

**CENTER FOR DRUG EVALUATION AND  
RESEARCH**

*APPLICATION NUMBER:*

**206353Orig1s000**

**CHEMISTRY REVIEW(S)**

Country	Profile	Stage	Process	Last Milestone	Compliance Status	Milestone Date	OAI Alert Status	EER Re-eval Date	Overall Recommendation	Decision Date	Overall Re-eval Date
(b) (4)	(b) (4)	DRUG SUBSTANCE	MANUFACTURER, RELEASE TESTER	OC RECOMMENDATION	AC	(b) (4)	**NONE**	(b) (4)	ACCEPTABLE	9/17/2014	(b) (4)
	TCM	FINISHED DOSAGE	PACKAGER, RELEASE TESTER	OC RECOMMENDATION	AC		**NONE**		ACCEPTABLE	9/17/2014	
	CTL	FINISHED DOSAGE	MANUFACTURER, OTHER TESTER	OC RECOMMENDATION	AC		**NONE**		ACCEPTABLE	9/17/2014	
	NEC	FINISHED DOSAGE	MANUFACTURER, OTHER TESTER	OC RECOMMENDATION	AC		**NONE**		ACCEPTABLE	9/17/2014	
	CTL	FINISHED DOSAGE	OTHER TESTER	OC RECOMMENDATION	AC		**NONE**		ACCEPTABLE	9/17/2014	
	TCM	FINISHED DOSAGE	MANUFACTURER, RELEASE TESTER, STABILITY TESTER	OC RECOMMENDATION	AC		**NONE**		ACCEPTABLE	9/17/2014	
	CTL	DRUG SUBSTANCE	RELEASE TESTER	OC RECOMMENDATION	AC		**NONE**		ACCEPTABLE	9/17/2014	
	CTL	FINISHED DOSAGE	PACKAGER, RELEASE TESTER	OC RECOMMENDATION	AC		**NONE**		ACCEPTABLE	9/17/2014	

-----  
**This is a representation of an electronic record that was signed electronically and this page is the manifestation of the electronic signature.**  
-----

/s/  
-----

MARY GRACE LUBAO  
02/06/2015

# **NDA 206-353**

**Atazanavir and Cobicistat Tablets, 300 mg and 150 mg**

**Bristol-Myers Squibb**

**George Lunn, Ph.D.  
Division of Anti-Viral Products**

# Table of Contents

<b>Table of Contents .....</b>	<b>2</b>
<b>Chemistry Review Data Sheet.....</b>	<b>3</b>
<b>The Executive Summary .....</b>	<b>8</b>
I. Recommendations .....	8
A. Recommendation and Conclusion on Approvability .....	8
B. Recommendation on Phase 4 (Post-Marketing) Commitments, Agreements, and/or Risk Management Steps, if Approvable.....	8
II. Summary of Chemistry Assessments.....	8
A. Description of the Drug Product(s) and Drug Substance(s) .....	8
B. Description of How the Drug Product is Intended to be Used.....	10
C. Basis for Approvability or Not-Approval Recommendation.....	10
D. Risk Assessment.....	10
III. Administrative.....	13
Reviewer's Signature and Endorsement Block .....	13
<b>Chemistry Assessment .....</b>	<b>14</b>
I. Review Of Common Technical Document-Quality (Ctd-Q) Module 3.2: Body Of Data.....	14
S DRUG SUBSTANCE.....	14
P DRUG PRODUCT [Atazanavir and Cobicistat Tablets].....	24
A APPENDICES .....	64
R REGIONAL INFORMATION .....	65
II. Review Of Common Technical Document-Quality (Ctd-Q) Module 1 .....	66
A. Labeling & Package Insert .....	66
B. Environmental Assessment Or Claim Of Categorical Exclusion .....	69
III. List Of Deficiencies .....	69
IV. EES .....	72

# Chemistry Review Data Sheet

1. NDA 206-353

2. REVIEW #: 1

3. REVIEW DATE: 18-Dec-2014

4. REVIEWER: George Lunn, Ph.D.

5. PREVIOUS DOCUMENTS:

Previous Documents

None

Document Date

6. SUBMISSION(S) BEING REVIEWED:

Submission(s) Reviewed

Original  
Amendment  
Amendment  
Amendment

Document Date

04-Apr-2014  
02-Jul-2014  
19-Sep-2014  
09-Dec-2014

7. NAME & ADDRESS OF APPLICANT:

Name:	Bristol-Myers Squibb
Address:	P.O. Box 5100
Representative:	Wallingford, CT 06492

## Chemistry Review Data Sheet

Telephone:

