Parallel Artificial Membrane Permeability Assay (PAMPA) Platform

PAMPA is a high-throughput platform for assessing drug permeability using artificial membranes that mimic drug uptake under gastro-intestinal conditions (GIT), across the blood-brain barrier (BBB). It provides robust, reliable, and relevant results that support preformulation screening, and for the evaluation/comparison of complex formulations.

PAMPA enables efficient evaluation of the passive permeability of APIs and the absorption potential of simple or complex formulations. By effectively mimicking many of the properties of biological membranes it can minimize reliance on expensive in vivo/in situ studies reducing the time and cost of formulation optimization. Double Sink PAMPA allows formulators to simultaneously study how excipients impact the solubility and permeability of APIs, to accelerate screening activities.

With a 96-well plate format amenable to automation and exclusive, high-performance GIT, BBB plates that robustly simulate lipid conditions, Pion's PAMPA allows users to:

- Assess permeability in the GIT, across the BBB or depending on the artificial membrane chosen: GIT lipid for gastrointestinal permeability, BBB lipid for blood-brain barrier permeability.
- Conduct comparative flux assays to support smart excipient and solvent selection, and to rank order formulations and drug candidates on the basis of permeability.
- Apply robust and reliable protocols with proven clinical relevance to simulate different environments (brain, GIT).
- Simply and easily screen the permeability of newly discovered APIs.
- Conduct manual testing quickly and efficiently or use robotic platforms to maximize throughput.
- Investigate the solubility and permeability of APIs with a single assay to provide an early assessment of excipient influenced and pH-dependent GIT absorption.

Parallel Artificial Membrane Permeability Assay (PAMPA) Kits

Gasto Intestinal Tract - Blood Brain Barrier - Transdermal Penetration
Pion PAMPA can be used for discovery, preformulation excipient screening and comparative flux assays. Measuring concentration on both sides of a bio-mimetic membrane improves the assessment of the absorption potential and provides more realistic IVIVC predictions.
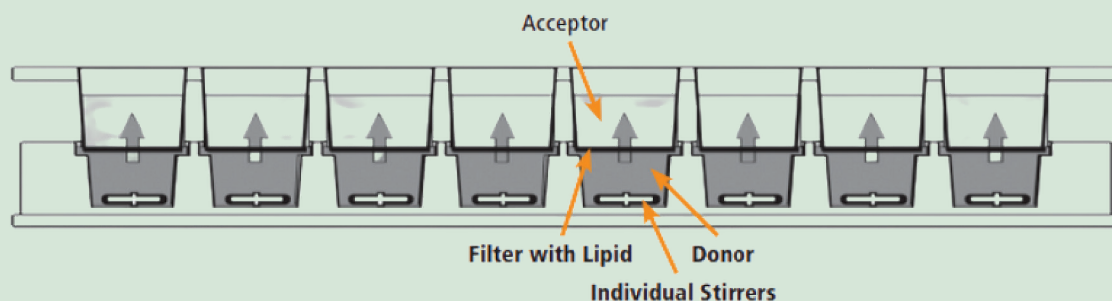
PRODUCT CONFIGURATIONS

GIT - A 96-well plate set-up to simulate permeability across the gastro-intestinal tract in humans in vitro. A GIT PAMPA sandwich plate consisting of a 96-well donor plate containing PRISMA HT buffer pH adjusted to intestinal conditions, a membrane layer coated with GIT lipid and a 96-well acceptor plate filled with acceptor sink buffer (ASB) to simulate GIT permeability conditions.

BBB - A 96-well plate set-up to simulate permeability across the blood-brain barrier in humans in vitro. A BBB PAMPA sandwich plate consisting of a 96-well donor plate containing PRISMA HT buffer pH adjusted to pH 7.4, a membrane layer coated with BBB lipid and a 96-well acceptor plate filled with brain sink buffer (BSB) to simulate BBB permeability conditions.

OPTIONAL ACCESSORIES

TempPlate - A separate unit which controls and maintains temperature during a PAMPA assay ensuring bio-relevant temperatures throughout an experiment.

Gutbox - A device which allows the user to add magnetic stirring disks into the Donor compartment of the 96-well PAMPA sandwich in order to stir inside the PAMPA set-up and speed up assay timeframe.

CONSUMABLES

PRISMA HT Buffer
ASB or BSB Buffer
GIT or BBB Lipid
GIT, BBB sandwich plates
High sensitivity ½ area UV plates
12 column low profile reservoir
Deep well plate
Formulation plate
Support plate

DIMENSIONS AND WEIGHT

	Height	Width	Depth	Weight
Gutbox	19 cm	20 cm	36 cm	4.3 kg
TemPlate - Main unit	7 cm	12 cm	19 cm	0.8 kg
TemPlate - Screen	7 cm	11.5 cm	10.5 cm	0.5 kg

Pion

Pion stands behind the science