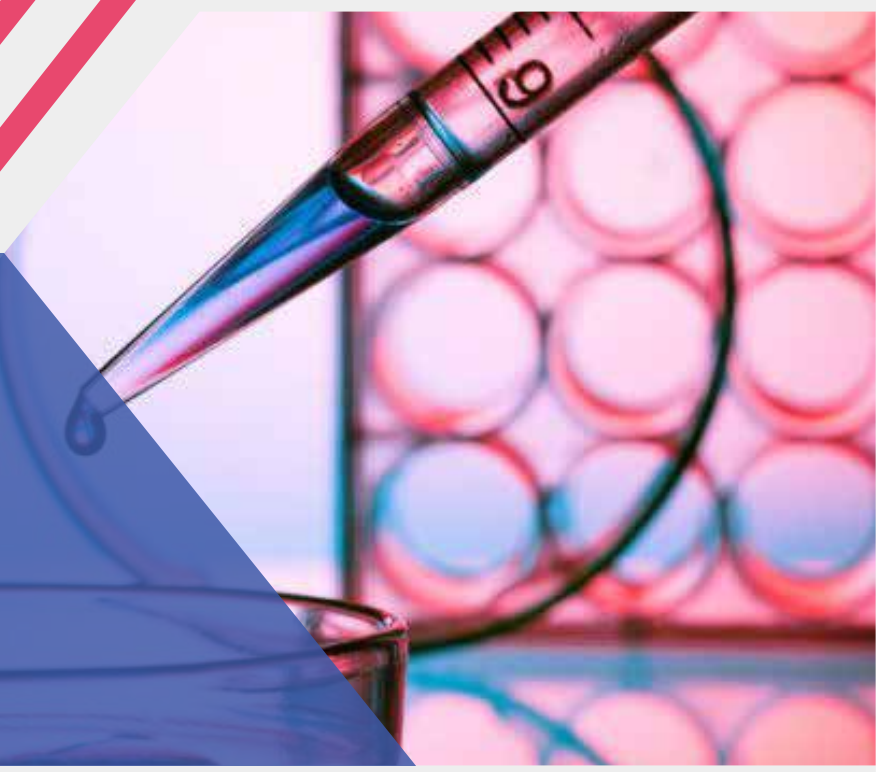
Creative Bioarray

In Vitro and *Ex Vivo* Permeability Study



Assess compound permeability to provide accurate predictions of *in vivo* absorption

Of many important features of drug candidates, permeability is an essential parameter to influence the absorption and distribution of a drug. To test permeability, the use of *in vivo* or *in situ* animal models raises unavoidable ethical concerns and presents a difficulty when a high-throughput screening test is needed. Therefore, *in vitro* studies have been increasingly expected to evaluate drug permeability.

Creative Bioarray provides *in vitro* permeability assay services to determine intestinal, blood-brain barrier (BBB) penetration or vascular permeability. Our experts are experienced working with permeability models. We ensure consistent and high-quality data with a fast turn-around time.

In vitro intestinal permeability models

Creative Bioarray provides a set of monolayer barrier permeability systems that can be time saving and cost-effective for your oral absorption, bioavailability evaluation, drug transporter, and drug-drug interaction studies.

- Caco-2 epithelial monolayer barrier
- P-gp overexpressed Caco-2 epithelial monolayer barrier
- Transporter silenced Caco-2 (BCRP, MDR1) epithelial monolayer barrier
- Intestinal epithelial tight junction barrier (T84, HT29, Caco-2, and HCT116)
- Mucus-producing intestinal epithelial monolayer barrier (HT29- MTX)
- MDCK/MDR1 monolayer barrier

Ex vitro intestinal permeability models

Creative Bioarray offers an *ex vivo* permeability assay using intestinal sacs to measure overall intestinal integrity and comparative transport of a specific molecule. The intestinal sacs will provide a way to calculate the apparent permeability of a molecule across the intestinal barrier or to examine regional epithelial barrier dysfunction using fluorescent-labeled dextrans.

In vitro blood-brain barrier permeability models

To expedite brain research and the R&D of novel drugs for various neurological diseases, we have established different *in vitro* BBB models. Our novel models use only primary human cells and include four key BBB cells: astrocytes, pericytes, brain microvascular endothelial cells (BMECs), and neurons.

- Monolayer BBB models (BMECs)
- Co-culture BBB models (BMECs–pericytes–astrocytes)
- Microfluidic models

With decades of operational experience, Creative Bioarray can provide the following analytical services based on our permeability models:

- Predict various permeability processes (paracellular, transcellular)
- Estimate different intracellular concentrations (membrane, cytosol, lysosome)
- Assess the impact of experimental variability on the predicted outcomes
- Analysis of measured *in vitro* permeability data

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