Alternative Toxicology Testing Services

Eurofins BioPharma Product Testing is a leader in the safety testing without animals and deeply committed to the principles of the 3 R’s of Replacement, Reduction and Refinement.

Our evaluation methods incorporate a unique approach that lead to improved prediction of human results.

Our service portfolio includes methods for replacing the use of animals to evaluate acute systemic toxicity, skin and eye irritation and skin allergenicity but also reduce the use of animals for repeated-dose toxicity, carcinogenicity and reproductive toxicity.

Eurofins BioPharma Product Testing is in close contact and actively working with independent scientists and regulatory agencies to adopt their methods to satisfy various regulations.

We are pro-active in the development and use of in vitro and ex vivo methods partnering researchers and clients in pre-validation and validation studies.

Eurofins BioPharma Product Testing is contributed to the advancement of animal welfare and to inspire others to include human concern for animals as a core aspect of corporate social responsibility.
Our Study Types for Screening and Regulatory purpose

**in silico Safety Modelling**
- Structure activity relationship by computerized models (e.g. DEREK)

**Eye Irritancy**
- Bovine corneal opacity and permeability test (BCOP; OECD 437)
- Hens egg chorioallantoic membrane test (HET-CAM)
- Reconstructed human corneal epithelial models (EpiOcular)

**Skin Corrosivity**
- Reconstructed human skin equivalents (OECD 431)
- Corrositex® Membrane barrier test (OECD 435)

**Skin Irritancy**
- Reconstructed human skin equivalents (OECD 439)

**Skin Sensitization**
- *in vitro*: KeratinoSens (OECD 442 D)
- *in vitro*: Activity of dendritic cells – h-Clat

**Systemic Toxicity**
- Assessment of starting dose for acute systemic toxicity using neutral red uptake
- Target organ toxicity with primary and cell lines from various organs
- Phototoxicity – Balb/3T3 neutral red uptake with artificial UV-light (OECD 432)
- Phototoxicity using human skin equivalents
- Immunotoxicity: Lymphocyte blastogenesis, Natural Killer cell activity, Macrophage function
- Determination of Cytokine release of Peripheral Blood Mononuclear cells

**Reproductive Toxicity/Endocrine Disruptor Activity**
- Embryonic mouse stem cell test
- Steroidogenesis assay using H295R cells (OECD 456)
- Androgen receptor binding assay using cytosol of prostate (OPPTS 890.1150)
- Estrogen receptor binding assay using cytosol of uter (OPPTS 1250)
- Aromatase assay using human supersomes (OPPTS 890.1200)
- Transcriptional estrogen receptor binding assay using HeLa cells (OPPTS 890.1300)
- Human skin equivalents (OECD 439)

**Carcinogenicity**
- Cell transformation assays (Bhas 42) and Syrian Hamster Embryo (SHE) assay

**Toxicokinetics – Barrier Systems**
- Dermal penetration using flow-through diffusion cells and human and pig isolated skin systems
- Intestinal penetration using CaCo-2 absorption models

**Toxicokinetics – Metabolism**
- Interspecies comparative metabolism, metabolic stability, metabolic profiling
- Selective human cytochrome P450 metabolism
- Human cytochrome P450 inhibition
- MDR-(P-glycoprotein) interaction assay
- Glucuronidation
- Ethoxyresorufin-o-deethylase activity
- Pentoxyresorufin-o-dealkylase activity
- Benzoyloxy-o-dealkylase activity

**Local Tolerance**
- Oral mucosal irritation using human reconstructed oral epithelium
- Vaginal epithelial irritation using human reconstructed vaginal epithelium
- Bladder epithelial irritation using human reconstructed bladder epithelium

**Performance Testing**
- Barrier efficacy test (human skin model)
- Lenitive efficacy test (human skin model)
- Wound healing efficacy (human skin model)
- Whitening efficacy (human skin model)

**Mechanistic Investigations**
- Reactive oxygen species: Catalase, Glutathionperoxidase, Glutathion, Thiobarbituric acid reactive substances, Superoxidedismutase
- DNA adduct determination
- Antikinetochore antibody staining (CREST) of micronuclei in mammalian cells

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**Global Services:**
- Toxicology & Pharmacology
- Immuno- & Bioanalytics
- Raw Materials
- Bio-/Pharmaceutical Product Testing (GMP)
- Microbiology
- Biocompatibility according to ISO 10993
- Professional Scientific Services

**Our Sites in Germany:**
- Eurofins BioPharma Product Testing Munich GmbH
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  D-82152 Planegg near Munich
- Eurofins Fintelmann & Meyer GMP GmbH
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**The largest network of harmonized bio/pharmaceutical GMP product testing labs worldwide.**

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