

FDA-CRCG Workshop on Implementing FDA's IVPT Guidance Recommendations: A Step-By-Step Illustration

Public Workshop
April 29-30, 2025

Day 1 Session 3: Group Activity

Drug product: Tanasone topical cream, 1%

Indication: plaque psoriasis

MW: 250

Log P: ~ 4.5

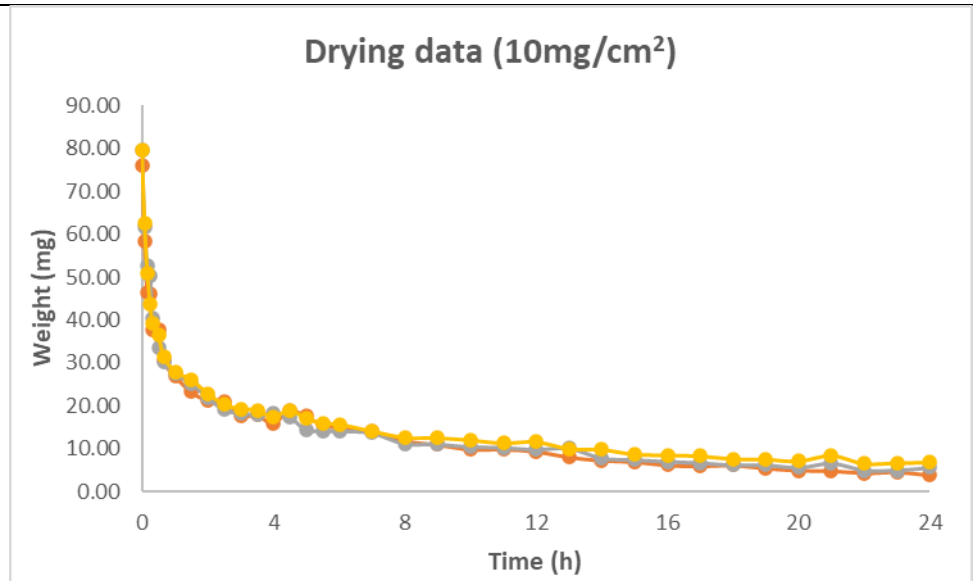
Pka: ~ 9

Solubility:

