



Vitronectin SC (VSC)

Catalog #MB9138

Product Description

Vitronectin SC is a recombinant human vitronectin with an engineered sequence optimized for enhanced stability and consistent performance in serum-free, xeno-free cell culture systems. As a key extracellular matrix glycoprotein, vitronectin supports cell adhesion, proliferation, and differentiation through multiple integrin-binding motifs. Vitronectin SC provides a defined and animal-origin-free surface for the culture of human pluripotent stem cells (hPSCs), including both embryonic stem (ES) cells and induced pluripotent stem (iPS) cells, under feeder-free and serum-free conditions. It enables robust cell attachment and sustained pluripotency, offering a reliable alternative to traditional matrices such as Matrigel® and plasma-derived vitronectin. It supports consistent growth and high-quality maintenance of hPSCs over multiple passages, minimizing variability in downstream differentiation assays.

Product Specification

Quantity: 0.8 mg
Concentration: 0.5 mg/mL
Storage buffer: DPBS, pH 7.4

Quality Control

The purity of Vitronectin SC has been validated by electrophoresis. The product has been tested for its ability to support cell adhesion to culture surfaces and promote cell growth. Vitronectin SC is confirmed to be free of bacterial and fungal contamination.

Storage/Handling

Store at -20°C or -80°C upon receipt. It is recommended that the product be aliquoted once thawed and stored at -20°C or -80°C . Avoid repeated freeze/thaw cycles. Vitronectin should be thawed slowly at $2-8^{\circ}\text{C}$ with no agitation. Any precipitate that is present can be removed by centrifugation.

Application

Vitronectin SC is recommended for use as a cell culture substratum at $0.1-10\text{ }\mu\text{g}/\text{cm}^2$. Optimal concentration will vary depending on cell type and will need to be determined by user.

Coating Instructions (to support human PSC/iPSC)

1. Thaw Vitronectin SC at room temperature ($15-25^{\circ}\text{C}$).

NOTE: If not used immediately, store at $2-8^{\circ}\text{C}$ for up to 2 weeks. Alternatively, aliquot and store at -20°C or -80°C . Do not exceed the expiry date as indicated on the label. Avoid additional freeze-thaw cycles.

2. Dilute Vitronectin SC in DPBS (Catalog #0303) to reach a final concentration of $10\text{ }\mu\text{g}/\text{mL}$.

3. Gently mix the diluted Vitronectin SC. Do not vortex.
4. Immediately use the diluted Vitronectin SC solution to coat cultureware (e.g. 1mL/well for 6-well plate format).
5. Gently rock the cultureware back and forth to spread the Vitronectin SC solution evenly across the surface.
6. Incubate at room temperature for at least 1 hour before use. Do not let the Vitronectin SC solution evaporate.

NOTE: If not used immediately, the cultureware must be sealed to prevent evaporation of the Vitronectin SC 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 for 30 minutes before proceeding to the next step.

7. Gently tilt the cultureware on to one side and allow the excess Vitronectin SC 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.
8. Optional: Wash the cultureware once using DPBS.
9. Aspirate the DPBS and add the appropriate volume of culture medium (e.g. 2 mL/well if using a 6-well plate)

NOTE: Depending on the property of the cell line, Vitronectin SC coating can support colony attachment at the range of 5-10 µg/mL. We recommend 10 µg/mL for better cell attachment.

NOTE: Reuse of diluted Vitronectin SC for coating will significantly reduce colony attachment efficiency and therefore is not recommended.