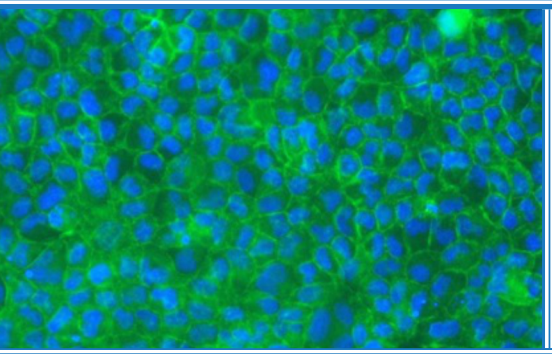
ReadyCell introduces PreadyPort-BCRP

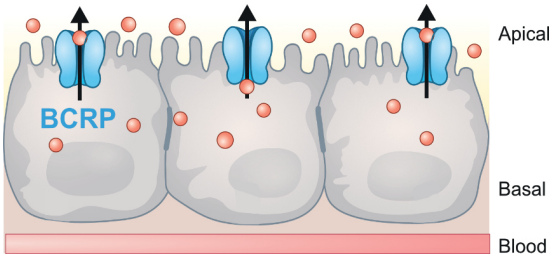


PreadyPort-BCRP is a cell-based assay for evaluating carrier-mediated transport in preclinical drug testing. It is delivered at room temperature in a semisolid shipping medium in Transwell-24 insert plates. The plate contains differentiated Mardin Darby Canine Kidney Type II (MDCKII) cell monolayers overexpressing the Breast Cancer Resistance Protein (BCRP) and/or the empty vector, according to the assay requirements.

PreadyPort-BCRP applications

The *BCRP*-expressing *MDCKII* cells model net drug efflux in expressed organs, identifying:

- BCRP substrates, inhibitors and inducers
- BCRP transporter-based drug-drug interactions (concomitantly administered drugs)
- Assay drug permeability by passive diffusion through a physiologically relevant barrier



The BCRP efflux transporter is localized in the apical cell membrane of barrier tissues (e.g intestine, blood-brain barrier (BBB), placenta, and liver canalicular membrane) and excretory organs (bile and kidney) pumping compounds out of the cells. Substrates and inhibitors of BCRP include a wide range of clinically important and structurally diverse drugs and endogenous molecules[1,2].

Four simple steps to use PreadyPort-BCRP

#1 Receive	#2 Liquefy	#3 Apply	#4 Assay
Ready-to-use Cell Barrier	Liquefying of Solid Shipping Medium	Incubation with Test Compound	Assessment of Permeability/Transport End Point

- Available on demand, adaptive to project schedule
- Worldwide room temperature shipments thanks to proprietary technology
- Ready-to-use format, reducing costs and easing the assay procedure
- Highest quality for a perfect replicability
- Adaptable to automation
- Specialized support from an experienced team

Quingcheng M and Jashvant DU. Role of the breast cancer resistance protein (BCRP/ABCG2) in drug transport-an update, 2015, AAPS J 17:65-82.
Feng B et al. Validation of human MDR1-MDCK and BCRP-MDCK cell lines to improve the prediction of brain penetration, 2019, *J Pharm Sci*, 108:2476-2483.

C/ Baldiri Reixac, 10
08028 Barcelona
www.readycell.com

Experimental Data

Apparent Permeability (P_{app}) values and efflux ratios (ER) for the BCRP substrates, prazosin and dantrolene, in the absence/ presence of Ko143, a reference inhibitor. Assays were performed after exposing *BCRP*-overexpressing cells (**PreadyPort-BCRP**) and those expressing the empty vector (**PreadyPort WT**) to the shipping medium during a 4-day period and a subsequent 72-h recovery in fresh culture medium.
These data are the result of three independent experiments.

■ **P_{app} A-B** ■ **P_{app} B-A**

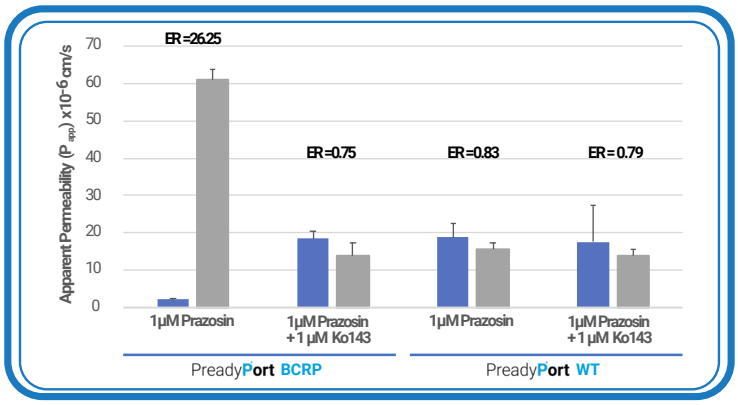


Figure 1. Prazosin secretory transport.

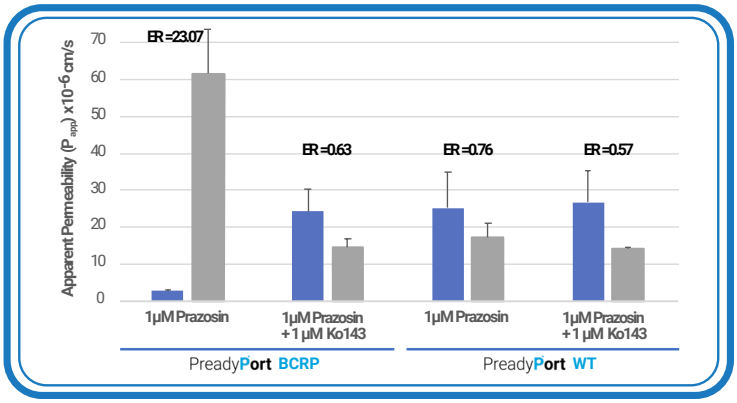


Figure 2. Prazosin secretory transport (batch-to-batch variation).