- DMSO - 50 mg/mL
- Ethanol -10 mg/mL
- Water Insoluble

Chromatographic method: LC

Chromatographic detection: UV

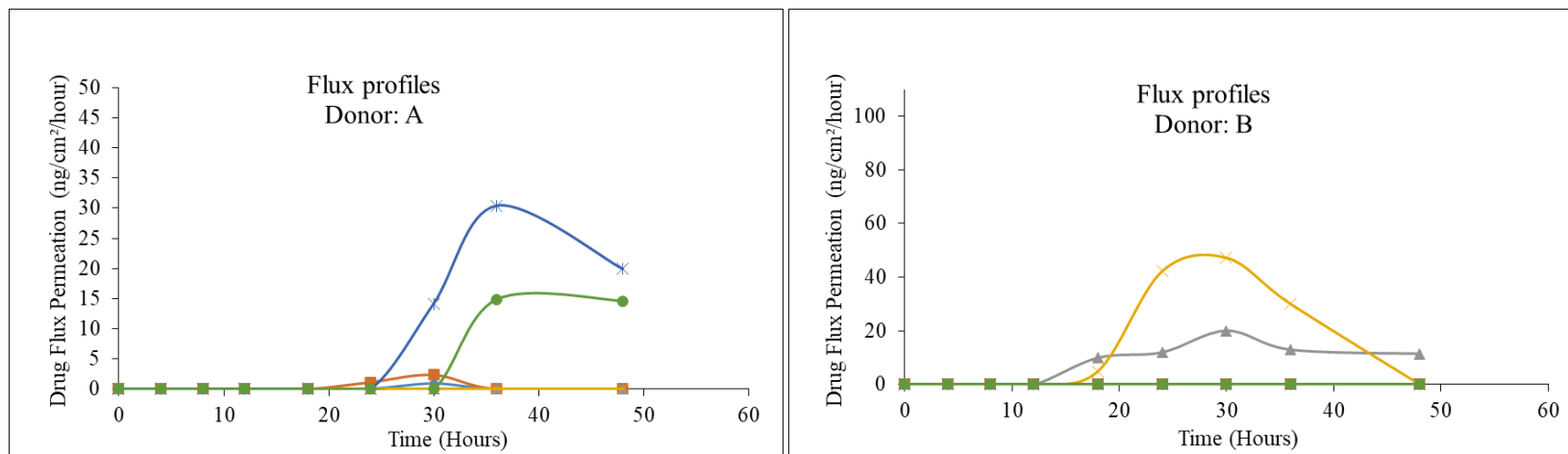


1st activity: Designing IVPT method development studies:

Method parameters	Your proposal
Analytical method-Choice of instrumentation and target for sensitivity	
Receptor solution composition	
Tests you would conduct using the receptor solution before conducting the first IVPT study	
Choice of equipment and cells	
Type/source of skin	
Methodology for barrier integrity assessment	
Dose amount of the drug product to be used in the first IVPT study	
Dose application technique	
Study duration	
Dose duration	
Sampling volume and sampling frequency	

2nd activity: Optimizing the IVPT method based on the results of the first study

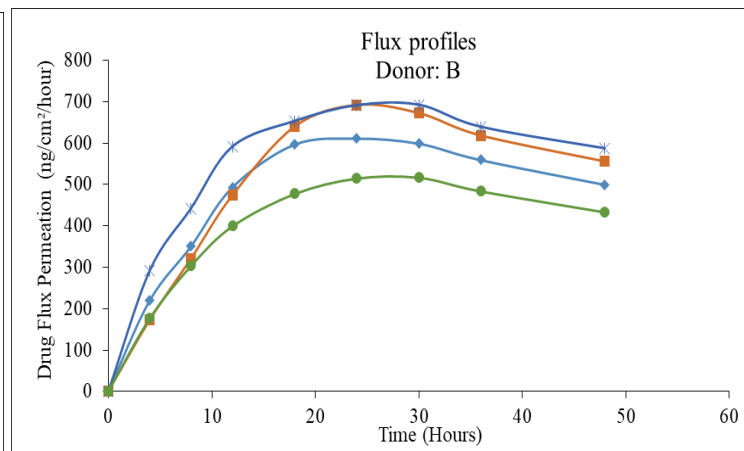
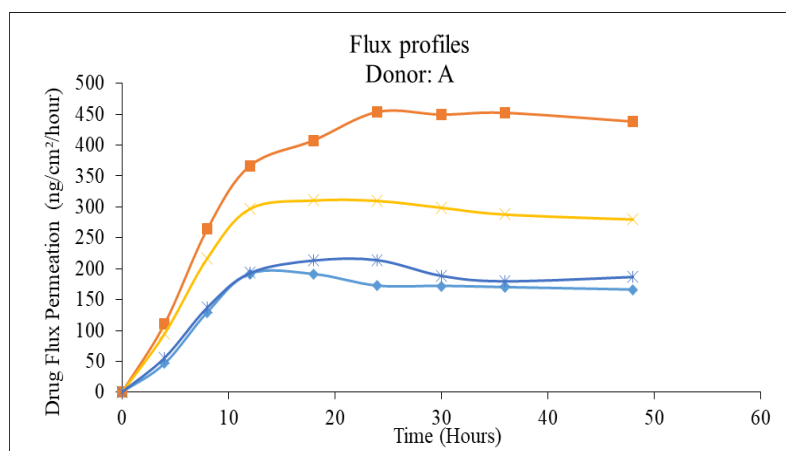
Scenario 1: IVPT study with 2 donors and 4 replicates (Dose 10mg/cm²)



What would you change and why for each scenario?

