

# Vitronectin XF™

**Defined, Xeno-Free Cell Attachment Factor that Supports the Growth and Differentiation of Human Pluripotent Stem Cells Under Serum-Free, Feeder-Free Conditions**

Catalog #07180 2 mL  
Catalog #07190 1 Kit



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## Product Description

Vitronectin XF™, developed and manufactured by Primorigen Biosciences, Inc., is an effective alternative to Corning® Matrigel®. Vitronectin XF™ is a defined, xeno-free matrix that supports the growth and differentiation of human pluripotent stem cells. When used with mTeSR™1 (Catalog #05850), TeSR™2 (Catalog #05860), or TeSR™-E8™ (Catalog #05940), Vitronectin XF™ provides a completely defined culture system for the maintenance of human embryonic stem (ES) cells and human induced pluripotent stem (iPS) cells under feeder-free conditions.<sup>1-5</sup> This system allows complete control over the culture environment, resulting in more consistent cell populations and reproducible results in downstream applications.

## Ordering Information

PRODUCT NAME	CATALOG #	SIZE	KIT COMPONENTS
Vitronectin XF™	07180	2 mL	Not applicable.
Vitronectin XF™ Kit	07190	1 Kit	<ul style="list-style-type: none"><li>• Vitronectin XF™</li><li>• Gentle Cell Dissociation Reagent</li><li>• CellAdhere™ Dilution Buffer</li><li>• Non Tissue Culture-Treated 6-Well Plates</li></ul>

## Component Storage and Stability

PRODUCT NAME	CATALOG #	SIZE	STORAGE	SHELF LIFE
Vitronectin XF™	07180	2 mL	Store at -20°C or -80°C.	Stable until expiry date (EXP) on label.
Gentle Cell Dissociation Reagent	07174	100 mL	Store at 15 - 25°C.	Stable until expiry date (EXP) on label.
CellAdhere™ Dilution Buffer	07183	100 mL	Store at 2 - 8°C.	Stable until expiry date (EXP) on label.
Non Tissue Culture-Treated 6-Well Plates	27147	8/Pack	Store at 15 - 25°C.	See supplier label.

## Directions for Use

### COATING CULTUREWARE WITH VITRONECTIN XF™

Use sterile techniques when coating cultureware with Vitronectin XF™.

1. Thaw Vitronectin XF™ at room temperature (15 - 25°C).  
NOTE: If not used immediately, store at 2 - 8°C for up to 2 weeks. Alternatively, aliquot and store at -20°C or -80°C. Do not exceed the expiry date (EXP) as indicated on the label. Avoid additional freeze-thaw cycles.
2. Dilute Vitronectin XF™ in CellAdhere™ Dilution Buffer to reach a final concentration of 10 µg/mL (i.e. use 40 µL of Vitronectin XF™ per 1 mL of CellAdhere™ Dilution Buffer). Use a 50 mL polypropylene conical tube (Corning Catalog #352070) to dilute Vitronectin XF™.
3. Gently mix the diluted Vitronectin XF™. Do not vortex.
4. Immediately use the diluted Vitronectin XF™ solution to coat non-tissue culture-treated cultureware. See Table 1 for recommended coating volumes.

**Table 1. Recommended Volumes for Coating Cultureware with Vitronectin XF™**

CULTUREWARE	VOLUME OF DILUTED VITRONECTIN XF™
6-well plate	1 mL/well
100 mm dish	6 mL/dish
T-25 cm <sup>2</sup> flask	3 mL/flask
T-75 cm <sup>2</sup> flask	8 mL/flask

- Gently rock the cultureware back and forth to spread the Vitronectin XF™ solution evenly across the surface.  
NOTE: Non-tissue culture-treated cultureware should be used for coating with Vitronectin XF™. If the cultureware's surface is not fully coated by the Vitronectin XF™ solution, it should not be used for human ES and iPS cell culture.
- Incubate at room temperature (15 - 25°C) for at least 1 hour before use. Do not let the Vitronectin XF™ solution evaporate.  
NOTE: If not used immediately, the cultureware must be sealed to prevent evaporation of the Vitronectin XF™ solution (e.g. with Parafilm®) and can be stored at 2 - 8°C for up to 1 week after coating. Allow stored coated cultureware to come to room temperature (15 - 25°C) for 30 minutes before moving onto the next step.
- Gently tilt the cultureware on to one side and allow the excess Vitronectin XF™ solution to collect at the edge. Remove the excess solution using a serological pipette or by aspiration. Ensure that the coated surface is not scratched.
- Wash the cultureware once using CellAdhere™ Dilution Buffer (e.g. use 2 mL/well if using a 6-well plate).
- Aspirate wash solution and add the appropriate volume of culture medium (e.g. 2 mL/well if using a 6-well plate).

To passage ES and iPS cells cultured on Vitronectin XF™ in TeSR™ media, refer to the Technical Manuals: Maintenance of Human Pluripotent Stem Cells in mTeSR™1 (Document #29106), TeSR™2 (Document # 28210) or TeSR™-E8™ (Document #29267). These documents are available on our website at [www.stemcell.com](http://www.stemcell.com) or contact us to request a copy.

## References

- Braam SR et al. (2008) Recombinant vitronectin is a functionally defined substrate that supports human embryonic stem cell self-renewal via  $\alpha$ 5 $\beta$ 1 integrin. *Stem Cells* 26(9): 2257–65.
- Chen G et al. (2011) Chemically defined conditions for human iPSC derivation and culture. *Nat Methods* 8(5): 424–9.
- Li J et al. (2010) Impact of vitronectin concentration and surface properties on the stable propagation of human embryonic stem cells. *Biointerphases* 5(3): FA132–42.
- Prowse ABJ et al. (2010) Long term culture of human embryonic stem cells on recombinant vitronectin in ascorbate free media. *Biomaterials* 31(32): 8281–8.
- Rowland TJ et al. (2010) Roles of integrins in human induced pluripotent stem cell growth on Matrigel and vitronectin. *Stem Cells Dev* 19(8): 1231–40.



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