

**CENTER FOR DRUG EVALUATION AND
RESEARCH**

APPLICATION NUMBER:
204410Orig1s000

PROPRIETARY NAME REVIEW(S)

**Department of Health and Human Services
Public Health Service
Food and Drug Administration
Center for Drug Evaluation and Research
Office of Surveillance and Epidemiology
Office of Medication Error Prevention and Risk Management**

Proprietary Name Review--Final

Date: August 7, 2013

Reviewer: Kimberly DeFronzo, RPh, MS, MBA
Division of Medication Error Prevention and Analysis

Team Leader: Irene Z. Chan, PharmD, BCPS
Division of Medication Error Prevention and Analysis

Drug Name(s) and Strength(s): Opsumit (Macitentan) Tablets, 10 mg

Application Type/Number: NDA 204410

Applicant: Actelion

OSE RCM #: 2013-17

*** This document contains proprietary and confidential information that should not be released to the public.***

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1 INTRODUCTION

This re-assessment of the proposed proprietary name, Opsumit, is written in response to the anticipated approval of this NDA within 90 days from the date of this review. DMEPA found the proposed name, Opsumit, acceptable in OSE Review RCM #2012-2651 dated December 21, 2012.

2 METHODS AND DISCUSSION

For re-assessments of proposed proprietary names, DMEPA searches a standard set of databases and information sources (see section 4) to identify names with orthographic and phonetic similarity to the proposed name that have been approved since the previous OSE proprietary name review. For this review we used the same search criteria described in OSE Review RCM #2012-2651. We note that none of the proposed product characteristics were altered. However, we evaluated the previously identified names of concern considering any lessons learned from recent post-marketing experience, which may have altered our previous conclusion regarding the acceptability of the proposed proprietary name. The searches of the databases yielded no new names thought to look similar to Opsumit and represent a potential source of drug name confusion.

Additionally, DMEPA searched the USAN stem list to determine if the name contains any USAN stems as of the last USAN updates. The Safety Evaluator did not identify any United States Adopted Names (USAN) stems in the proposed proprietary name, as of August 2, 2013.

3 CONCLUSIONS

The re-evaluation of the proposed proprietary name, Opsumit, did not identify any vulnerability that would result in medication errors. Thus, DMEPA has no objection to the proprietary name, Opsumit, for this product at this time.

DMEPA considers this a final review; however, if approval of the NDA is delayed beyond 90 days from the date of this review, the Division of Cardiovascular Renal Products (DCRP) should notify DMEPA because the proprietary name must be re-reviewed prior to the new approval date.

If you have further questions or need clarifications, please contact Cheryle Milburn, OSE Project Manager, at 301-796-2084.

4 REFERENCES

1. *OSE Review RCM #2012-2651 dated December 21, 2012, Kimberly DeFronzo, RPh, MS, MBA*

2. *Drugs@FDA (<http://www.accessdata.fda.gov/scripts/cder/drugsatfda/index.cfm>)*

Drugs@FDA contains most of the drug products approved since 1939. The majority of labels, approval letters, reviews, and other information are available for drug products approved from 1998 to the present. Drugs@FDA contains official information about FDA approved [brand name](#), [generic drugs](#), [therapeutic biological products](#), [prescription](#) and [over-the-counter](#) human drugs and [discontinued drugs](#) and “[Chemical Type 6](#)” approvals.

3. *USAN Stems (<http://www.ama-assn.org/ama/pub/physician-resources/medical-science/united-states-adopted-names-council/naming-guidelines/approved-stems.page?>)*

USAN Stems List contains all the recognized USAN stems.

4. *Division of Medication Error Prevention and Analysis Proprietary Name Consultation Request*

Compiled list of proposed proprietary names submitted to the Division of Medication Error Prevention and Analysis for review. The list is generated on a weekly basis from the Access database/tracking system.

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

/s/

IRENE Z CHAN on behalf of KIMBERLY A DE FRONZO
08/07/2013

IRENE Z CHAN
08/07/2013

**Department of Health and Human Services
Public Health Service
Food and Drug Administration
Center for Drug Evaluation and Research
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Proprietary Name Review

Date: December 21, 2012

Reviewer: Kimberly DeFronzo, RPh, MS, MBA
Division of Medication Error Prevention and Analysis

Team Leader: Irene Z. Chan, PharmD, BCPS
Division of Medication Error Prevention and Analysis

Division Director: Carol Holquist, RPh
Division of Medication Error Prevention and Analysis

Drug Name and Strength(s): Opsumit (Macitentan) Tablets 10 mg

Application Type/Number: NDA 204410

Applicant/Sponsor: Actelion

OSE RCM #: 2012-2651

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1 INTRODUCTION

This review evaluates the proposed proprietary name, Opsumit, from a safety and promotional perspective. The sources and methods used to evaluate the proposed name are outlined in the reference section and Appendix A respectively.