Method parameters	Your proposal
Analytical method-Choice of instrumentation and target for sensitivity	
Receptor solution composition	
Tests you would conduct using the receptor solution before conducting another IVPT study	
Choice of equipment and cells	
Type/source of skin	
Methodology for barrier integrity assessment	
Dose amount of the drug product used	
Dose application technique	
Study duration	
Dose duration	
Sampling volume and sampling frequency	

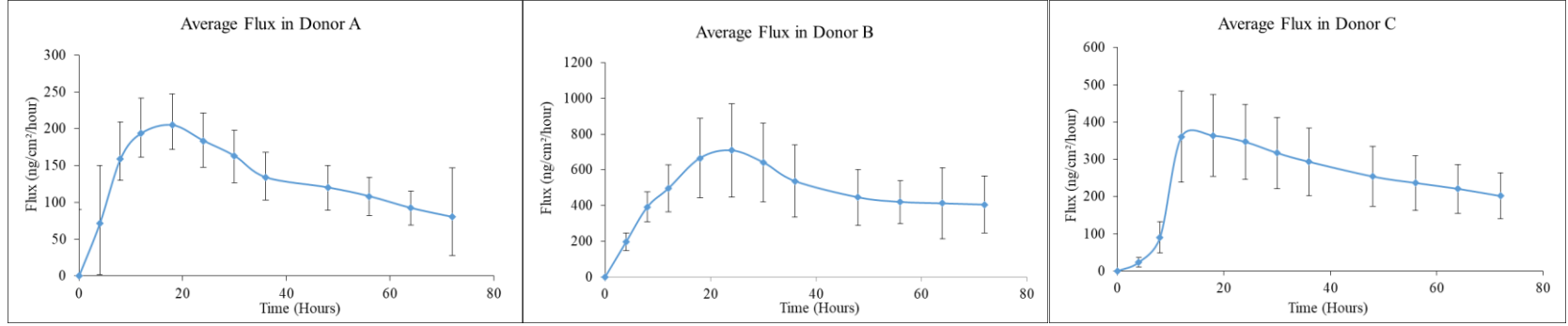
Scenario 2: IVPT study with 2 donors and 4 replicates (Dose 10mg/cm²)



What would you change and why?

Method parameters	Your proposal
Analytical method-Choice of instrumentation and target for sensitivity	
Receptor solution composition	
Tests you would conduct using the receptor solution before conducting another IVPT study	
Choice of equipment and cells	
Type/source of skin	
Methodology for barrier integrity assessment	
Dose amount of the drug product used	
Dose application technique	
Study duration	
Dose duration	
Sampling volume and sampling frequency	

Examples of Optimized IVPT profiles from Method Development:



