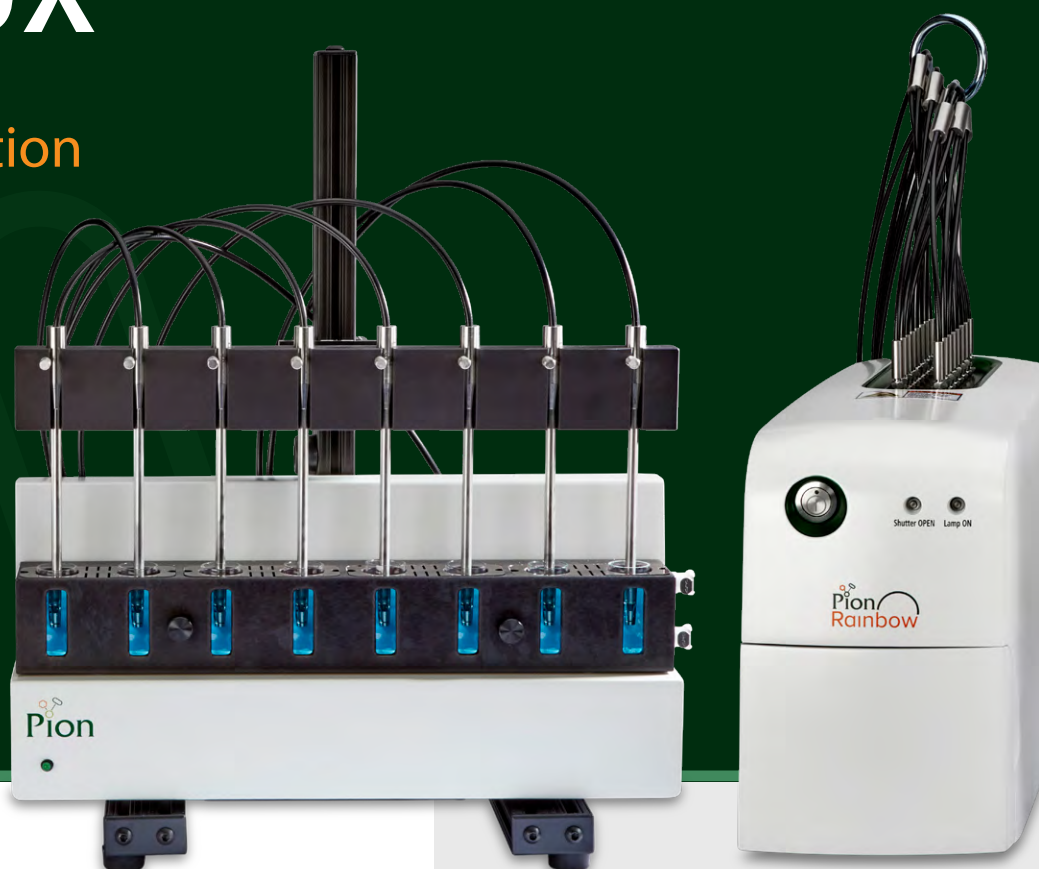




MicroFLUX

Dissolution-permeation
testing for
small volumes

Pion's MicroFLUX
and Rainbow R6



Pion's MicroFLUX™ is a small volume dissolution-permeation system that measures how quickly an active pharmaceutical ingredient (API) dissolves and permeates a lipid-coated, artificial membrane. Designed for early-stage rank ordering of oral drug formulations, the MicroFLUX enables a more accurate prediction of *in vivo* oral absorption than dissolution testing alone.

The system includes the Rainbow R6™ fiber optic spectrometer for real-time data collection, and a small volume dissolution bath with dedicated glass vessels for simultaneous measurement of dissolution and permeation.

By understanding both dissolution and absorption potential, you can accelerate formulation development, derisk outcomes, and predict *in vivo* performance with confidence.