203-677-6000

## 8. DRUG PRODUCT NAME/CODE/TYPE:

- a) Proprietary Name: Evotaz
- b) Non-Proprietary Name (USAN): Atazanavir and Cobicistat Tablets
- c) Code Name/# (ONDC only): ATV/COBI
- d) Chem. Type/Submission Priority (ONDC only):
  - Chem. Type: 4
  - Submission Priority: S

## 9. LEGAL BASIS FOR SUBMISSION: Food Drug and Cosmetic Act 505 (b)(1)

## 10. PHARMACOL. CATEGORY: Anti-viral (HIV)

## 11. DOSAGE FORM: Tablets

## 12. STRENGTH/POTENCY: Atazanavir 300 mg and Cobicistat 150 mg

## 13. ROUTE OF ADMINISTRATION: Oral

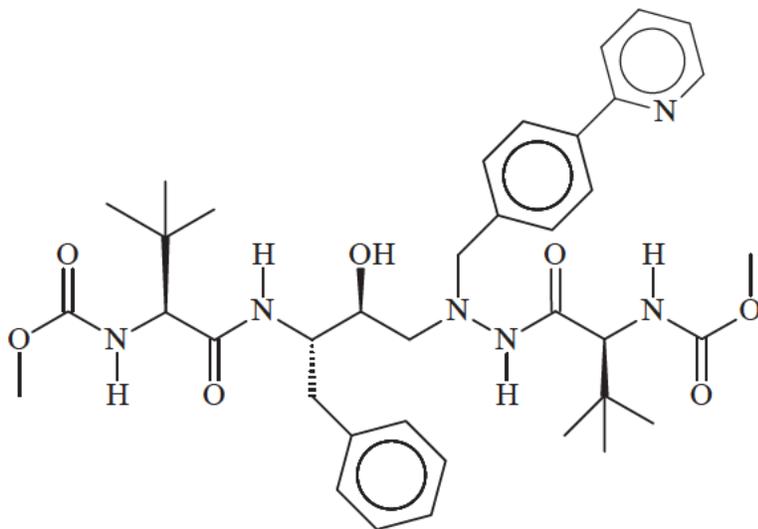
14. Rx/OTC DISPENSED:  Rx  OTC15. SPOTS (SPECIAL PRODUCTS ON-LINE TRACKING SYSTEM): SPOTS product – Form Completed Not a SPOTS product

## 16. CHEMICAL NAME, STRUCTURAL FORMULA, MOLECULAR FORMULA, MOLECULAR WEIGHT:

Atazanavir  
BMS-232632-05

## Chemistry Review Data Sheet

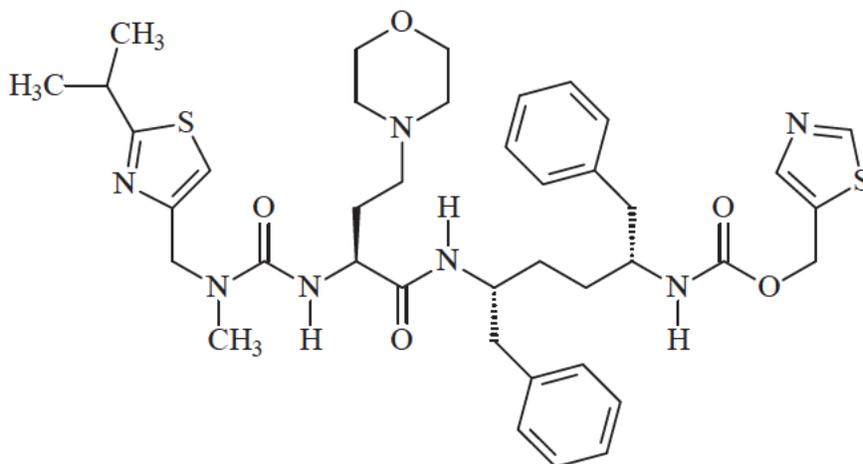
(3S,8S,9S,12S)-3,12-bis(1,1-dimethylethyl)-8-hydroxy-4,11-dioxo-9-phenylmethyl-6-[[4-(2-pyridinyl)phenyl]methyl]-2,5,6,10,13-pentaazatetradecanedioic acid dimethyl ester, sulfate (1:1)



Molecular weight 704.87 (Sulfate 802.94)  
Molecular formula  $C_{38}H_{52}N_6O_7 \cdot H_2SO_4$

Cobicistat  
BMT-061486-01

(3R,6R,9S)-12-Methyl-13-[2-(1-methylethyl)-4-thiazolyl]-9-[2-(4-morpholinyl)ethyl]-8,11-dioxo-3,6-bis(phenylmethyl)-2,7,10,12-tetraazatridecanoic acid 5-thiazolylmethyl ester



