

# Primary Rat Articular Chondrocytes (AC)

SKU: CDS10641 | Category: Primary Cells — Rat

**Validation & Biomarker Data Guide** • Lineage classification: Chondrocyte

## 1. Product Overview

Primary Rat Articular Chondrocytes (AC) is a primary cell product from rat Articular cartilage for physiologically relevant in vitro studies. The product is particularly relevant to Skeletal cell series and Chondrocytes 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: Articular cartilage | Growth type: Adherent Cells | Tumorigenic status: Normal Cells | Pack size: 1 x 0.5 million cells

## 2. Typical Applications

- Skeletal cell series
- Chondrocytes
- Skeletal, articular and cutaneous systems

## 3. Identity & Phenotypic Marker Panel

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

| Marker      | Expected Result | Range             |
|-------------|-----------------|-------------------|
| Collagen II | Positive        | 70–95% positive   |
| Aggrecan    | Positive        | 65–92% positive   |
| SOX9        | Positive        | 70–95% positive   |
| Collagen I  | Negative / low  | ≤25% (background) |
| CD31        | Negative / low  | ≤3% (background)  |

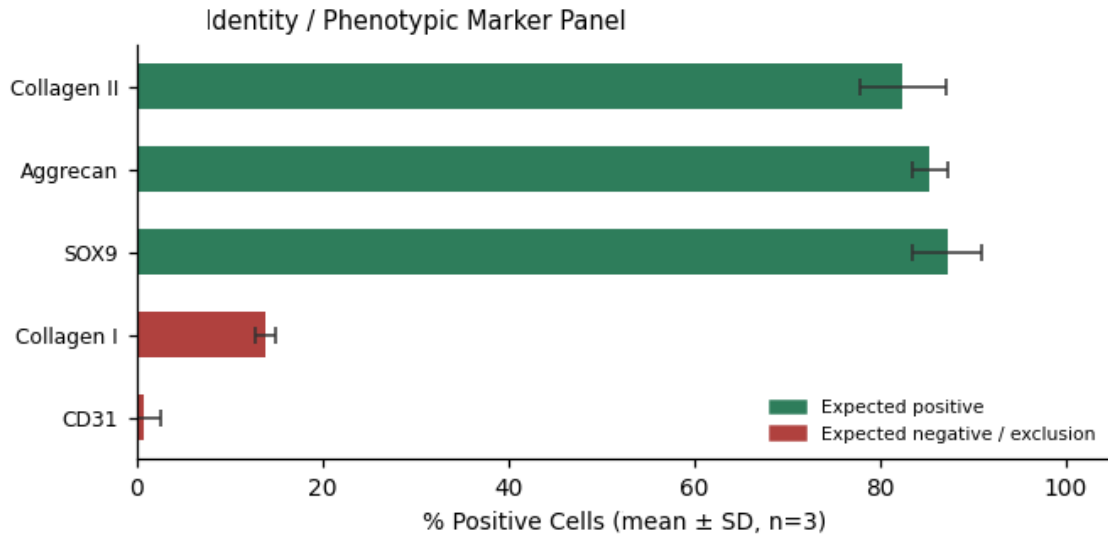


Figure 1. Marker expression profile (mean ± SD, n = 3 replicates).

