Solvent to give a final concentration of 50 µg/ml.
3. Add 100 µl of 50 µg/ml collagen I per 1 cm^2 surface area to be coated, which corresponds to 5 µg /cm^2. Further dilution to as low as 0.5 µg/cm^2 may be desirable depending on cell type and application.
4. Incubate for at least 30 minutes at 37˚C.
5. Aspirate the collagen I solution and rinse three times with PBS or culture medium.
6. The collagen I coated culture vessel can be used immediately or after air dry for about 60 minutes in a laminar flow hood.

References

1. Bell, E., Ivarsson B. and Merrill C., *Proc. Natl. Acad. Sci. USA*, 76(3), 1274-1278 (1979).

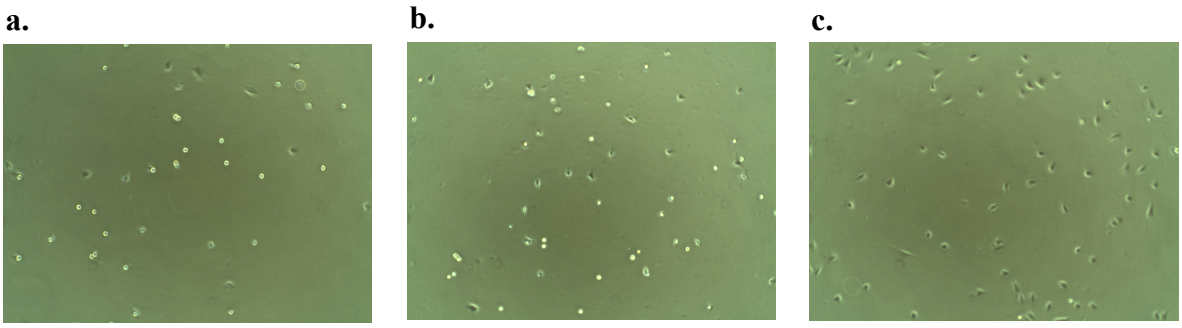

Figure 1. Adhesion of human dermal fibroblasts onto non-coated tissue culture plate (a), tissue culture plate coated with poly-l-lysine (b) and rat tail collagen I (c) one hour after seeding of cells.