Molecular weight 776.03  
Molecular formula  $C_{40}H_{53}N_7O_5S_2$

Chemistry Review Data Sheet

17. RELATED/SUPPORTING DOCUMENTS:

**A. DMFs:**

DMF #	TYPE	HOLDER	ITEM REFERENCED	CODE <sup>1</sup>	STATUS <sup>2</sup>	DATE REVIEW COMPLETED	COMMENTS
25188	II	Gilead Sciences, Inc.	Cobicistat on silicon dioxide	1	Adequate	7/22/2014	Reviewed by G. Lunn
(b) (4)	III	(b) (4)	(b) (4)	4	Adequate		
	III			4	Adequate		
	III			4	Adequate		
	III			4	Adequate		
	IV			4	Adequate		

<sup>1</sup> Action codes for DMF Table:

1 – DMF Reviewed.

Other codes indicate why the DMF was not reviewed, as follows:

2 –Type 1 DMF

3 – Reviewed previously and no revision since last review

4 – Sufficient information in application

5 – Authority to reference not granted

6 – DMF not available

7 – Other (explain under "Comments")

<sup>2</sup> Adequate, Inadequate, or N/A (There is enough data in the application, therefore the DMF did not need to be reviewed)

**B. Other Documents: None**

18. STATUS:

CONSULTS/ CMC RELATED REVIEWS	RECOMMENDATION	DATE	REVIEWER
Biometrics	NA		
EES	Acceptable	9/17/14	T. Sharp
Pharm/Tox	N A		



# CHEMISTRY REVIEW



## Chemistry Review Data Sheet

Biopharm	Acceptable	12/15/14	Minerva Hughes
LNC	NA		
Methods Validation	NA		
OPDRA	NA		
EA	Categorical exclusion claimed. Claim is accepted.	4/29/14	G. Lunn
Microbiology	Acceptable	5/16/14	Bryan S. Riley

# The Chemistry Review for NDA 206-353

## The Executive Summary

### I. Recommendations

#### A. Recommendation and Conclusion on Approvability

This NDA is recommended for approval from the CMC perspective. All CMC, Biopharmaceutical, and Quality Microbiology issues concerning the drug product have been satisfactorily resolved. An overall recommendation of Acceptable has been made by the Office of Compliance.

#### B. Recommendation on Phase 4 (Post-Marketing) Commitments, Agreements, and/or Risk Management Steps, if Approvable

None

### II. Summary of Chemistry Assessments

#### A. Description of the Drug Product(s) and Drug Substance(s)

Atazanavir is an HIV protease inhibitor and cobicistat is a CYP3A inhibitor that boosts the systemic exposure of atazanavir. Letters of Authorization to refer to DMFs for Cobicistat on silicon dioxide and Cobicistat Tablets (b)(4) are supplied by the holder, Gilead Sciences. Information about atazanavir drug substance is contained in the approved NDA 21-567 for Reyataz (atazanavir) capsules and is cross-referenced to this NDA by the NDA holder BMS. This application briefly describes the physical properties, manufacturing facilities, specifications, and stability behavior of the drug substances. It is noteworthy that 4 newly discovered cobicistat-related degradants are described in the drug product section. The cobicistat manufacturer, Gilead, has confirmed that Gilead's analytical method is capable of detecting these degradants and that they have not been observed in the drug substance at release or on stability at long-term or accelerated conditions. These degradants are currently controlled in the drug substance as unspecified impurities at (b)(4)%. The degradants appear to arise during manufacture of the drug product.

The drug product consists of oval pink biconvex film-coated (b)(4) tablets debossed with 3641 on one side and plain on the other. Each (b)(4) tablet contains 300 mg atazanavir as the free base and 150 mg cobicistat. The tablets are packaged 30 count in (b)(4) HDPE bottles containing (b)(4) silica gel desiccant. The bottles are closed with induction seals and child-resistant closures. (b)(4) The inactive ingredients are croscarmellose sodium, crospovidone, hydroxypropyl cellulose, magnesium

## Executive Summary Section

stearate, microcrystalline cellulose, sodium starch glycolate, and stearic acid. The pink film coat contains hypromellose, iron oxide red, talc, titanium dioxide, and triacetin. The excipients are not of human or animal origin and they are not novel excipients. All excipients except for the film coat are compendial and the film coat contains only compendial components.

(b) (4)

(b) (4). Packaging and release is carried out by Bristol-Myers Squibb, Mount Vernon, IN. An Overall Recommendation of Acceptable has been made by Compliance.

