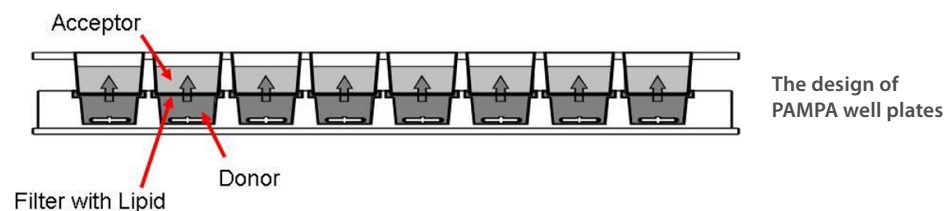


Parallel Artificial Membrane Permeability Assay

Pion Analytical Services offers Parallel Artificial Membrane Permeability Assay (PAMPA) analysis services to determine passive membrane permeability.

The Parallel Artificial Membrane Permeability Assay (PAMPA) is used to determine passive diffusion across an artificial lipid membrane impregnated onto a porous filter support. Passive diffusion is an important factor in determining absorption of orally administered compounds in the gastrointestinal tract (GIT), penetration of the blood-brain barrier (BBB), as well as general transport across cell membranes.



Depending upon the type of lipid and the setup used, the PAMPA assay can be predictive of gastrointestinal tract absorption (PAMPA-GIT), blood-brain barrier permeability (PAMPA-BBB) or other simulated membranes. Typically, PAMPA experiments are carried out in the early drug discovery phase to select lead compounds with promising oral bioavailability or brain penetration potential by cost-efficiently ranking candidates within large compound sets. The data generated by PAMPA can be used by medicinal chemists to guide structural modifications of discovery compounds to improve their in vivo characteristics.

PAMPA uses two disposable 96-well plates that are assembled into a "PAMPA sandwich". The top plate (acceptor plate) contains a porous filter at the bottom of each well which is placed on top of a second, donor plate. The filter is coated with a solution of lipid material to prepare the artificial membrane layer. The test compound solutions are added to pH-adjusted buffer in the wells of the donor plate and acceptor buffer solution is added to each well of the acceptor plate. The acceptor plate is placed on top of the donor plate allowing the donor solution to come into contact with the filter support. The plates are then incubated at room temperature, in a humid environment, for up to 4 hours depending on the assay conditions. Each donor well can be individually stirred using magnetic stir discs. Standards solutions are prepared for each test compound in order to calculate the permeability. The donor and acceptor samples are quantified by UV plate reader. The experimental analyte recovery is calculated using both donor and acceptor compartment concentrations and can also be used to determine membrane retention percentage.



A typical PAMPA setup with 96-well plates containing built-in stir bars. The top and bottom chambers are separated by lipid-coated filter membranes.

Why Use Pion

Did you know that Pion was the very first company to commercialize a PAMPA offering in 1998, and we are the true pioneers in PAMPA development and theory? The Pion PAMPA product has proven correlation to human permeability. The legacy of Pion's PAMPA technology is widely referenced in scientific publications and in the industry book: *Absorption and Drug Development, Solubility, Permeability and Charge State*, Avdeef, Alex. Hoboken, New Jersey, Wiley and Sons, 2012.



KEY DELIVERABLES

A full study report is provided. Reports include: sample and customer details, the apparent permeability coefficient for each compound (P_{app}) and statement of methodology.

ANALYTICAL SERVICES PART NUMBERS

PAMPA Analytical Services Part Numbers

Analysis	Part #	Details
Multi sample GIT PAMPA screening Aqueous	182O1O1	Batch of 10 samples 200 μ L / 10mM stock
Multi sample GIT PAMPA screening Excipients	182O1O4	Batch of 10 samples 1000 μ L / 10mM stock
Multi sample BBB PAMPA screening Aqueous	182O1O2	Batch of 10 samples 200 μ L / 10mM stock



Analytical Services

With analysis that can be tailored to your specific application, Pion's Analytical Services provides the vital information missing from your research.

