BCS-BASED STUDY SUMMARY AND FORMULATION TABLES

Table 1. Method Validation for Solubility Testing

Information Requested	Analyte 1
Bioanalytical method validation report location	
Study Report Number	
Analyte	
Internal standard (IS) (if applicable)	
Method description	
Limit of quantitation	
% recovery (and %CV) at each concentration tested (if applicable)	
Average recovery of IS (%) (if applicable)	
Standard curve concentrations (units/mL)	
QC concentrations (units/mL)	
QC precision range (%)	
QC accuracy range (%)	
Stability (hrs) (if applicable)	
Dilution integrity (if applicable)	
Selectivity	
Stability Indicating for the testing period? Y/N	

Table 2. Solubility Data for (Drug Name) in Different Buffered Media at (pH range)

Sr. No.	Buffer	Volume	Mean Drug solubility	Initial Drug Concentration used for solubility	pH after Solubilization	Number of Replicates (n=)	SD	%RSD
1								
2								
3								
4								
5								
6								
7								

Table 3. Pivotal Permeability Study Information

Study No.	
Method (i.e. in vivo mass balance/absolute BA/intestinal permeability)	
Rationale for method selection	
Study Title	
Study Objective	
Permeability Study Site & Address	
Analytical Site & Address	
Study Dates	

Table 4. Materials and Methods for Validation of Permeability Study

Description	
Reagents & Materials	
Cell Culture	
Permeability Assay Buffer (PAB)	
Quality Control of Cell Monolayers	
Permeability Assay	
Analytical Methods for Test Compounds	
Permeability and Recovery Calculation	

Table 5. Permeability Validation Protocol for Each Model Compound

Test Compound	Dosing Concentration (μM)	Donor Sampling Time Points (min)	Receiver Sampling Time Points (min)

Table 6. Standard Operating Procedures*

SOP No.	Effective Date of SOP	SOP Title

*For all tests and their method validation studies conducted to support the current BCS-based waiver request (e.g., permeability, solubility, dissolution, gastric stability tests, etc.)

Table 7. Permeability Study Validation Summary Data: Permeability Coefficients, % Recovery for Model Compounds

Model Compound (Minimum 20 Compounds)	Receiver Sampling Time Points (min)	Donor Sample Time Points (if different) (min)	Conc (μM)	Papp (10^{-6} cm/s)	%SD	% Recovery	R^2	Permeability Class	Reference

Table 8. Analytical Method Validation (For Pivotal Permeability Study)

Study No.			
Study Title			
Study Objective			
Analytical Site			
Analytical Site Address (Permeability Lab)			
Analytical Site Address (Bioanalytical Lab)			
Study Dates			
Information location			
Analyte name			
Internal Standard			
Analytical Method			
Standard curve range			
Limit of quantitation			
Average recovery of Drug from Top Chamber (%)			
Average recovery of Drug from Bottom Chamber (%)			
Average recovery of IS from Top Chamber (%)			
Average recovery of IS from Bottom Chamber (%)			
QC concentrations (units/mL)			
QC Intraday precision range (%)			
QC Intraday accuracy range (%)			
QC Interday precision range (%)			
QC Interday accuracy range (%)			
Bench-top stability (hrs)			
Stock (Refrigerator) stability (hrs)			
Processed (Autosampler) stability (hrs)			
***Freeze-thaw stability (cycles)**			
***Long-term storage stability (days)**			

Dilution integrity			
Specificity			
SOPs submitted			
Bioanalytical method is acceptable			

* Only if this is applicable

Table 9. Pivotal Permeability Study Design

Study Information	
Study Number	
Study Title	
Testing Site	
Study Monitor	
Analytical Site	
Study Director	
Study/Analysis Dates	
Storage Period (no. of days from the first day of sample collection to the last day of sample analysis)	
Testing Conditions	
SOP	
Sample Analysis	
Internal Control Compounds	
Permeability Buffer	
Plates	
Cell Culture	
Cell Culture Certification	
Dosing Solutions	
Replicates	
Permeability Direction	
Permeability Test Conditions & Sampling Time points	
Permeability and Recovery Calculation	

Table 10. Pivotal Permeability Study: Apical-to-Basolateral (A-to-B) Permeability of Test Compound and Internal Standards