The manufacturing process is described in reasonable detail.

(b) (4)

The drug product specification contains tests for appearance, identity, content uniformity, assay, impurities, dissolution, and microbial limits. As amended it is acceptable. The analytical methods are described in reasonable detail and have been validated. A detailed justification of the specification is provided. Generally the specification is conventional for this type of product. There are no atazanavir-derived degradants. The cobicistat impurities are mostly the same as those found in previous approved products although in some cases the limits are higher. Additionally 4 new cobicistat-related impurities are found. The applicant has conducted a 3 month oral rat study to qualify these impurities. PharmTox concurs that all impurities are appropriately qualified. The impurity acceptance criteria were tightened during the review process. The dissolution method is described in detail and has been validated. Microbial limits testing is consistent with that proposed by USP for a solid oral dosage form. Satisfactory batch analyses are provided for 7 commercial batches and 6 earlier supporting batches.

Each component of the container-closure system complies with the appropriate 21 CFR food additive regulations.

Twelve months of satisfactory stability data are provided for three (b) (4) batches stored at up to 30°C/75% RH and 6 months of satisfactory data are provided for these batches stored at 40°C/75% RH. There are no out of specification results. (b) (4)

Executive Summary Section

(b) (4)



Based on the data presented an expiration dating period of 24 months with the following storage statement: “Store at 20° to 25°C (68° to 77°F), excursions permitted between 15° to 30°C (59° to 86°F) [See USP Controlled Room Temperature]” is reasonable.

**B. Description of How the Drug Product is Intended to be Used**

Atazanavir and Cobicistat Tablets, 300 mg/150 mg are indicated for the treatment of HIV-1 infection in combination with other antiretroviral agents. The expiration dating period is 24 months when stored in accord with the storage statement of “Store at 20° to 25°C (68° to 77°F), excursions permitted between 15° to 30°C (59° to 86°F) [See USP Controlled Room Temperature]”.

**C. Basis for Approvability or Not-Approval Recommendation**

This NDA is recommended for approval from the CMC perspective. All CMC issues concerning the drug product have been satisfactorily resolved. Dr. Minerva Hughes Biopharmaceutics review and Dr. Bryan Riley’s Product Quality Microbiology review indicate that all deficiencies have been corrected and recommend approval. The composition, manufacturing process, and specifications for the atazanavir and cobicistat tablets are appropriate and the expiration dating period of 24 months is supported by adequate data. The container-closure systems and labeling are appropriate. An overall recommendation of Acceptable has been made by the Office of Compliance

**D. Risk Assessment**

**Initial Risk Table**

PRODUCT PROPERTY/IMPACT OF CHANGE/CQAS	PROBABILITY OF OCCURRENCE (O)	SEVERITY OF EFFECT (S)	DETECTABILITY (D)	FMECA RPN	Comment
--	-------------------------------	------------------------	-------------------	-----------	---------

Executive Summary Section

PRODUCT PROPERTY/IMPACT OF CHANGE/CQAS	PROBABILITY OF OCCURRENCE (O)	SEVERITY OF EFFECT (S)	DETECTABILITY (D)	FMECA RPN	Comment
Assay, Stability	3	2	1	6	Cobi is moderately stable
Physical stability (solid state)	3	3	4	36	Cobi is (b) (4)
Content uniformity	3	3	4	36	Medium risk for Cobi (b) (4) for Cobi at different site HPLC Content Unif
Microbial limits	1	2	3	6	
Dissolution – BCS Class II & IV	4	2	4	32	I
(b) (4)	3	3	4	36	

RPN Values: Low Risk (1-25); Moderate Risk (26-60); High Risk (61-125)

**Final Risk Table**

From Initial Quality Assessment		Review Assessment		
Product attribute/ CQA	Risk Ranking	Risk Mitigation approach in control strategy	Risk Evaluation	Lifecycle Considerations/ Comments
Assay, Stability	L	Protective packaging and storage statement (USP CRT)	Acceptable (L)	Changes in the container-closure system (including the desiccant) or the storage statement could adversely affect the stability of cobicistat
Physical stability (solid state)	M	Atazanavir is used in its most stable (b) (4) cobicistat has never	Acceptable (L)	None