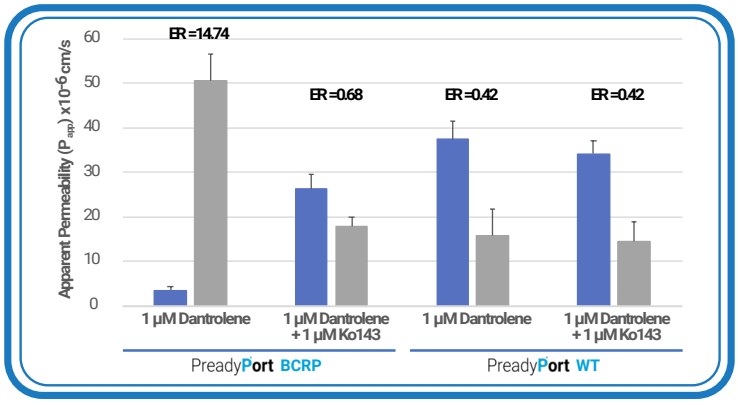


Figure 3. Dantrolene secretory transport.

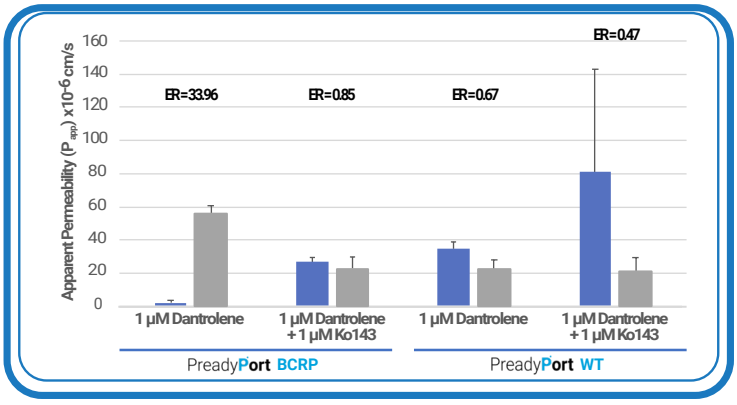


Figure 4. Dantrolene secretory transport (batch-to-batch variation).

Quality Controls

Pre- and post-assay quality assessments (TEER and Lucifer Yellow (LY), respectively) were performed to evaluate the cell barrier integrity of PreadyPort. TEER measurements were obtained 72 h after cell recovery from the shipping medium, while LY paracellular absorption was carried out after the sample permeability test.

■ **PreadyPort WT** ■ **PreadyPort BCRP** ■ **LY Permeability** ● **LY Flux**

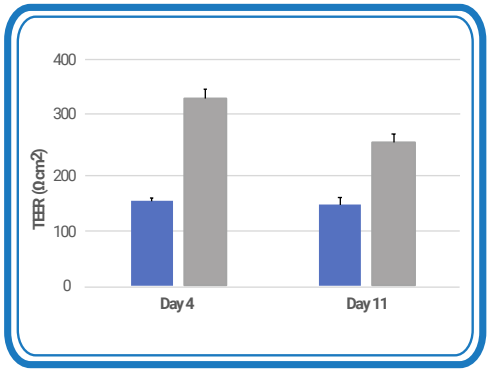


Figure 5. Changes in membrane integrity throughout the PreadyPort manufacturing process. *These data are the result of 3 different batches.*

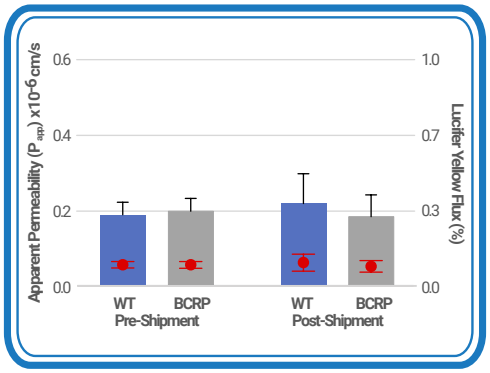


Figure 6. Lucifer Yellow paracellular permeability (P_{app}) values during PreadyPort shipment. *These data are the result of 3 different batches.*

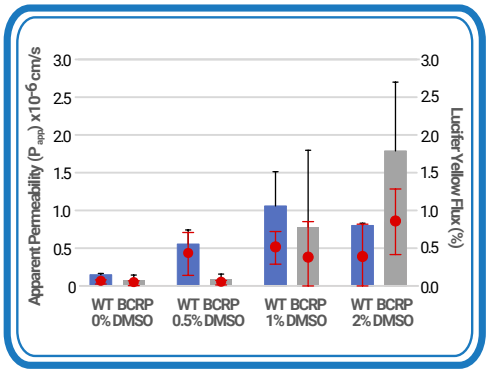


Figure 7. Effect of DMSO on barrier integrity of PreadyPort cell monolayers. *These data refer to a single experiment in triplicates.*

BCRP - Regulatory Requirements

Recommendations for identifying BCRP substrates and inhibitors are outlined by the 2020 FDA Guideline and recommended for consideration according to the 2012 EMA Guideline.