Drug	Parameter	Nominal Dosing Concentration (units)		
		Conc. 1	Conc. 2	Conc. 3
Test Compound	Papp (mean ± SD)			
	Recovery (%)			
High Internal Standard	Papp (mean ± SD)			
	Recovery (%)			
Low Internal Standard	Papp (mean ± SD)			
	Recovery (%)			

Table 11. Pivotal Permeability Study: Basolateral-to-Apical (B-to-A) Permeability of Test Compound and Internal Standards

Drug	Parameter	Nominal Dosing Concentration (units)		
		Conc. 1	Conc. 2	Conc. 3
Test Compound	Papp (mean ± SD)			
	Recovery (%)			
High Internal Standard	Papp (mean ± SD)			
	Recovery (%)			
Low Internal Standard	Papp (mean ± SD)			
	Recovery (%)			

Table 12. Pivotal Permeability Study: Ratio of B-to-A Papp vs. A-to-B Papp

Drug	Papp (mean ± SD)	Nominal Dosing Concentration (units)			Ratio (B-to-A)/(A-to-B)
		Conc. 1	Conc. 2	Conc. 3	
Test Compound	A-to-B				
	B-to-A				
High Internal Standard	A-to-B				
	B-to-A				
Low Internal Standard	A-to-B				
	B-to-A				

Table 13. Gastrointestinal Tract Instability

File Location:					
Medium	**Time of Incubation**	**Incubation Temperature**	**Concentration**		**% Degradation**
			Before Incubation	**After Incubation**	
Gastric Fluid/ Simulated Gastric Fluid					
Intestinal Fluid/ Simulated Intestinal Fluid					
File Location of SOP					

Table 14. Dissolution Method Information

Dissolution Method #	
Deaeration/ degassing of the medium (Yes/No,)	
Filter Description (if used in dissolution testing)	
Sinker Description (if used in dissolution testing)	
Mesh Size Description (if basket used in dissolution testing)	
Sampling (manual/Auto/fiber optics)	
CoA of Test Product (location in the submission)	
CoA of Reference Product (location in the submission)	

Table 15. Information of Analytical Method Used to Analyze Dissolution Samples

HPLC Parameters (if applicable)	
Mobile phase:	
Column:	
Flow rate:	
Wavelength:	
Injection volume:	
Column temperature:	
Run time:	

UV Parameters (if applicable)	
Wavelength:	
Cell path length	

Analytical Method Validation Report # and Date	
Submission of SOP for Method Validation (Yes/No, Effective Date)	
Address of Method Validation Site	
Address of Dissolution Testing Site	
Submission of Dissolution Method Transfer Report (if the dissolution testing site is different from the method validation site) (Yes/No, Location of the Report)	
Analyte	
Method Description	
Specificity/Placebo interference	
Linearity and Range (unit)	
Accuracy/recovery	
Precision	
Repeatability (% RSD)	
Intermediate Precision (% RSD)	
Filter Equivalency (% difference)	
Robustness	
Standard and Sample Solution Stability	

Table 16. Dissolution Data**

Dissolution Conditions	**Apparatus:**	
	Sinker:	Y/N
	Speed of Rotation:	
	Medium:	
	Volume:	
	Temperature:	
Firm's Proposed Specifications		
Dissolution Testing Site (Name, Address)		

Study Ref No.	**Testing Date**	**Product ID \ Batch No. (Test - Manufacture Date) (Reference – Expiration Date)**	**Dosage Strength & Form**	**No. of Dosage Units***		**Collection Times**					**Study Report Location**
						min	**min**	**min**	**min**	**min**	
Study Report #:		Test Product	mg Tablet Capsule	12 (individual units tested only)	Mean						
					Range						
					%CV						
Study Report #:		Reference Product	mg Tablet Capsule	12	Mean						
					Range						
					%CV						

*Testing using pooled samples is not accepted.
**Comparative dissolution data should be provided for the regulatory dissolution method as well as for multi-pH dissolution testing.

Table 17. Formulation Data

Ingredient	Amount (mg) / Tablet		Amount (%) / Tablet	
	Strength 1	Strength 2	Strength 1	Strength 2
Cores				
Coating				
Total			**100.00**	**100.0**