Executive Summary Section

		been observed		
Content Uniformity	M	(b) (4) Content uniformity is a drug product specification	Acceptable (L)	None
Microbial limits	L	Drug product tested at release and on stability	Acceptable (see Quality Micro review)	None
Dissolution – BCS Class II and IV	M	Atazanavir is used in its most stable (b) (4) cobicistat has never been observed. In-process control (b) (4)	Acceptable(see Biopharm review)	None
(b) (4)				
Identity	L	Identity test for incoming API and in specification	Acceptable (L)	None
Average weight	L	In-process control (b) (4) in specification	Acceptable (L)	None
(b) (4)				
Impurities	L	Tested at release and on stability. Increase for cobicistat only	Acceptable (L)	Change in storage statement could impact impurity levels.
(b) (4)				
Manufacturing	M	cGMP controls at facility	Acceptable (L)	Manufacturing facilities should continue to have Acceptable ratings

## Executive Summary Section

**III. Administrative****Reviewer's Signature and Endorsement Block**

**George Lunn -A**  
Digitally signed by George Lunn -  
A  
DN: c=US, o=U.S. Government,  
ou=HHS, ou=FDA, ou=People,  
cn=George Lunn -A,  
0.9.2342.19200300.100.1.1=13001  
20718  
Date: 2014.12.18 13:33:04 -05'00'

**George Lunn, Ph.D.**  
CMC Reviewer

**Stephen Miller -A**  
Digitally signed by Stephen Miller -A  
DN: c=US, o=U.S. Government,  
ou=HHS, ou=FDA, ou=People,  
cn=Stephen Miller -A,  
0.9.2342.19200300.100.1.1=130008701  
3  
Date: 2014.12.18 13:49:06 -05'00'

“I concur, this NDA is recommended for approval from the CMC perspective.”

**Stephen Miller, Ph.D.**  
CMC-Lead

**Rapti D. Madurawe -A**  
Digitally signed by Rapti D. Madurawe -A  
DN: c=US, o=U.S. Government, ou=HHS,  
ou=FDA, ou=People,  
0.9.2342.19200300.100.1.1=1300220251,  
cn=Rapti D. Madurawe -A  
Date: 2014.12.18 13:56:19 -05'00'

**Rapti Madurawe, Ph.D.**  
Branch Chief

## Chemistry Assessment Section

**Chemistry Assessment****I. Review Of Common Technical Document-Quality (Ctd-Q) Module 3.2:  
Body Of Data****S DRUG SUBSTANCE**

A Letter of Authorization dated 11/5/13 to refer to DMF 25188 for Cobicistat on silicon dioxide is provided by the holder, Gilead Sciences.

A Letter of Authorization dated 3/31/14 to refer to approved NDA 203094 for Cobicistat Tablets is supplied by the holder, Gilead Sciences.

Approved NDA 21-567 for Reyataz (atazanavir) capsules is cross-referenced to this NDA (see original cover letter, paragraph 2, e-mail from BMS dated 6/12/14, and the Amendment of 7/2/14).

**Comments:** Adequate.

**S.1 General Information [Atazanavir and Cobicistat on Silicon Dioxide  
Drug Substances]****S.1.1 Nomenclature**

Atazanavir sulfate

(3S,8S,9S,12S)-3,12-bis(1,1-dimethylethyl)-8-hydroxy-4,11-dioxo-9-phenylmethyl-6-[[4-(2-pyridinyl)phenyl]methyl]-2,5,6,10,13-pentaazatetradecanedioic acid dimethyl ester, sulfate (1:1)

Cobicistat

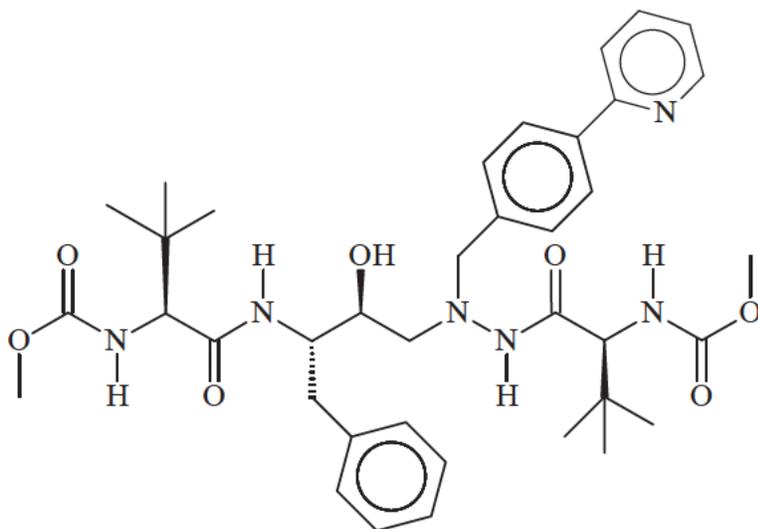
(3R,6R,9S)-12-Methyl-13-[2-(1-methylethyl)-4-thiazolyl]-9-[2-(4-morpholinyl)ethyl]-8,11-dioxo-3,6-bis(phenylmethyl)-2,7,10,12-tetraazatridecanoic acid 5-thiazolylmethyl ester