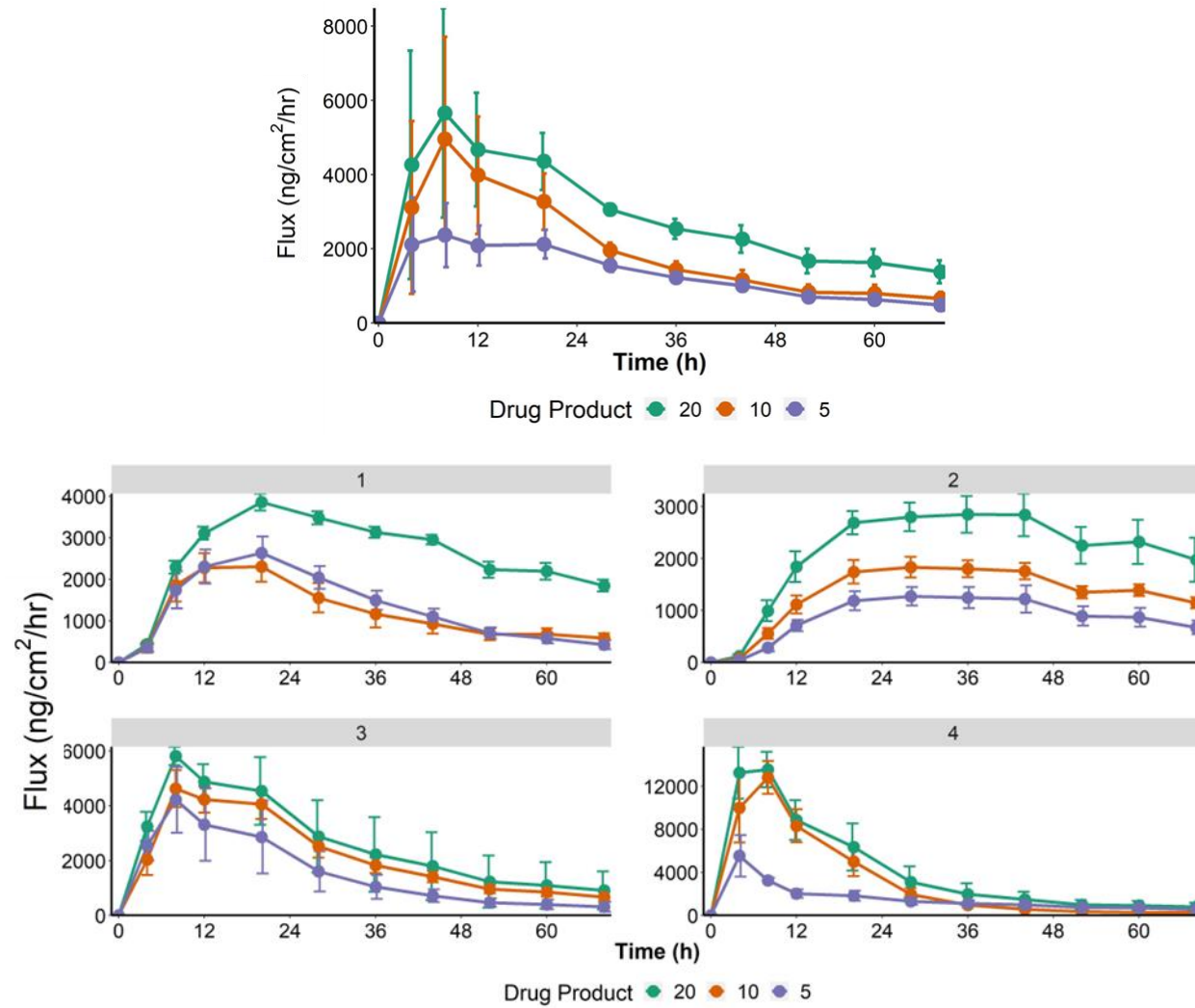
3rd activity: IVPT method validation

Sensitivity study

Method parameters	Your proposal
Analytical method-Choice of instrumentation and target for sensitivity	Decided based on 2 nd activity until an optimum method is identified
Receptor solution composition	
Tests you would conduct using the receptor before conducting the first IVPT study	
Choice of equipment and cells	
Type/source of skin	
Methodology for barrier integrity assessment	
Dose amount of the product used in first IVPT	
Dose application technique	
Study duration	
Dose duration	
Sampling volume and sampling frequency	
Strategy for sensitivity study	
Selection of dose for sensitivity study	

Based on profiles for the sensitivity study, would you consider your method to be sensitive? Why or why not? What would you do next?

(Data are shown as top: the average flux of donor in four donors $\pm$ SE; bottom: the average flux of four replicates in each donor $\pm$ SD for three doses of 5, 10, and 20 mg/cm²)