#### 4. Growth Kinetics & Viability

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

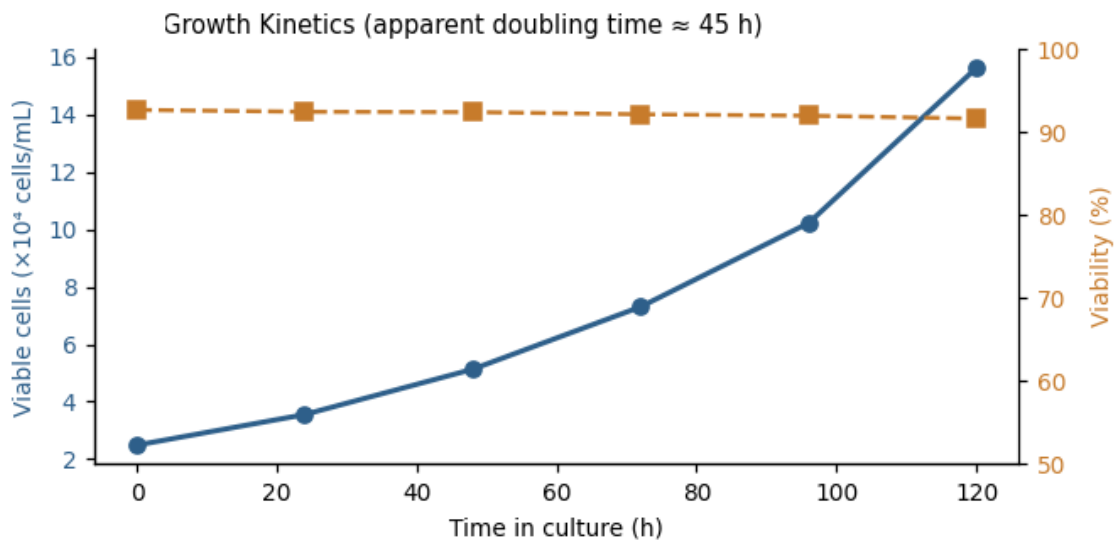


Figure 2. Growth curve (viable cell density, left axis) and viability trend (right axis).

#### 5. Functional Validation Assay

**Chondrogenic matrix / pellet culture assay:** 3D pellet culture with Alcian Blue / Safranin-O staining and Collagen II IHC to confirm cartilage-specific ECM deposition; GAG content quantified by DMMB assay.

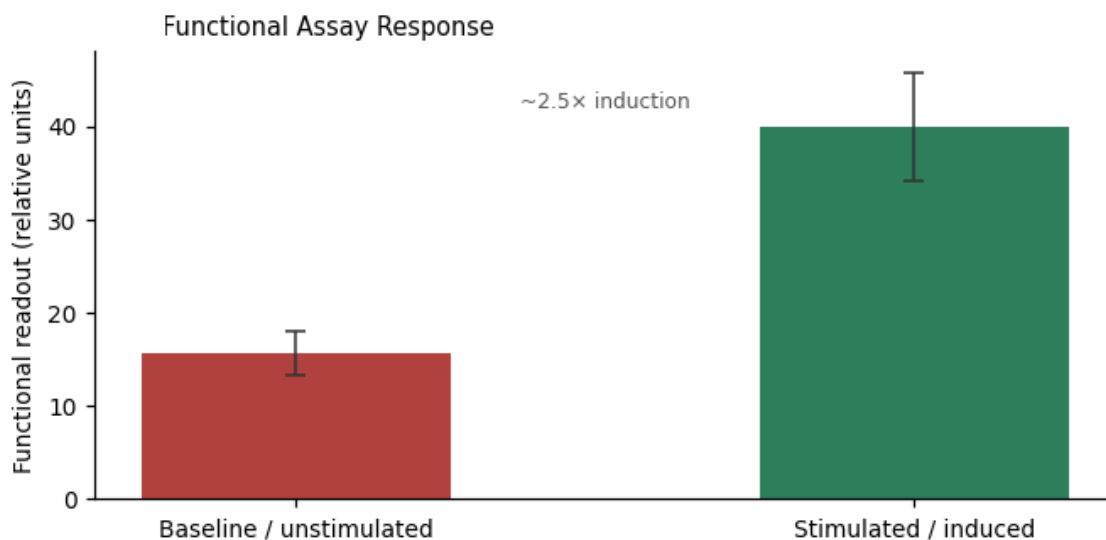


Figure 3. Functional assay readout — ~2.5x induction over baseline.

## 6. QC Acceptance Criteria

| Acceptance Criterion                                                     | Result                        |
|--------------------------------------------------------------------------|-------------------------------|
| ≥70% Collagen II+/SOX9+ by ICC                                           | PASS                          |
| Positive Alcian Blue/Safranin-O staining in pellet culture               | PASS                          |
| Low Collagen I:II ratio (dedifferentiation index within reference range) | PASS                          |
| Apparent population doubling time                                        | ≈ 45 hours                    |
| Functional assay outcome                                                 | ~2.5x 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.