CDDI Focus on Technology: High throughput Parallel Artificial Membrane Permeability Assay (PAMPA)

**Instrument:** TECAN EVO 150 automated workstation, TECAN infinite 1000 pro microplate reader

**Screening Tools from Pion:** Double-Sink™ PAMPA, Gut-Box™ and PAMPA Evolution software

PAMPA is applied as an *in vitro* model of passive transcellular permeability. The Double-Sink PAMPA method uses an optimized mixture of phospholipids infused into lipophilic filter support which creates an artificial membrane. Such membranes immobilized on a filter are placed between a donor and acceptor compartments mimicking the cell barriers characteristic of gastrointestinal tract (GIT) or the blood-brain barrier (BBB). The GIT PAMPA will evaluate how the drug candidate might be absorbed across the gastrointestinal tract and the BBB PAMPA will predict the ability of a central nervous system (CNS)-targeting drug candidate for crossing the blood-brain barrier to reach its therapeutic receptors inside the brain.

Each drug candidate is introduced to the donor compartment. After 30-60' minutes incubation/stirring period using the Gut-Box, the concentration of drug in the donor and acceptor compartments is measured using UV spectroscopy.

- PAMPA proposes a fast and economical permeability screening of multiple drug candidates compared to cell based Caco2- or MDCK based screens, which need costly provision for cells.
- PAMPA implemented on the Tecan Freedom EVO 150 workstation (3 arms: 96 channels, 8-span liquid handler and robotic manipulator; plate reader: Infinite 1000 pro microplate reader) with fully automated data collection is capable of analyzing up to 600 samples per day.

**Selected References and Information**


**For More Information on Instrument Availability and Screening Please Contact:**
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