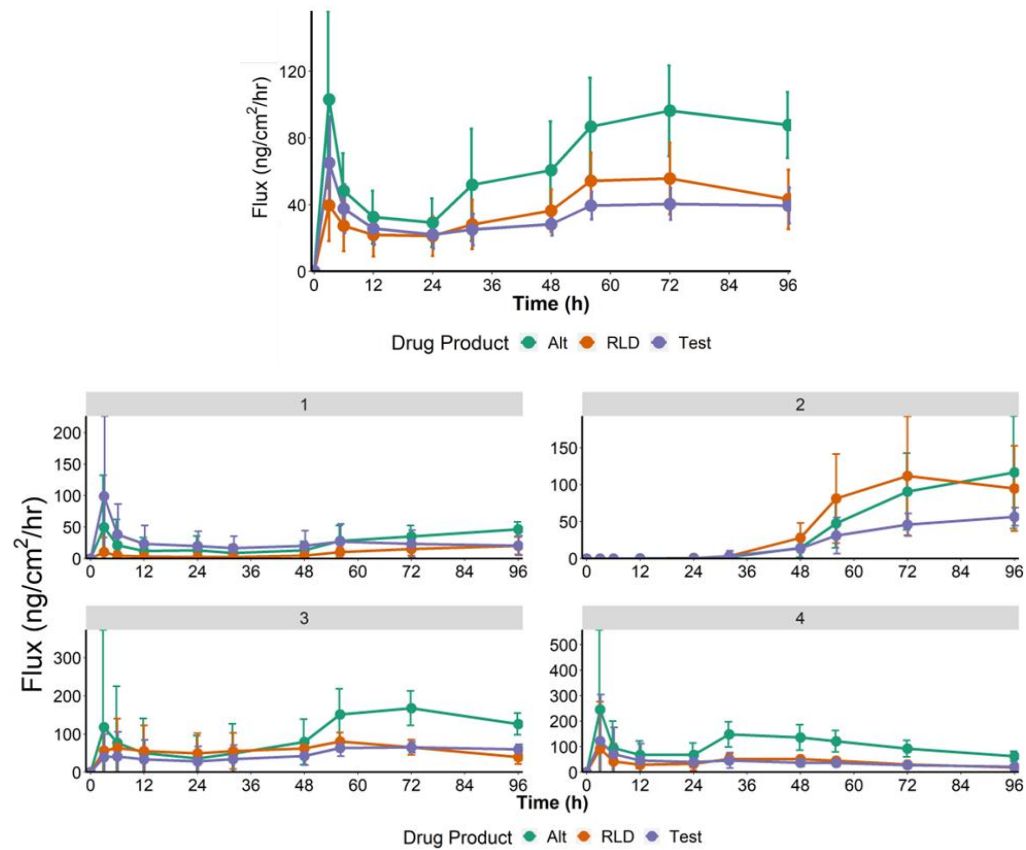


Selectivity study

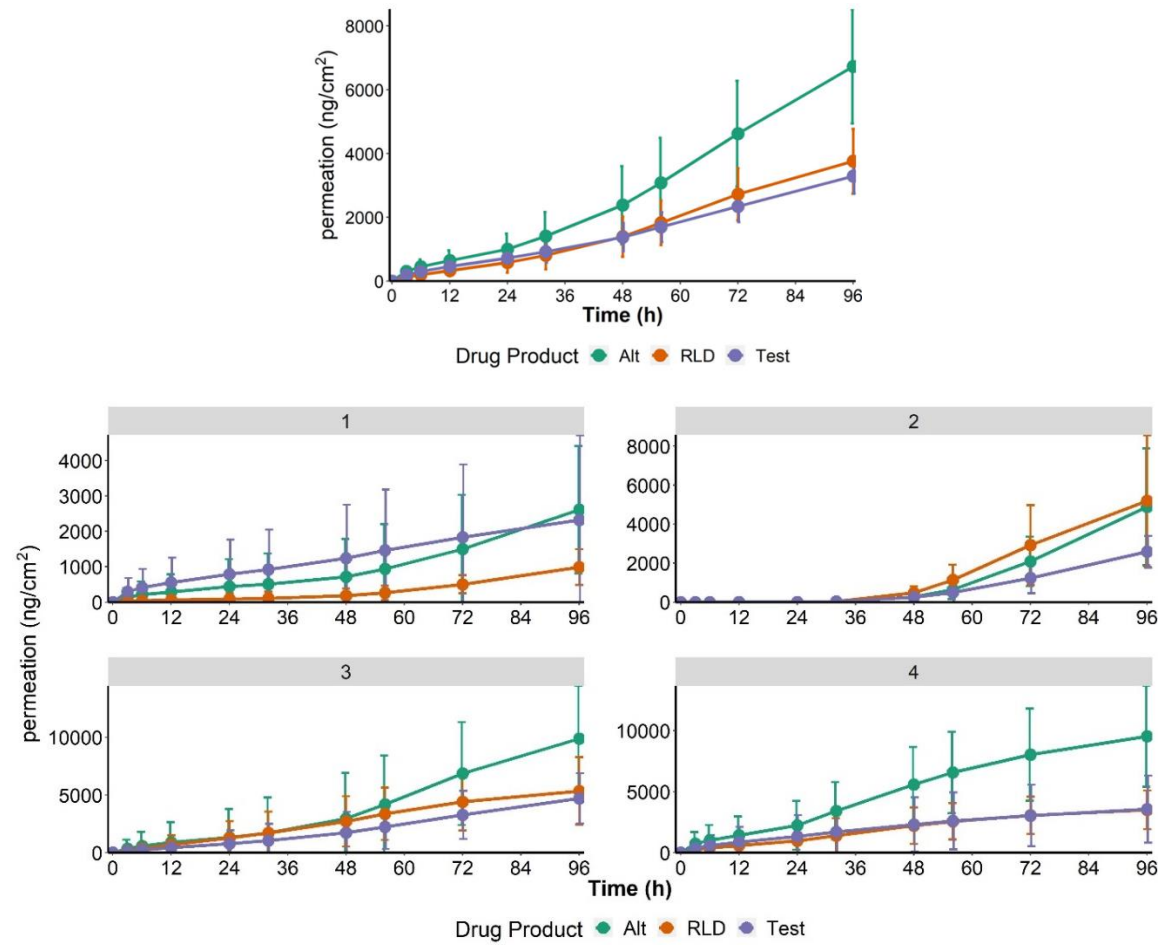
Strategy for selectivity study	
Selection of product for selectivity study	

Based on profiles for the selectivity study, would you consider your method to be selective and discriminative? Why or why not?

(Data are shown as top: the average flux of drug in four donors $\pm$ SE; bottom: the average flux of four replicates in each donor $\pm$ SD for RLD, Test product and Altered formulation)

