

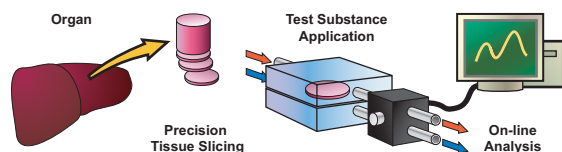
Test Applications in an Organotypic Environment

A Novel Test Concept for In Vitro Pharmacotoxicology

Organ-specific pharmacological screening with the **TAO** tissue-based test concept

The pharmaceutical industry is under constant pressure to improve their research and development productivity. New assay tools in the drug discovery process are expected to result in a greater number of drug candidates with a higher probability of success entering the pre-clinical and clinical trial stages.

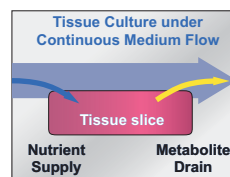
The **TAO** assay technology has been developed to pave a way to unprecedented opportunities in pharmacological candidate screening and toxicological testing. Our tissue-based test concept maintains in culture differentiated tissue, and retains in vitro the inherent cellular composition and organ-specific patterns of cell interaction.



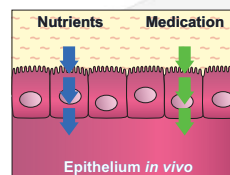
Employing the functional integrity of tissues for the in vitro assay design, targets the issue of physiological relevance at a new, unparalleled level. Choose the **TAO** tissue-based assay concept to discover a new way in drug screening.

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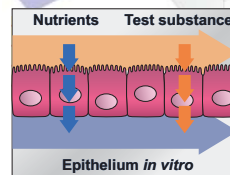
This is how **TAO** works



In the organism, tissues are supplied by the endogenous network of blood vessels, which deliver nutrients and oxygen and remove metabolites. In tissue culture, continuous medium flow assures nutrient supply and metabolite removal. The **TAO** culture concept is capable to maintain tissue in a differentiated state in vitro - for up to several weeks.



Many medications are administered via epithelial barriers (skin, gastrointestinal tract, vessel endothel), which influence the bioavailability of a drug and can cause problems of tolerance. Up to now, the respective properties of drug candidates could only be tested in animal experiments, or were discovered during clinical trials.



The **TAO** gradient culture concept makes it possible to simulate the polar substance uptake in epithelia. By design, the culture chamber volume is divided in two compartments, which allows to establish independent medium supplies and thus the polar application of test substances.

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TAO is ready for your business!



The principle and applicability of the **TAO** tissue-based test concept were successfully demonstrated in several research projects, and in a prevalidation pilot study. Assay parameters used so far include histology, apoptosis (ELISA), and the kinetics of selected marker enzymes.



The limited availability of physiologically relevant cells is a major restraint on cell-based assay technology. The tissue-based in vitro test concept completely circumvents this problem by employing and maintaining in culture differentiated tissue with the goal to retain the inherent cellular composition and organ-specific patterns of cell interaction.



The major goal of future development towards market application is the integration of automated, on-line analysis capability to follow parameter changes and metabolite kinetics in culture. We are currently looking for cooperations and business partnerships to conclude the development of the combined system.

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German and US Patents

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