

# Primary Human Umbilical Vein Endothelial Cells (UVEC)

SKU: CDS11949 | Category: Primary Cells — Human

**Validation & Biomarker Data Guide** · Lineage classification: Endothelial cell

## 1. Product Overview

Primary Human Umbilical Vein Endothelial Cells (UVEC) is a primary cell product from human Umbilical Vein for physiologically relevant in vitro studies. The product is particularly relevant to Umbilical cord cell series and Endothelial cells research. It can support research in cell physiology, signaling, metabolism, toxicology, drug response and cell-based assay development where a primary-cell model is preferred. Culture and passage conditions should follow the product-specific protocol. For research use only.

Primary tissue / source: Umbilical Vein | Growth type: Adherent Cells | Tumorigenic status: Normal Cells | Pack size: 1 x 0.5 million cells

## 2. Typical Applications

- Umbilical cord cell series
- Endothelial cells
- Circulatory system

## 3. Identity & Phenotypic Marker Panel

A representative identity panel for endothelial cell products is shown below. Actual per-lot Certificates of Analysis should be consulted for verified identity data.

| Marker          | Expected Result | Range             |
|-----------------|-----------------|-------------------|
| CD31 (PECAM-1)  | Positive        | 85–99% positive   |
| VE-cadherin     | Positive        | 75–97% positive   |
| vWF             | Positive        | 70–95% positive   |
| Pan-cytokeratin | Negative / low  | ≤5% (background)  |
| α-SMA           | Negative / low  | ≤10% (background) |

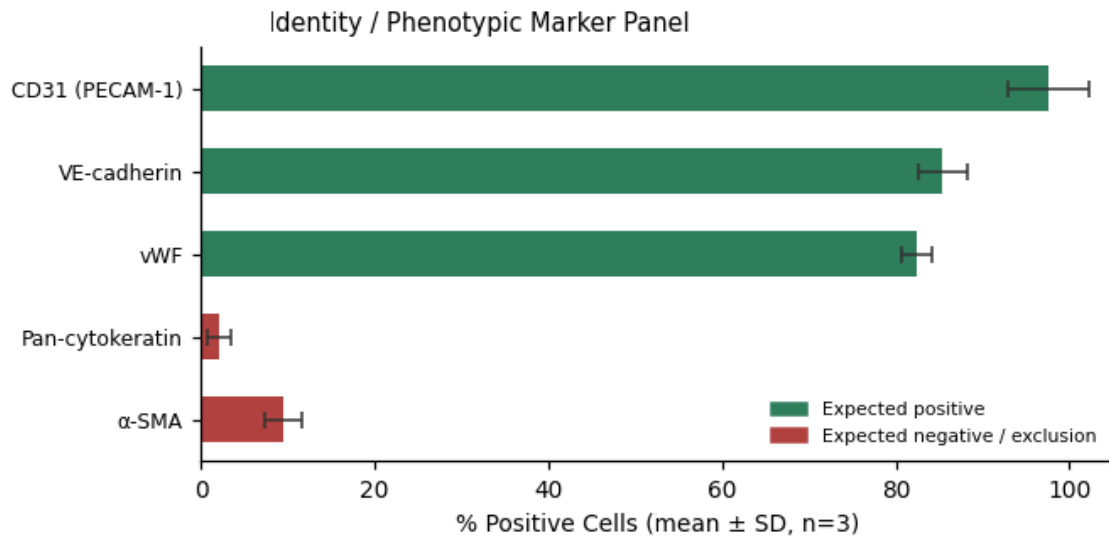


Figure 1. Marker expression profile (mean ± SD, n = 3 replicates).

#### 4. Growth Kinetics & Viability

Growth and viability trends over 120 hours in standard culture conditions.

