# Bovine Plasma Vitronectin (BPV)

Catalog #8538

## Product Description

Vitronectin is a glycoprotein found in plasma and extracellular matrix (ECM). It is a soluble, disulfide-linked dimer, composed of a 75 kDa and a 65 kDa peptide chain. In plasma, vitronectin is predominantly found as a single chain monomer [1]. The N-terminal of vitronectin contains multiple binding sites for a variety of structures. Vitronectin is involved in a number of biological functions including cell adhesion, spreading, migration, proliferation, extracellular anchoring, fibrinolysis, hemostasis, and complement immune defense [2, 3, 4]. Vitronectin can be used for coating tissue culture surfaces to promote cell adhesion, proliferation, and differentiation.

ScienCell™ Bovine Plasma Vitronectin is purified from bovine plasma by affinity chromatography [5]. It is supplied as a sterile solution in Dulbecco's Phosphate-Buffered Saline (DPBS). Optimal conditions for cell attachment must be determined for each cell line and application.

## Product Specification

Quantity: 100 µg
Concentration: 0.4 mg/ml
Storage buffer: DPBS, pH 7.4

## Quality Control

Vitronectin quality is assessed by NuPAGE 4-12% Bis-Tris Gel stained with Coomassie brilliant blue. Under reducing conditions, vitronectin appears as a doublet with bands at 75 kDa and 65 kDa. Cell adhesion assays indicate that coating at as low as 0.1 µg/cm$^2$ of vitronectin promotes endothelial cell adhesion compared to non-coated controls.

## Storage/Handling

It is recommended that the product be aliquoted and stored at -80˚C. Vitronectin should be thawed slowly at 2-8°C with no agitation. Any precipitate that is present can be removed by centrifugation. Avoid repeated freeze/thaw cycles.

## Application

Bovine Plasma Vitronectin is recommended for use as a cell culture substratum at 0.1-0.5 µg/cm$^2$. Optimal concentration will vary depending on cell type and will need to be determined by user.

## Coating Instructions

1. Dilute vitronectin in a serum-free, $Ca^{2+}$-free, $Mg^{2+}$-free culture medium or balanced neutral buffer. Coat the culture surface at 0.1-0.5 µg/cm$^2$ in minimal volume.
2. Incubate culture vessels at room temperature for 2 hours or at 2-8˚C overnight.

3. Aspirate remaining vitronectin solution and rinse twice with HBSS or DI $H_2O$. The culture vessels are now ready to use.

*Caution: If handled improperly, some components of this product may present a health hazard. Take appropriate precautions when handling this product, including the wearing of protective clothing and eyewear. Dispose of properly.*

## References


[1] Vuento M, Korkolainen M, Kuusela P, Holtta E. (1985) “Isolation of a novel cell-attachment and spreading-promoting protein from human serum.” *Biochem J*. 227: 421-7.

[2] Hayman EG, Pierschbacher MD, Suzuki S, Ruoslahti E. (1985) “Vitronectin--a major cell attachment promoting protein in fetal bovine serum.” *Exp Cell Res*. 160: 245-58.

[3] Tschopp J, Masson D, Schafer S, Peitsch M, Preissner KT. (1988) “The heparin binding domain of S protein/vitronectin binds to complement components C7, C8, and C9 and perforin from cytolytic T cells and inhibits their lytic activities.” *Biochemistry*. 27:4103-9.

[4] Yatohgo T, Izumi M, Kashiwagi H, Hayashi M. (1988) “Novel purification of vitronectin from human plasma by heparin affinity chromatography.” *Cell Struct Funct*. 13:281-92.

[5] Akiyama KS. (1999) “Purification of Vitronectin.” *Current Protocols in Cell Biology*. 10.6.1-10.6.5