Primary Cells
Biologically Relevant Tools for Research

What Are They?
Non-transformed, non-immortalized cells directly from the tissue

Organ → Tissue → Primary Cells

Why Use Them?
- Demonstrates tissue characteristics similar to in vivo conditions
- Emphasis from research community to use better cell culture tools
- Reduces animal testing costs if used for initial screens to refine experiments
- Limited lifespan maintains tissue-like characteristics versus cell lines that are passaged longer
- Valuable tool as qualified normal controls for primary diseased cell studies

Concerns with use of Cell lines

Authentication of cultured cell lines is critical for grant applications¹
18-36% of cells line are misidentified or cross-contaminated²

primary cultures of malignant prostatic cells and their normal epithelial counterparts are sought³

In a study of over 500 leukemia-lymphoma cell lines, 15% of the cell lines were misidentified⁴

Nature News: Some argue tumor cells obtained directly from patients are the best way to study cancer⁵

1 Notice Number: NOT-OD-08-017 <grants.nih.gov/grants/guide/notice-files/NOT-OD-08-017.html>

Your tools to get started on primary cell culture
- Lonza’s Primary Cells
- Lonza’s BulletKit™ Medium
- Lonza’s culturing protocols
- Lonza’s scientific support team

Primary Cells vs. Immortalized Cell Lines

1. Limited lifespan and self-renewing
2. From one and both high resolutions and at least two biological replicates
3. Pre-characterized and ready to use
4. Study cell lines with varied donor characteristics
5. Study without donor repeatability

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Immortalized Cell Lines
- Lonza’s Resources
- Lonza’s Results
- Lonza’s Reagents
- Lonza’s Support

Authentication required before use

Primary Cells
- In finite lifespan, loses cell specificity
- From the tissue
- Study cells with varied donor characteristics

Immortalized Cell Lines
- In infinite lifespan, loses cell specificity
- In a vial with high mutations and clonal selections
- Study cells with varied donor characteristics

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