

Cell-based Assays for Evaluating Skin Health Products and Ingredients

NRC-CMRC

Aquatic and Crop Resource Development

Identification and Assay Analysis

The Natural Health Products (NHP) Program offers a panel of cell-based assays useful for evaluating natural health products and purified compounds in diverse applications relevant to skin health. These assays support product development activities by providing key insight into lead ingredient identification, target validation and product efficacy and safety.



Technical Capabilities

Cell Models

- Primary human epidermal keratinocytes
- Primary human dermal fibroblasts
- Co-cultures of primary keratinocytes and fibroblasts
- Immortalized cell lines (species specific)
- Reconstructed human 3D epidermal model

Test Formats

- Complex mixtures and NHP formulations
- Crude extracts (water, alcohol, ether)
- Essential oils and aromatics
- Purified compounds and single molecule entities

Applications

- Evaluation of adverse effects
- Validation of product efficacy
- Mechanism(s) of action determination
- Insight into delivery and uptake

Specific Areas of Expertise

Irritation and Corrosion:

- Compatible with a range of test substances
- Standardized using OECD irritants and corrosives
- Colorimetric and fluorescence viability readouts



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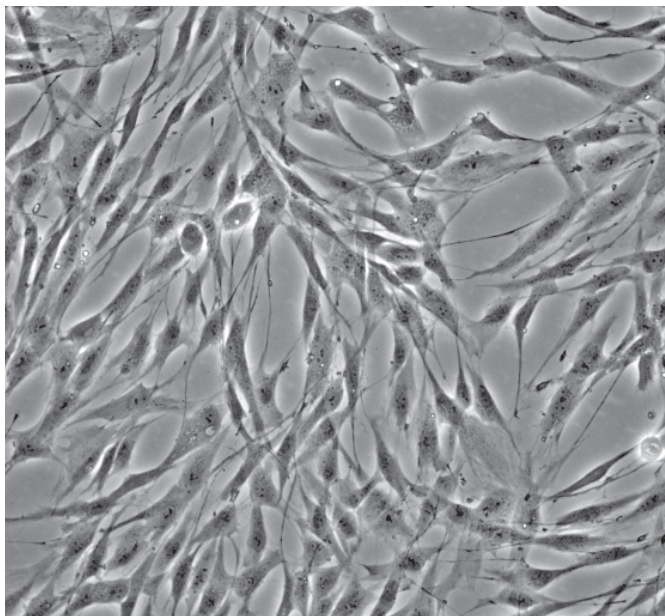


Fig 1. Primary human dermal fibroblasts in culture

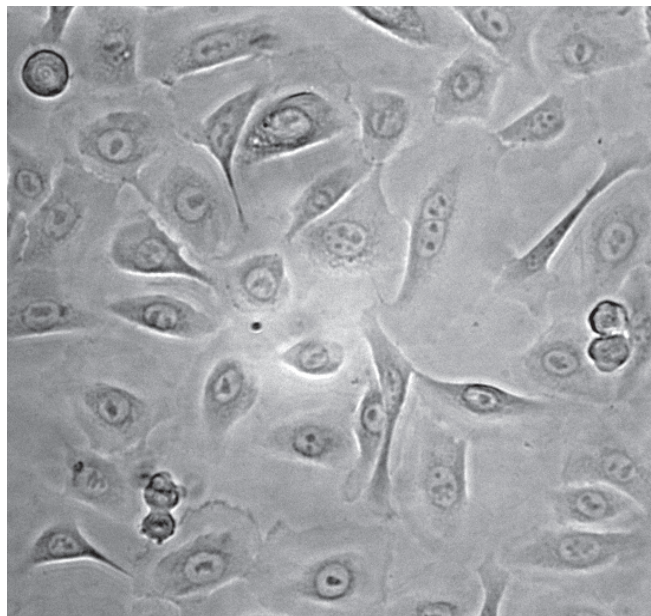


Fig 2. Primary human keratinocytes in culture

Phototoxicity, Photosensitization, Photoprotection:

- Photo-irritation factor – evaluation
- Benchmarked against OECD guidelines
- UVA, UVB, white light, blue light

Cytokine and Inflammatory Response:

- Naïve and challenge models
- Transcript profiling by qRT-PCR and qPCR array
- Cytokine profiling by multiplex protein bead array

Permeability:

- Parallel artificial membrane permeability assay (PAMPA)
- Percutaneous absorption model
- Caco₂ cell-based permeability assay

Wound Healing and Aging:

- 2D scratch assay
- Senescence-related proliferation and viability
- Age-associated biomarker expression

Get started today

Have our Client Relationship Leader meet with your scientific and management teams to match NRC capabilities to your needs.



Contact

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