**Comments:** Adequate.

**S.1.2 Structure**

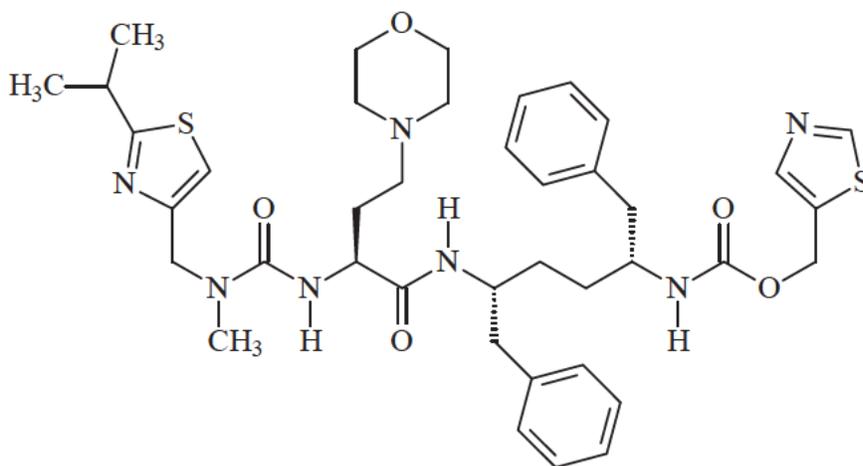
Atazanavir

## Chemistry Assessment Section



Molecular weight 704.87 (Sulfate 802.94)  
Molecular formula  $C_{38}H_{52}N_6O_7 \cdot H_2SO_4$

## Cobicistat



Molecular weight 776.03  
Molecular formula  $C_{40}H_{53}N_7O_5S_2$

**Comments:** Adequate.

**S 1.3**      *General Properties*

## Chemistry Assessment Section

(Amendment of 7/2/14)

Atazanavir sulfate is a white to yellow non-hygroscopic crystalline powder. The solubility decreases with pH and it is insoluble ( $\leq 0.002$  mg/mL) above pH 4.3. It is classified as BCS II (low solubility, high permeability). It is manufactured as (b) (4). The particle size is as follows.

(b) (4)

Cobicistat on silicon dioxide is a hygroscopic white to pale-yellow powder. The solubility of cobicistat decreases with increasing pH. It is classified as BCS II (low solubility, high permeability).

Experience with 13 batches demonstrates that particle size does not affect manufacturability or dissolution.

**Comments:** Adequate.

## S.2 Manufacture [Atazanavir and Cobicistat on Silicon Dioxide Drug Substances]

### S.2.1 *Manufacturers*

Cobicistat on silicon dioxide is manufactured and release tested by:

(b) (4)

## Chemistry Assessment Section

Batch release testing for cobicistat on silicon dioxide is also carried out by:

(b) (4)



## Chemistry Assessment Section

Atazanavir sulfate and the intermediate BMS 233101 are manufactured and released by (information in Form 356H and Amendment of 7/2/14):

Bristol-Myers Squibb Swords Laboratory  
Watery Lane  
Swords, County Dublin  
Ireland

FEI 3002806583

Contact: Tim Buckley, QA/QC Director API Ireland  
e-mail [tim.buckley@bms.com](mailto:tim.buckley@bms.com)  
Phone 353 1 813 9176  
Fax 353 1 813 9160

Atazanavir sulfate and the intermediate BMS 233101 are manufactured and released by (information in Form 356H only):

Bristol-Myers Squibb Cruiserath  
Cruiserath Road  
Mulhuddart, County Dublin 15  
Ireland

FEI 3004531790

Contact: Tim Buckley, QA/QC Director API Ireland  
e-mail [tim.buckley@bms.com](mailto:tim.buckley@bms.com)  
Phone 353 1 813 9176  
Fax 353 1 813 9160

**Comments:** On 5/5/14 these manufacturing sites were submitted to EES by G. Lunn. Currently all sites are acceptable based on profile. On 9/17/14 an Overall Recommendation of Acceptable was made by Compliance. The Overall Re-evaluation Date is 4/26/15.

**S.2.2** *Description of Manufacturing Process and Process Controls*

For cobicistat the flow diagram is as follows (see DMF 25188).