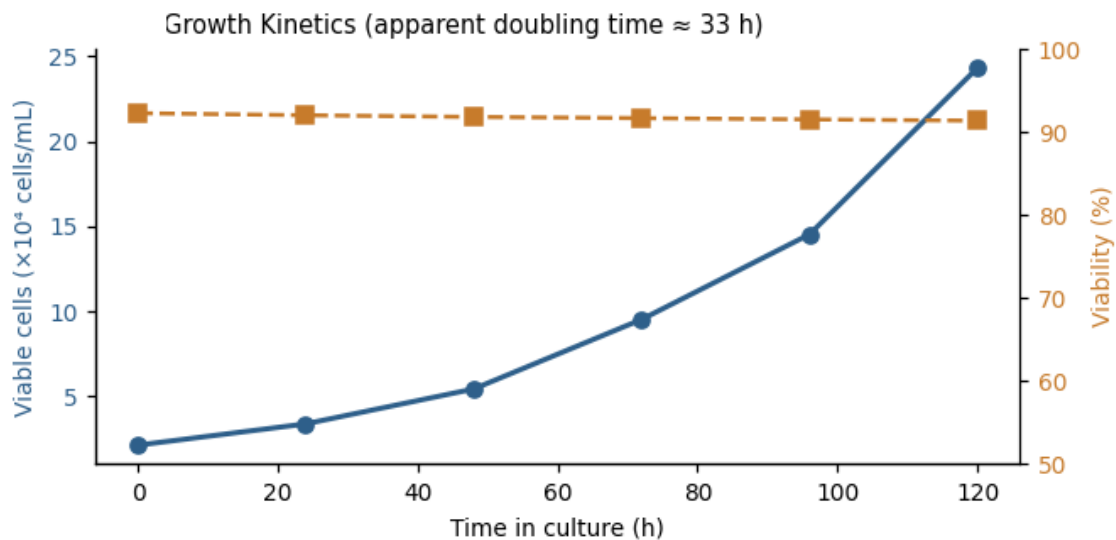


Figure 2. Growth curve (viable cell density, left axis) and viability trend (right axis).

#### 5. Functional Validation Assay

**Tube formation (angiogenesis) assay:** Matrigel tube-formation assay quantifying network/branch-point formation to confirm angiogenic functional competence; Ac-LDL uptake as secondary marker.

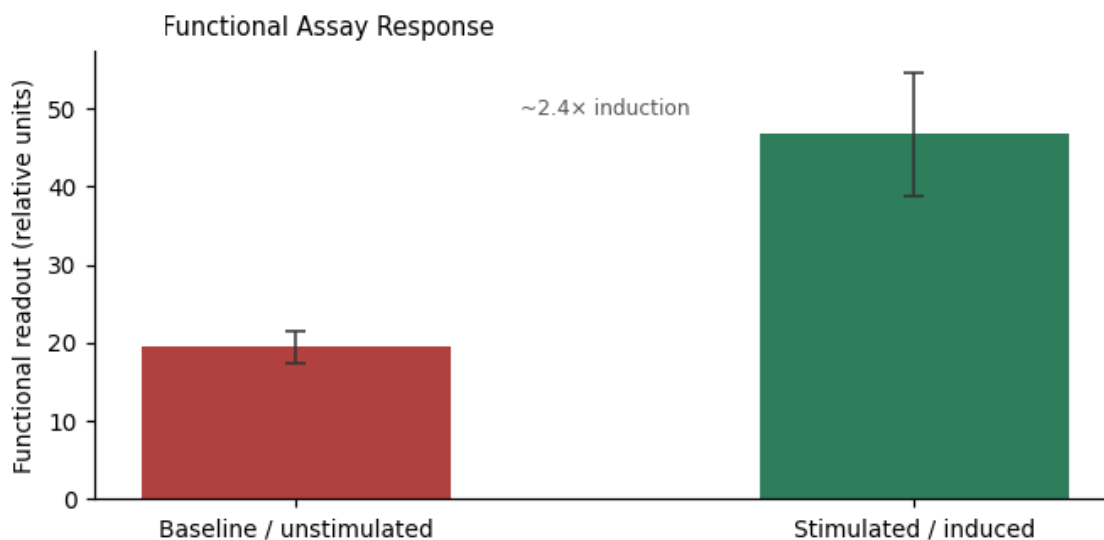


Figure 3. Functional assay readout — ~2.4× induction over baseline.

## 6. QC Acceptance Criteria

| Acceptance Criterion                              | Result                        |
|---------------------------------------------------|-------------------------------|
| ≥85% CD31+ by flow cytometry/ICC                  | PASS                          |
| Positive tube formation on Matrigel within 6-18 h | PASS                          |
| Apparent population doubling time                 | ≈ 33 hours                    |
| Functional assay outcome                          | ~2.4× induction over baseline |

## 7. Handling & Culture Notes

- Refer to the product-specific Certificate of Analysis and datasheet for validated culture medium, seeding density, and passaging recommendations.
- As with any primary cell or cell line, confirm mycoplasma-negative status, expected morphology by phase-contrast microscopy, and viability by trypan blue or equivalent dye-exclusion assay at each passage before use in downstream assays.