MIMETAS

3D Blood-Brain Barrier Toxicity Assay

Human brain microvascular endothelial cells (HBMEC)

OrganoService

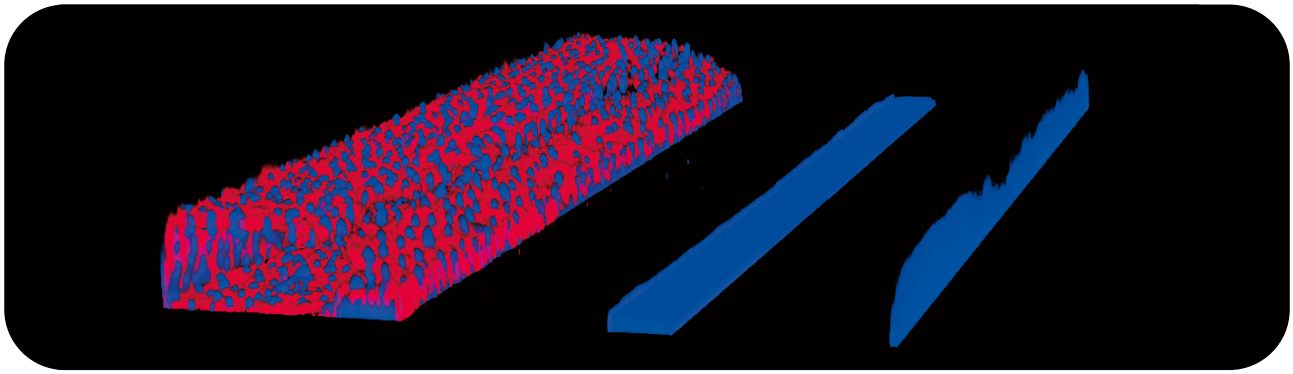
- **Kickstart drug toxicity studies in a physiologically relevant 3D human BBB model**
  Assess potential barrier-disrupting effects of your compounds in a perfusable 3D human brain microvascular endothelial model
- **Multiple time point measurements**
  High sensitivity of compound-induced barrier disruption with optimized time point measurements
- **Data reporting in one go**
  Receive a clear data report and raw data sheets
- **Robust and reproducible assay**
  Automated workflow ensures consistent performance and data quality
- **TEER evaluation under physiological conditions**
  Barrier integrity TEER data are obtained with the OrganoTEER®
- **Complement your BBB toxicity studies with additional drug permeability studies**
  Study transport kinetics of your compounds across the BBB with our OrganoService BBB Small Molecule Transport Assay

Grow. Learn. Discover.

About OrganoService

Blood-Brain Barrier Toxicity Assay

Profiling and screening of your compounds with a high-throughput barrier integrity assay on our established HBMEC BBB model.



Robust HBMEC BBB model in the OrganoPlate®

The role of the blood- brain barrier in drug development

The blood-brain barrier (BBB) ensures a homeostatic environment for the central nervous system (CNS) and is essential for brain function. When developing new therapies and assessing drug toxicity, on- and off-target BBB drug toxicity is a rate-limiting step, whereby assessing toxicity forms a critical part of the drug development quality control process. A common way of determining toxicity in the context of the BBB is via barrier integrity assessment, which up until now has been performed with 2D in vitro models that do not fully recapitulate key aspects of the BBB.

To assess the barrier in a sensitive andreliable manner, Trans Endothelial Electrical Resistance (TEER) measurements are considered the gold standard.

OrganoService Blood-Brain Barrier Toxicity Assay

To study the BBB in vitro and assess barrier integrity in a high-throughput manner, we developed a robust primary HBMEC BBB model (OrganoReady® BBB) combined with a validated fluorescent barrier integrity assay and usage of the OrganoTEER®, which rapidly measures the transepithelial electrical resistance (TEER) of 64 endothelial cultures at once. By offering this as an off-the-shelf service, we allow you to focus on your compounds directly, while our scientist focuses on the biology and experiments.

What will you get:

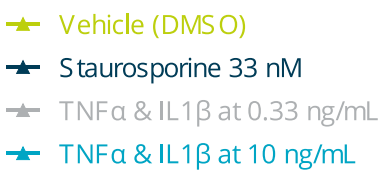
- **Screening of your compounds in a validated, physiologically-relevant BBB model**
- **Screening of up to 13 compounds in one concentration per OrganoPlate**
- **4 technical replicates and 3 control compound**
- **Raw and normalized TEER values in a clear data report**
- **Extend the compound screen with more plates, in case a larger screen is desired**

Results

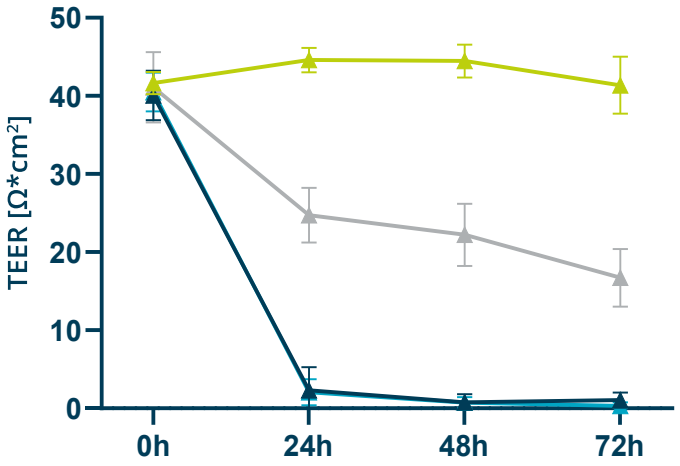
Blood-Brain Barrier Toxicity Assay

Raw TEER values

Concentration-dependent disruption of blood-brain barrier integrity



Blood-Brain Barrier Integrity



Service details

	Compound testing
Total compounds per plate	13
Number of concentrations/compound	1
Exposure	Apical
Number of technical replicates	4
Number of controls	3 (staurosporine, TNFα and vehicle/medium)
Analysis method	TEER
Assay time	2 days
Time points	0h, 24h, 48h
Data delivery	Raw & normalized TEER values
Data points/compound	12
Test article volume requirement	50 µL of 1,000X stock solution
Test article solvent	DMSO, PBS, Water
Turn-around time	4-6 weeks