54 Page(s) has been Withheld in Full as b4 (CCI/TS) immediately following this page



# CHEMISTRY REVIEW TEMPLATE



## Chemistry Assessment Section

### FDA CDER EES ESTABLISHMENT EVALUATION REQUEST DETAIL REPORT

**Application:** NDA 206353/000 **Action Goal:**  
**Stamp Date:** 04-APR-2014 **District Goal:** 06-DEC-2014  
**Regulatory:** 04-FEB-2015  
**Applicant:** BRISTOL MYERS SQUIBB **Brand Name:** ATAZANAVIR SULFATE/COBICISTAT  
 5 RESEARCH PKY **Estab. Name:**  
 WALLINGFORD, CT 06492 **Generic Name:** ATAZANAVIR SULFATE/COBICISTAT  
**Priority:** 34 **Product Number; Dosage Form; Ingredient; Strengths**  
**Org. Code:** 530 001; TABLET, FILM COATED; ATAZANAVIR SULFATE; 341.7MG  
 001; TABLET, FILM COATED; COBICISTAT; (b) (4)

**Application Comment:**

<b>FDA Contacts:</b>	G. LUNN	Prod Qual Reviewer	3017961701
	S. BEAM	Regulatory Project Mgr (HFD-730)	3017960080
	S. MILLER	Team Leader	3017961418

**Overall Recommendation:** ACCEPTABLE on 17-SEP-2014 by T. SHARP ( ) 3017963208  
 PENDING on 05-MAY-2014 by EES\_PROD

**Establishment:** CFN: FEI: 3004531790  
 BRISTOL MYERS SQUIBB - CRUISERATH  
 CRUISERATH ROAD, MULHAUDDART  
 DUBLIN PIKE, , IRELAND

**DMF No:** **AADA:**

**Responsibilities:** DRUG SUBSTANCE MANUFACTURER  
 DRUG SUBSTANCE RELEASE TESTER  
 INTERMEDIATE MANUFACTURER

**Establishment Comment:** MANUFACTURE, CONTROL AND RELEASE OF ATAZANAVIR AND INTERMEDIATE BMS-233101 (on (b) (4) by G. LUNN ( ) 3017961701)

**Profile:** (b) (4) **OAI Status:** NONE

<u>Milestone Name</u>	<u>Milestone Date</u>	<u>Request Type</u>	<u>Planned Completion</u>	<u>Decision</u>	<u>Creator</u>
<b>Comment</b>					
OAI Submit To OC					
Request to Extend Re-eval Date To					
Extension Request Comment					
<b>Reason</b>					

SUBMITTED TO OC	05-MAY-2014				LUNNG
OC RECOMMENDATION	05-MAY-2014			ACCEPTABLE	IYERS



## Chemistry Assessment Section

Establishment: (b) (4)

DMF No: AADA:

Responsibilities: FINISHED DOSAGE MANUFACTURER  
FINISHED DOSAGE RELEASE TESTER  
FINISHED DOSAGE STABILITY TESTER

Establishment Comment: (b) (4)

Profile: TABLETS, PROMPT RELEASE OAI Status: NONE

<u>Milestone Name</u>	<u>Milestone Date</u>	<u>Request Type</u>	<u>Planned Completion</u>	<u>Decision</u>	<u>Creator</u>
<u>Comment</u>					
OAI Submit To OC					
Request to Extend Re-eval Date To					
Extension Request Comment					
<u>Reason</u>					

SUBMITTED TO OC	05-MAY-2014				LUNNG
SUBMITTED TO DO LAST INSPECTION (TCM)	06-MAY-2014 <span style="background-color: gray; color: gray;">(b) (4)</span>	<span style="background-color: gray; color: gray;">(b) (4)</span>			IYERS
DO RECOMMENDATION	06-MAY-2014			ACCEPTABLE	PHILPYE
OC RECOMMENDATION	08-MAY-2014			ACCEPTABLE	IYERS

Establishment: (b) (4)

DMF No: AADA:

Responsibilities: FINISHED DOSAGE OTHER TESTER

Establishment Comment: MICROBIAL TESTING OF ATV/COBI FCT (on (b) (4) by A. CUFF (HF-01) 3017964061)

Profile: CONTROL TESTING LABORATORY OAI Status: NONE

<u>Milestone Name</u>	<u>Milestone Date</u>	<u>Request Type</u>	<u>Planned Completion</u>	<u>Decision</u>	<u>Creator</u>
<u>Comment</u>					
OAI Submit To OC					
Request to Extend Re-eval Date To					
Extension Request Comment					
<u>Reason</u>					

