CULTREX® Product Data

For Research Use Only. Not For Use In Diagnostic Procedures

Human Vitronectin, *PathClear®

Catalog #: 3421-001-01 **Size:** 50 µg

Description: Vitronectin is an extracellular, soluble, disulfide-linked dimer, composed of a 75 kDa and a 65 kDa peptide chain with a total molecular weight of 140 kDa. Vitronectin is a major plasma glycoprotein that promotes cellular adhesion and spreading,[1,2] inhibits the membrane-damaging effect of the terminal cytolytic complement pathway,[3] and binds to several serpin serine protease inhibitors.[4,5] Vitronectin, along with collagen IV, fibronectin, and laminin can support robust, long term proliferation of human embryonic stem cells in the undifferentiated state.[6,7] Vitronectin can be used for coating tissue culture surfaces to promote cell adhesion, proliferation and differentiation, or as an additive for serum-free media. Vitronectin is purified from human plasma and is provided 0.2 µm sterile filtered.

Specifications:

Source:	Human plasma
Storage Buffer:	10 mM Sodium Phosphate, pH 7.7, 8M Urea, 5 mM EDTA, 500 mM NaCl.
Storage:	Store at -80°C in a manual defrost freezer. Avoid freeze-thaw cycles.
Purity:	>90% by SDS-PAGE.
Concentration:	1 mg/ml

Materials Qualification:

Functional Assay:

- Tested for ability to promote attachment of HT-1080 cells.

*Sterility Testing:

- No bacterial or fungal growth detected after incubation at 37°C for 14 days following USP XXIV Chapter 71 sterility testing protocols.
- No mycoplasma contamination detected by PCR.
- Human Vitronectin, PathClear® is PCR tested negative for eight different human pathogenic viruses including Hepatitis (A, B, C) HIV (1, 2), Hantaan, Seoul, and Sin Nombre.
- Endotoxin concentration < 20 EU/ml by LAL assay.

Safety Statement: Cultrex® Human Vitronectin, PathClear® is purified from human source material and therefore should be treated as potentially infectious and handled at Biological Safety Level 2 to minimize exposure.

Coating Procedure:

The recommended working concentration is 0.5-5 µg/ml (0.17-1.7 µg/cm^2) of growth surface, depending on cell type and experimental condition. Only dilute as much Vitronectin as needed; it is not stable for extended periods of time when diluted. Store concentrated material in aliquots to reduce the number of freeze-thaw cycles.

A. Thaw the vitronectin stock solution and dilute appropriately with sterile H_2O. Mix and transfer to the wells of tissue culture plates. Spread the solution to completely cover the bottom of the wells.

B. The following is a guide for the suggested volumes required per well:

Plate Type	Volume Vitronectin per Well
6 wells (or 35 mm dish)	2.5 ml
24 wells	600 µl
48 wells	300 µl
96 wells	100 µl

C. Coat wells with Vitronectin solution and incubate at 37°C overnight.
D. Aspirate solution, and rinse the wells once with sterile PBS.
E. Block wells with 2% BSA, PBS for one hour at 37°C.
F. Add cells to wells (optimize concentration for each cell line and experimental condition).
G. Culture and analyze cells as needed (optimize for each cell line and experimental condition).

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. Wiman B, Almquist A, Sigurdardottir O, Lindahl T. (1988) Plasminogen activator inhibitor 1 (PAI) is bound to vitronectin in plasma. *FEBS Lett.* 242:125-8.
5. Czekay RP, Aertgeerts K, Curriden SA, Loskutoff DJ. (2003) Plasminogen activator inhibitor-1 detaches cells from extracellular matrices by inactivating integrins. *J Cell Biol*. 160:781-91.
6. Ludwig TE, Levenstein ME, Jones JM, Berggren WT, Mitchen ER, Frane JL, Crandall LJ, Daigh CA, Conrad KR, Piekarczyk MS, Llanas RA, Thomson JA. (2005) Derivation of human embryonic stem cells in defined conditions. *Nat Biotech.* 24:185-7.
7. Braam SR, Zeinstra L, Litjens S, Ward-van Oostwaard D, van den Brink S, van Laake L, Lebrin F, Kats P, Hochstenbach R, Passier R, Sonnenberg A, Mummery CL. (2008) Recombinant vitronectin is a functionally defined substrate that supports human embryonic stem cell self-renewal via αVβ5 integrin. *Stem Cells.* 26:2257-65.