Go Beyond Dissolution



Automate Workflows

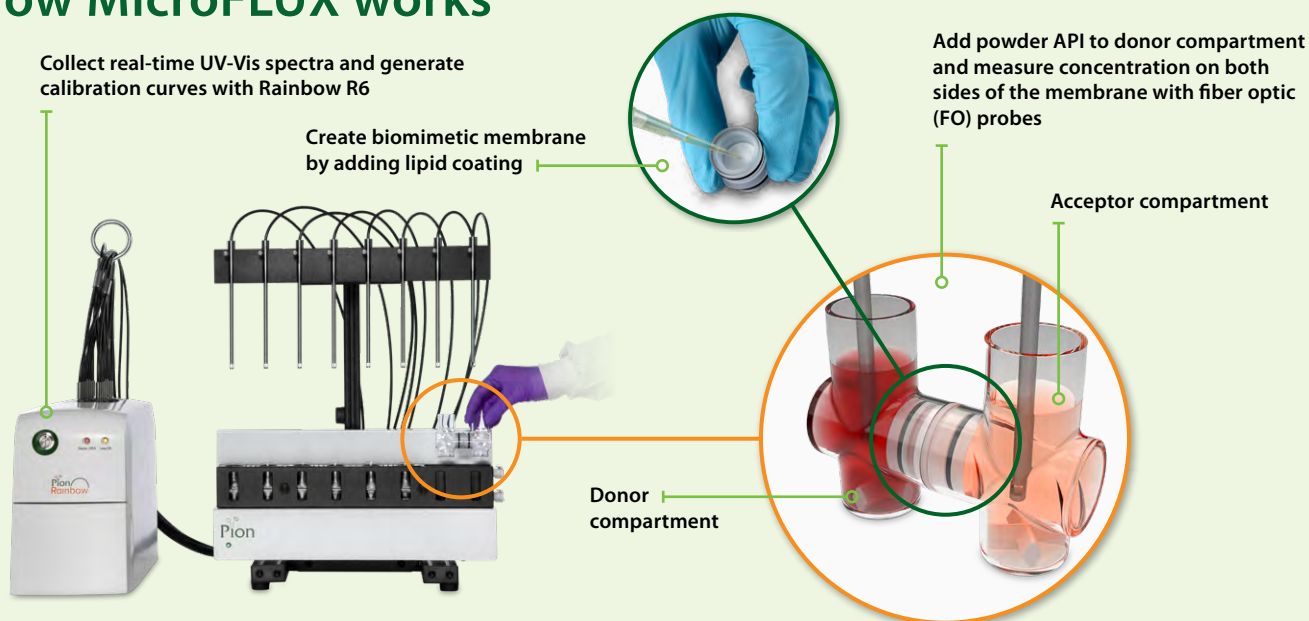


Conserve Valuable API

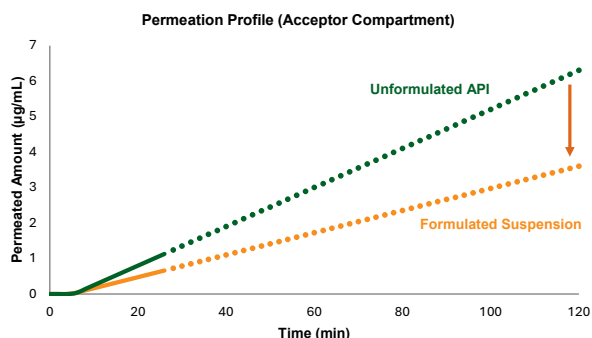
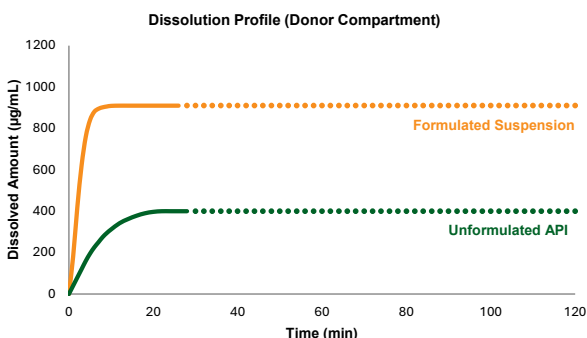


Unlock Advanced Insights

How MicroFLUX works



Capture dissolution and permeation data in real-time as the API moves across the membrane to differentiate formulations by their true absorption potential rather than dissolution alone.



The proprietary lipid-coated artificial membrane and acceptor sink buffer establish a biometric model of passive intestinal transport, incorporating unstirred water layer effects. The membrane technology, adapted from Pion's PAMPA platform, supports real-time permeation monitoring under biorelevant conditions.

Applications

- Early-stage rank ordering
- Excipient screening
- Formulation characterization
- Evaluation of food effect on solubility and absorption
- Supersaturation analysis

In Vitro + In Silico: Predictive Modeling

The MicroFLUX can be used with Pion's Predictor software to provide biorelevant absorption insights and predict *in vivo* formulation performance. Predictor software applies the mechanisms of the Gastrointestinal Unified Theoretical (GUT) framework* to convert *in vitro* dissolution-permeation data to predictions of *in vivo* oral absorption and percent fraction absorbed (FA%).

*Sugano, K. *Biopharmaceutics Modeling and Simulations: Theory, Practice, Methods, and Applications*; John Wiley & Sons, Inc.: Hoboken, NJ, USA, 2012.



Instrument comes with

- Rainbow R6 Fiber Optic Spectrometer with probes
- Interchangeable tips with variable path-length to facilitate measurements in turbid solutions or for weakly absorbing compounds
- MB8 small-volume dissolution bath with dedicated FLUX heat block (heater sold separately)
- 24 mL glass dissolution-permeation vessels
- AuPRO™ Software for instrument control and data collection

Dissolution Portfolio	
Configuration	Media Volumes
microDISS Profiler™ (Rainbow R6 and MB8)	2 – 20 mL
miniDISS Profiler™ (Rainbow R6 and miniDT)	40 – 250 mL
DissoSpec™ (Rainbow R6 and integrates USP Dissolution bath)	USP Compendial volumes

Dissolution and Absorption Portfolio	
Configuration	Media Volumes
MicroFLUX™ (Rainbow R6 and MB8 with MicroFLUX vessels)	16 – 20 mL
MiniFLUX™ (Rainbow R6 and miniDT with MiniFLUX vessels)	180 – 250 mL
BioFLUX™ (Rainbow R6 and external USP II bath with stirring unit and BioFLUX vessels)	200 – 500 mL
MacroFLUX™ (Rainbow R6 and external USP II bath with stirring unit and MacroFLUX vessels)	800 – 1,000 mL

Consumables (to be ordered separately)

- Single-use PVDF membranes
- Acceptor sink buffer
- GIT Lipid
- Single-use, plastic dissolution-permeation vessels with pre-attached PVDF membranes (optional)

Rainbow R6

The Rainbow R6 Dissolution and Permeation Monitor is an *in-situ* fiber optic UV-VIS spectrometer, measuring real-time dissolution and permeation as fast as every 2 seconds. Equipped with up to eight independent fiber-optic channels the Rainbow R6 provides high accuracy and resolution in concentration and % dissolved measurements.