SUBMITTED TO OC	05-MAY-2014				LUNNG
OC RECOMMENDATION	05-MAY-2014			ACCEPTABLE	IYERS

## Chemistry Assessment Section

**Establishment:** (b) (4)

**DMF No:** \_\_\_\_\_ **AADA:** \_\_\_\_\_

**Responsibilities:** FINISHED DOSAGE MANUFACTURER  
FINISHED DOSAGE OTHER TESTER

**Establishment Comment:** (b) (4)

**Profile:** CONTROL TESTING LABORATORY **OAI Status:** NONE  
NOT ELSEWHERE CLASSIFIED NONE

Milestone Name	Milestone Date	Request Type	Planned Completion	Decision	Creator
<b>Comment</b>					
OAI Submit To OC					
Request to Extend Re-eval Date To					
Extension Request Comment					
<b>Reason</b>					

SUBMITTED TO OC	05-MAY-2014				LUNNG
OC RECOMMENDATION	06-MAY-2014			ACCEPTABLE	IYERS
SUBMITTED TO OC	05-MAY-2014				LUNNG
SUBMITTED TO DO LAST INSPECTION: <span style="background-color: #cccccc; padding: 2px;">(b) (4)</span>	05-MAY-2014	<span style="background-color: #cccccc; padding: 2px;">(b) (4)</span>			IYERS
DO RECOMMENDATION	06-MAY-2014			ACCEPTABLE	PHILPYE
OC RECOMMENDATION	07-MAY-2014			ACCEPTABLE	WITTORFR



# CHEMISTRY REVIEW TEMPLATE



## Chemistry Assessment Section

**Establishment:** [REDACTED] (b) (4)

**DMF No:** [REDACTED] **AADA:** [REDACTED]

**Responsibilities:** DRUG SUBSTANCE RELEASE TESTER

**Establishment Comment:** [REDACTED] (b) (4) (on [REDACTED] (b) (4) by A. CUFF (HF-01) 3017964061)

**Profile:** CONTROL TESTING LABORATORY **OAI Status:** NONE

<u>Milestone Name</u>	<u>Milestone Date</u>	<u>Request Type</u>	<u>Planned Completion</u>	<u>Decision</u>	<u>Creator</u>
<u>Comment</u>					
OAI Submit To OC					
Request to Extend Re-eval Date To					
Extension Request Comment					
<u>Reason</u>					

SUBMITTED TO OC	05-MAY-2014				LUNNG
OC RECOMMENDATION	05-MAY-2014			ACCEPTABLE	IYERS

**Establishment:** **CFN:** 9610172 **FEI:** 3002806583  
 SWORDS LABORATORIES LTD DIV OF BRISTOL MYERS SQUIBB  
 WATERY LANE  
 SWORDS, DUBLIN, , IRELAND

**DMF No:** [REDACTED] **AADA:** [REDACTED]

**Responsibilities:** DRUG SUBSTANCE MANUFACTURER  
 INTERMEDIATE MANUFACTURER

**Establishment Comment:** MANUFACTURE, CONTROL AND RELEASE OF ATAZANVIR SULFATE (BMS 232632-05) AND INTERMEDIATE BMS 233101 (on 11-APR-2014 by A. CUFF (HF-01) 3017964061)

**Profile:** [REDACTED] (b) (4) **OAI Status:** NONE

<u>Milestone Name</u>	<u>Milestone Date</u>	<u>Request Type</u>	<u>Planned Completion</u>	<u>Decision</u>	<u>Creator</u>
<u>Comment</u>					
OAI Submit To OC					
Request to Extend Re-eval Date To					
Extension Request Comment					
<u>Reason</u>					

SUBMITTED TO OC	05-MAY-2014				LUNNG
OC RECOMMENDATION	05-MAY-2014			ACCEPTABLE	IYERS

## Chemistry Assessment Section

Establishment:  (b) (4)

DMF No: \_\_\_\_\_ AADA: \_\_\_\_\_

Responsibilities: DRUG SUBSTANCE MANUFACTURER  
DRUG SUBSTANCE RELEASE TESTER

Establishment Comment:  (b) (4) on  (b) (4) by A. CUFF (HF-01) 3017964061

Profile: NON-STERILE API BY CHEMICAL SYNTHESIS OAI Status: NONE

<u>Milestone Name</u>	<u>Milestone Date</u>	<u>Request Type</u>	<u>Planned Completion</u>	<u>Decision</u>	<u>Creator</u>
<u>Comment</u>					
OAI Submit To OC					
Request to Extend Re-eval Date To					
Extension Request Comment					
<u>Reason</u>					
SUBMITTED TO OC	05-MAY-2014				LUNNG
OC RECOMMENDATION	05-MAY-2014			ACCEPTABLE	IYERS

**Digital Signatures appear at the end of the Executive Summary (page 13)**