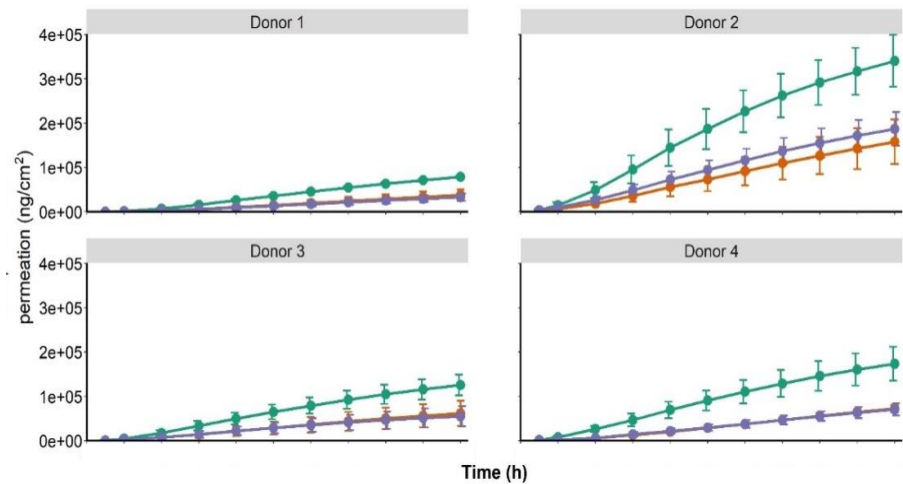
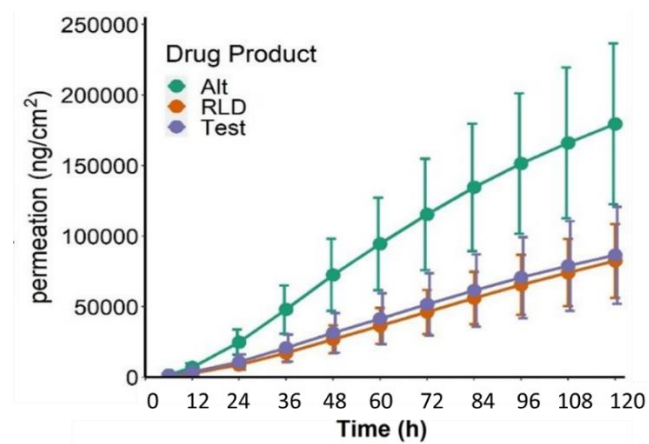
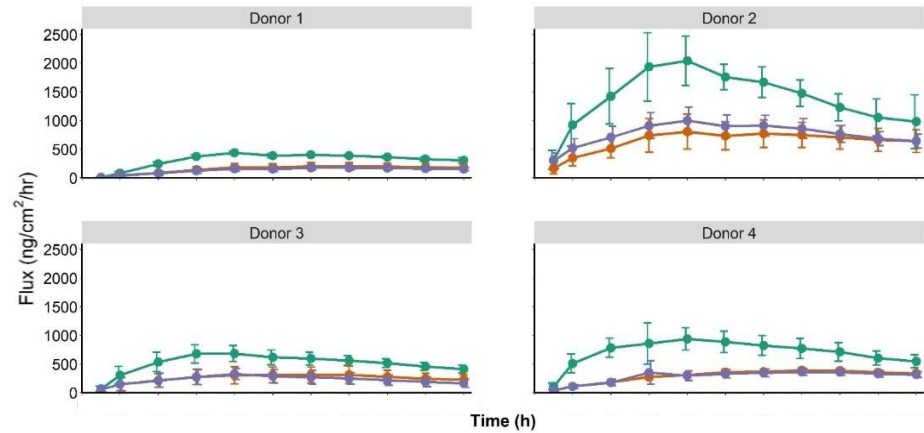
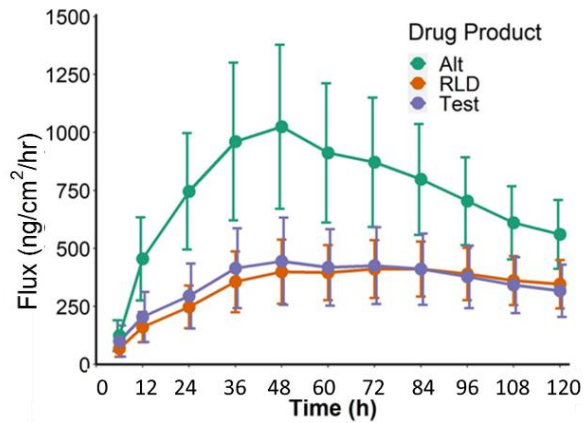


(Data are shown as top: the average cumulative permeation of drug in four donors $\pm$ SE; bottom: the average flux of four replicates in each donor $\pm$ SD for RLD, Test product and Altered formulation)



Example of an acceptable selectivity profiles

(Data are shown as top: the average cumulative permeation of drug in four donors $\pm$ SE; bottom: the average flux of four replicates in each donor $\pm$ SD for RLD, Test product and Altered formulation)



4th activity: The drug product is also marketed as a topical ointment (petrolatum-based ointment). What would you change about the IVPT method?

Method parameters	Your proposal
Analytical method-Choice of instrumentation and target for sensitivity	
Receptor solution composition	
Tests you would conduct using the receptor solution before conducting the first IVPT study	
Choice of equipment	
Type/source of skin	
Methodology for barrier integrity assessment	
Dose amount of the product used in first IVPT	
Dose application technique	
Study duration	
Dose duration	
Sampling volume and sampling frequency	