

TOXNOTE

In Vitro Toxicology Services – 3D Human Tissue Constructs



MB Research has extensive experience utilizing three-dimensional Human Tissue Constructs by MatTek Corp. and often partners with industry leaders in developing custom approaches for the assessment of toxic potential and efficacy of test substances.

MatTek 3-D Human Tissue Constructs

Ocular – Cultured to form a stratified, squamous epithelium similar to that found in the cornea.

Dermal – Consists of organized basal, spinous, granular, and cornified layers analogous to those found *in vivo*.

- Cytotoxicity via MTT
- Skin Irritation Testing (recently validated as alternative by ECVAM)
- Inflammatory mediator and cytokine release (PGE-2, TNF α , IL1 α , and other interleukins)
- Histological examination (H & E) of the epidermal layers, including the stratum corneum
- EpiOcular and EpiDerm results can be correlated to *in vivo* irritation classifications

MatTek EpiDerm Corrosivity Test



- Validated by ECVAM and ICCVAM as in vitro alternative corrosivity test based on human skin cells
- Allows testing of material not compatible with Corrositex

Other MatTek tissue models available for comparison testing

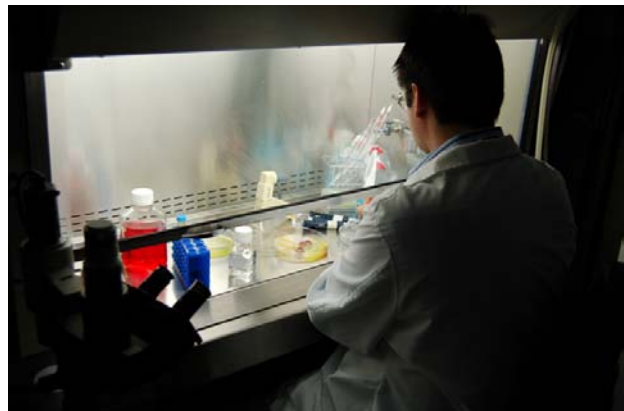
• EpiVaginal • EpiOral • EpiAirway • Full Thickness • Melanoderm

- Cytotoxicity via MTT
- Additional Endpoints available
 - Cytokine release
 - Histology

Background

MB Research Labs conducts low-cost, rapid in vitro screening assays for clients in the cosmetic, consumer product, chemical, biotech and pharmaceutical industries.

For over 10 years, MB Research Scientists have been developing and conducting cell and tissue based assays that **reduce, refine and/or replace** the use of animals in toxicological assessments.



Other In Vitro Assays Offered:

- In Vitro Irritation
 - 3D Human Tissue Model Constructs – alternative to Draize
 - Agar Overlay Cytotoxicity (ISO 10993-5 and USP 23)
 - Cytotoxicity – based on ICCVAM protocol
 - Corrositex – alternative to Draize – DOT Packing Groups
- Alternative Irritation
 - Bovine Corneal Opacity & Permeability (BCOP) – alternative to Draize
 - Chorioallantoic Membrane Vascular Assay (CAMVA) – alternative to Draize
 - HET-CAM – alternative to Draize
 - PorCORA – Porcine Corneal Opacity and Reversibility Assay
 - PorFocal – Low level ocular irritation screening
- Mechanistic
 - Nitric Oxide Sythase (Irritation/Inflammatory Mediator)
 - Peroxide Production Assay (Lipid Peroxidation)
 - Tyrosinase Inhibition Assay
 - MelanoDerm
 - Angiogenesis/Anti-Angiogenesis
- Photobiology
 - 3T3 Neutral Red Uptake Phototoxicity Test – OECD 432
 - EpiDerm Phototoxicity

Custom assays and protocol development services are also available upon request.