

## Product Information

### Vitronectin from human plasma Cell Culture Tested

Product Number **V8379**

Storage Temperature 2-8 °C

Synonyms: VTN; S-protein; Serum spreading factor; Epiboin

#### Product Description

The product is supplied as a lyophilized powder and is cell culture tested. Optimal conditions for use as an attachment factor may vary for each cell line and application. Vitronectin (VTN) migrates on reducing SDS-PAGE as two polypeptides with approximate molecular masses of 75 and 65 kDa.<sup>1</sup> The latter band appears to be a proteolysis product of the former with cleavage near the C-terminus.

Vitronectin is a glycoprotein present in plasma and tissues.<sup>2,3</sup> Vitronectin is implicated in various biological processes. Together with fibronectin, vitronectin is one of the major cell adhesion proteins in plasma. Although these proteins have similar functions and have an Arg-Gly-Asp cell recognition sequence, they are structurally and immunologically distinct. In addition to promoting the adhesion of various cells in culture, vitronectin binds to glycosaminoglycans, is incorporated as an inhibitor to the membrane cytolytic attack complex of the complement system, interacts with thrombin and antithrombin III during coagulation, and may have a physiological role in the coagulation pathway.<sup>4</sup>

The N-terminal residues of VTN are identical to somatomedin B, which is also present in plasma. This sequence is followed by an R-G-D sequence which interacts with a specific cell-surface receptor. Then a sequence of repeat units follows. The central domain of the molecule is enriched with hydrophobic residues.

Near the C-terminus is a 12 kDa, arginine rich region responsible for heparin binding activity, expressed after a conformational change. The conformational change occurs *in vivo* upon binding to the thrombin-antithrombin III complex and *in vitro* with treatment with urea.<sup>4,5</sup>

#### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

#### Preparation Instructions

It is recommended to use polypropylene vessels during handling, due to the strong affinity of vitronectin for glass and other hydrophilic surfaces.

Reconstitution and culture surface coating:

1. Prepare a stock solution (50 µg/ml) by reconstituting the vial contents with water.
2. Filter-sterilize using a 0.2 µm, low protein-binding filter membrane such as cellulose acetate. Aliquot the sterile stock solution in convenient volumes and store frozen for long-term usage.
3. Prepare the working coating solution (0.5 µg/ml) by diluting an aliquot of the stock solution (50 µg/ml) 100-fold with water.
4. Coat culture surface at ~0.1 µg/cm<sup>2</sup> or 200 µl/cm<sup>2</sup>. Specific cell lines may require higher or lower concentrations for optimal attachment.
5. Incubate coated surface 1–2 hours at 37 °C.
6. Remove any excess solution by gentle washing with a balanced salt solution before introducing medium.

**Storage/Stability**

It is recommended to store the lyophilized product desiccated at 2-8 °C. Under these conditions it is stable for at least 2 years. Vitronectin can be reconstituted with water and filter sterilized.

Vitronectin is stable in solution, but for long term storage it is recommended to store aliquots at –20 °C or –70 °C. Avoid repeated freezing and thawing.

**References**

1. Tollefsen, D.M. *et al.*, J. Biol. Chem., **265**, 9778-9781 (1990).
2. Shaffer, M.C. *et al.*, J. Lab. Clin. Med., **103**, 783 (1984).
3. Conlan, S.V. *et al.*, Blood, **72**, 185 (1988).
4. Preissner, K.T., Annu. Rev. Cell Biol., **7**, 275 (1991).
5. Preissner, K.T., and Seiffert, D., Thrombosis Research, **89**, 1-21 (1998).

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