Related Products:

Catalog#	Description	Size
3422-001-01	Cultrex® Human Vitronectin, Nucleic Acid Reduced, PathClear®	50 µg
3417-001-01	Cultrex® Bovine Vitronectin, NZHD*	50 µg
3420-001-01	Cultrex® Human Fibronectin, PathClear®	1 mg
3416-001-01	Cultrex® Bovine Fibronectin, NZHD	1 mg
3415-001-02	Cultrex® Human BME, PathClear®	1 ml
3431-005-02	Cultrex® BME with Phenol Red, Reduced Growth Factor PathClear®	5 ml
3433-005-02	Cultrex® BME; no Phenol Red; Reduced Growth Factor PathClear®	5 ml
3432-005-02	Cultrex® BME, PathClear®	5 ml
3430-005-02	Cultrex® BME with Phenol Red, PathClear®	5 ml
3430-005-01	Cultrex® BME with Phenol Red	5 ml
3432-005-01	Cultrex® BME without Phenol Red	5 ml
3431-005-01	Cultrex® BME with Phenol Red; Reduced Growth Factor	5 ml
3433-005-01	Cultrex® BME; no Phenol Red; Reduced Growth Factor	5 ml

*New Zealand Herd Derived

Catalog#	Description	Size
3400-010-02	Cultrex® Mouse Laminin I, PathClear®	1 ml
3400-010-01	Cultrex® Mouse Laminin I	1 mg
3440-100-01	Cultrex® Rat Collagen I	100 mg
3410-010-01	Cultrex® Mouse Collagen IV	1 mg
3438-100-01	Cultrex® Poly-L-Lysine	100 ml
3439-100-01	Cultrex® Poly-D-Lysine	100 ml
3445-048-01	Cultrex® 3-D Culture Matrix™ BME	15 ml
3446-005-01	Cultrex® 3-D Culture Matrix™ Laminin I	5 ml
3447-020-01	Cultrex® 3-D Culture Matrix™ Collagen I	100 mg

Accessories:

Catalog#	Description	Size
3484-096-K	CultreCoat® 96 Well BME-Coated Cell Invasion Optimization Assay	96 samples
3455-096-K	Cultrex® 96 well BME Cell Invasion Assay	96 samples
3455-024-K	Cultrex® 24 Well BME Cell Invasion Assay	24 inserts
3480-024-K	CultreCoat® 24 Well BME-Coated Cell Invasion Assay	24 inserts
3456-024-K	Cultrex® 24 Well Laminin I Cell Invasion Assay	24 inserts
3457-024-K	Cultrex® 24 Well Collagen I Cell Invasion Assay	24 inserts
3458-024-K	Cultrex® 24 Well Collagen IV Cell Invasion Assay	24 inserts
3465-024-K	Cultrex® 24 well Migration Cell Assay	96 samples
3465-096-K	Cultrex® 96 well Migration Cell Assay	96 samples
3456-096-K	Cultrex® Laminin I Cell Invasion Assay	96 samples
3457-096-K	Cultrex® Collagen I Cell Invasion Assay	96 samples
3458-096-K	Cultrex® Collagen IV Cell Invasion Assay	96 samples
3490-096-K	CultreCoat® BME 96 Well Cell Adhesion Assay	96 samples
3496-096-K	CultreCoat® 96 Well Adhesion Protein Array	96 samples
3437-100-K	Cultrex® Cell Staining Kit	100 ml
3450-048-05	CellSperse™	15 ml

Lot Specific Data:

Endotoxin (LAL):

Cultrex®

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PathClear®
Catalog #: 3421-001-01
Storage: -80 °C