



Vitronectin Cell Adhesion Assay (48-well) (VCAA)

Catalog# 8848

Product Description

Cell adhesion is essential for cellular communication, regulation, and the structural integrity of tissues. Vitronectin is a multifunctional, high molecular weight extracellular matrix (ECM) glycoprotein found in both plasma and the ECM, where it promotes cell attachment, spreading, migration, and survival. It contains a somatomedin B domain, an RGD (Arg-Gly-Asp) integrin-binding motif, and hemopexin-like repeats, enabling interactions with multiple integrins ($\alpha_v\beta_3$, $\alpha_v\beta_5$, $\alpha_v\beta_1$) as well as molecules such as PAI-1, glycosaminoglycans, and heparin. ScienCell's Vitronectin Cell Adhesion Assay (VCAA) is designed to provide a rapid, and quantitative measurement of cell adhesion to vitronectin-coated surfaces. The kit is composed of a 48-well plate pre-coated with vitronectin, as well as BSA as negative controls (see plate format in Figure 1). In this assay, cells are seeded under controlled conditions. Non-adherent cells are removed by gentle washing and the remaining adherent cells are quantified using a colorimetric stain measured at 595 nm. This enables assessment of integrin-mediated adhesion, the impact of modulators (e.g., PAI-1) on adhesion, and differences in adhesion across cell types or treatment.

Kit Components

Cat. No.	Component	Quantity	Storage
8848a	Vitronectin & Bovine Serum Albumin coated 48-well plate	1 plate	4°C
8848b	Staining Solution	10 ml	RT
8848c	Extraction Solution	10 ml	RT

Additional Materials Required (Materials Not Included in Kit)

DI Water

Phosphate-buffered saline (PBS)

Plate Reader

Quality Control

Human Vessel Umbilical Endothelial Cells (Cat# 8000, ScienCell) are cultured in the pre-coated 48-well plate. A linear relationship can be observed between signal produced (OD_{595nm}) and the number of cells, as shown in Figure 2 on the following page.

Product Use

This assay kit is used to evaluate the vitronectin cell adhesion *in vitro*. VCAA is for research use only. They are not approved for human or animal use, or for application in *in vitro* diagnostic procedures.

Shipping and Storage

This product will be shipped on gel ice. Upon receipt, store Cat# 8848a at 4°C, and Cat# 8848b and Cat# 8848c at room temperature.

Procedures

1. Under sterile conditions, allow the pre-coated 48-well plate to warm to room temperature and rinse once with PBS.
2. Seed cells of interest onto the 48-well plate (Cat# 8848a) and culture for a desired period of time (at least 30-90 minutes) at 37°C. The BSA coated wells serve as negative controls.
3. After the culture is done, remove culture medium and wash cells with PBS 2 times.
4. Add 200 µl/well of freshly diluted 0.1% glutaraldehyde in PBS, fix for 10 minutes at room temperature. Remove fixing solution and rinse the cells 3 times with PBS.
5. Add 200 µl/well of Staining Solution, incubate for 30 minutes at room temperature on an orbital shaker.
6. After the staining is done, wash plate with DI water 3 times. Remove remaining wash water, invert plate onto an absorbent diaper pad and let the wells air dry.
7. Add 200 µl/well of Extraction Solution, incubate for 5 minutes and read OD_{595nm} using a plate reader.

Figure 1. Layout of the pre-coated plate.

	1	2	3	4	5	6	7	8
A	Vn	Vn	Vn	Vn	Vn	Vn	Vn	Vn
B	Vn	Vn	Vn	Vn	Vn	Vn	Vn	Vn
C	Vn	Vn	Vn	Vn	Vn	Vn	Vn	Vn
D	Vn	Vn	Vn	Vn	Vn	Vn	Vn	Vn
E	Vn	Vn	Vn	Vn	Vn	Vn	Vn	Vn
F	BSA	BSA	BSA	BSA	BSA	BSA	BSA	BSA

Figure 2. Correlation between cell number and absorbance at 595 nm shows linearity for human vessel umbilical endothelial cells (Cat# 8000).

