CENTER FOR DRUG EVALUATION AND RESEARCH

APPLICATION NUMBER:

21-430

CHEMISTRY REVIEW(S)

NDA 21-430
Thalidomide

Multiple Myeloma

Celgene Corporation

Haripada Sarker, Ph.D.
ONDQA/DPA I
(Reviewed for HFD-150 Division of Oncology)

Table of Contents

Appears This Way
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Chemistry Review Data Sheet

1. NDA 21-430

2. REVIEW #1:

3. REVIEW DATE: 05-17-2006

4. REVIEWER: Haripada Sarker, Ph.D.

6. PREVIOUS DOCUMENTS:

Previous Documents	Document Date
NDA 20-785	July 16, 1998

1. SUBMISSION(S) BEING REVIEWED:

Submission(s) Reviewed	Document Date
Amendment (N-000-AZ)	November 23, 2005

7. NAME & ADDRESS OF APPLICANT:

Name:	Celgene Corporation
Address:	86 Morris Avenue Summit, NJ 07901
Representative:	Megan Parsi
Telephone:	908-673-9566

8. DRUG PRODUCT NAME/CODE/TYPE:

a) Proprietary Name: Thalomid
b) Non-Proprietary Name (Chemical): alpha-(N-phtahlimido) glutarimide
c) Code Name/#: N/A
d) Chem. Type/Submission Priority (ONDC only):
- Chem. Type: 6
- Submission Priority: S

e) Proposed Trade Name: N/A

9. LEGAL BASIS FOR SUBMISSION: N/A

10. PHARMACOL. CATEGORY: Multiple Myeloma

11. DOSAGE FORM: Capsules

12. STRENGTH/POTENCY: 50 mg, 100 mg and 200 mg

13. ROUTE OF ADMINISTRATION: Oral

14. Rx/OTC DISPENSED: _X_ Rx ___ OTC

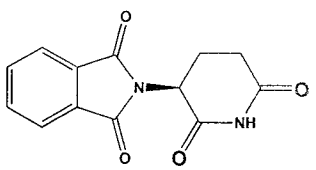
15. SPOTS (SPECIAL PRODUCTS ON-LINE TRACKING SYSTEM):

_____SPOTS product – Form Completed

__X__Not a SPOTS product

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

Structure:



Name (drug substance)	Thalidomide
Chemical Name	α-(N-phthalimido)glutarimide
CAS number	50-35-1
Molecular Weight	258.23
Molecular Formula	$C_{13}H_{10}N_2O_4$
Structural formula	As above

17. RELATED/SUPPORTING DOCUMENTS:

A. DMFs: N/A

DMF #	TYPE	HOLDER	ITEM REFERENCED	CODE	STATUS	DATE REVIEW COM-PLETED	COMMENTS[7]
N/A							See NDA 20-785

[1] 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")

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

B. Other Documents:

Documents	Application Number	Date	Reviewer
NDA	[redacted]-785	July 16, 1998	Tony DeCamp

18. STATUS:

ONDC: To be filled later

CONSULTS/ CMC RELATED REVIEWS	RECOMMENDATION	DATE	REVIEWER
EES	See NDA 20-785		
Pharm/Tox	See NDA 20-785		
Biopharm	See NDA 20-785		
DMETS	See NDA 20-785		

Executive Summary Section

N21-430 (N-00)EZ CR#1

LNC	N/A		
Methods Validation	N/A	N/A	
ODS/DMETs	See NDA 20-785		
EA (Categorical Exclusion)	N/A	N/A	
Microbiology	N/A		

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The Chemistry Review for NDA 21-430

The Executive Summary

I. Recommendations

A. Recommendation and Conclusion on Approvability

This NDA is recommended for approval as the applicant has cross-referenced entire CMC section to approved NDA 20-785. No recommendation from OC is required.

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

N/A

II. Summary of Chemistry Assessments

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

Thalidomide is an anti-inflammatory, anti-proliferative, immunomodulator and anti-angiogenic agent. The drug substance contains [redacted] Thalidomide API is [redacted] and the structure is well characterized by standard analytical tools. Commercially available Thalidomide drug product is supplied as 50 mg, 100 mg and 200 mg capsules. Celgene provided a list of drug substance and drug product manufacturing and testing facilities, which were found to be acceptable for current submission.

The drug substance and drug product have good stability characteristics under various test conditions. The proposed [redacted] retest period of drug substance and 36 months shelf life of drug product are acceptable based on primary and supportive stability data.

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

The applicant proposes to use this drug product to treat the patients with multiple myeloma [redacted]. Thalidomide capsules are administered orally with the following market presentations.

The commercial product 50 mg capsule is supplied in individual blister packs of 28 capsules and box of 10 prescription packs. Similarly, 100 mg capsule is supplied in individual blister packs of 28 capsules and box of 5 prescription packs, and 200 mg capsule is supplied in individual blister packs of 28 capsules and box of 3 prescription packs.

C. Basis for Approvability Recommendation

The information provided is adequate to support the approval of this NDA from a CMC perspective since the CMC information is fully incorporated by reference to the approved NDA 20-785. .

III. Administrative

A. Reviewer's Signature

Haripada Sarker, Ph.D.,
Review Chemist ONDQA/DPA-I

Ravi S. Harapanhalli, Ph.D.,
Branch Chief, ONDQA/DPA-V

B. Endorsement Block

ChemistName/Date: Haripada Sarker, Ph.D.
Chemistry Branch Chief Name/Date: Ravi S. Harapanhalli, Ph.D.
ProjectManagerName/Date: Carl Huntley

C. CC Block

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X § 552(b)(4) Trade Secret / Confidential

_____ § 552(b)(4) Draft Labeling

_____ § 552(b)(5) Deliberative Process

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/s/

Haripada Sarker
5/17/2006 02:40:27 PM
CHEMIST

Ravi Harapanhalli
5/18/2006 09:01:28 AM
CHEMIST

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