1.1 REGULATORY HISTORY

This product received Orphan drug status under IND 077258 submitted on June 3, 2008. On March 26, 2012, a request for Proprietary Name Review for Opsumit was submitted under IND 077258. The name Opsumit was found acceptable on August 7, 2012 (please see review OSE #2012-755). On October 19, 2012, the Applicant submitted a request for Proprietary Name Review under the NDA 204410 for the same name, Opsumit.

(b) (4)
The Applicant confirmed that the proposed product characteristics provided in the IND 077258 submission of March 26, 2012 have not been altered (b) (4)

1.2 PRODUCT INFORMATION

The following product information is provided in the October 19, 2012 proprietary name submission.

- Active Ingredient: Macitentan
- Indication of Use: indicated for the long-term treatment of pulmonary arterial hypertension (PAH, WHO Group I) in adult (b) (4)
(b) (4)
- Route of Administration: Oral
- Dosage Form: Tablets
- Strength: 10 mg
- Dose and Frequency: 10 mg once daily
- How Supplied: 15 count blisters in carton (NDC 66215-501-15) and 30 count bottles in carton (NDC 66215-501-30)
- Storage: The product should be stored at 25°C
- Container and Closure Systems: Macitentan 10 mg film-coated tablets will be packaged in:
 - 50 mL High density polyethylene bottle with a heat induction sealing and a (b) (4)", with 2 g silica gel desiccant
 - Polyvinyl chloride /Polyethylene/ Polyvinylidene chloride (PVC/PE/PVdC) white opaque film 250 µm/25 µm/120 µm with a push through 25 µm aluminum foil

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2. RESULTS

The following sections provide the information obtained and considered in the overall evaluation of the proposed proprietary name.

2.1 PROMOTIONAL ASSESSMENT

The Office of Prescription Drug Promotion (OPDP) determined the proposed name is acceptable from a promotional perspective. However, a Division of Cardiovascular and Renal Products (DCRP) team member said the name sounds like it is short for ‘optimal summit’. This promotional concern was forwarded to OPDP. In the November 16, 2012 email from OPDP they maintained their non-objection to “Opsumit”.

DMEPA and the Division of Cardiovascular and Renal Products (DCRP) then concurred with the findings of OPDP’s promotional assessment of the proposed name.

2.2 SAFETY ASSESSMENT

The following aspects of the name were considered in the safety evaluation.

2.2.1 United States Adopted Names (USAN) SEARCH

The November 15, 2012 search of the United States Adopted Name (USAN) stems did not identify that a USAN stem is present in the proposed proprietary name.

2.2.2 Components of the Proposed Proprietary Name

The Applicant indicated in their submission that the proposed name, Opsumit, is not derived from any one particular concept. This proprietary name is comprised of a single word that does not contain any components (i.e. a modifier, route of administration, dosage form, etc.) that are misleading or can contribute to medication error.

2.2.3 FDA Name Simulation Studies

A total of 88 practitioners participated in DMEPA’s prescription studies (61 participants in the written (inpatient and outpatient) studies and 27 participants in the verbal (voice) study. The interpretations did not overlap with or appear or sound similar to any currently marketed products. Twenty-five inpatient respondents and six outpatient respondents from the written study group as well as six respondents from the verbal study group correctly interpreted the name as ‘Opsumit’. The misinterpretations in the written study group involved misinterpreting the letter ‘A’ for ‘O’ and ‘e’ for ‘i’; whereby the misinterpretations in the verbal study group involved misinterpreting the sound from the letters ‘b and f’ for ‘p’ and ‘o’ for ‘u’. See Appendix C for the complete listing of interpretations from the verbal and written prescription studies.

2.2.5 Comments from Other Review Disciplines

In response to the OSE, November 15, 2012 e-mail, a Division of Cardiovascular and Renal Products (DCRP) team member said the name sounds like it is short for ‘optimal summit’. See section 2.1 above for information related to the promotional review of the proposed proprietary name, Opsumit. No further comments or concerns relating to the proposed name at the initial phase of the proprietary name review were forwarded.

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2.2.6 Failure Mode and Effects Analysis of Similar Names

Appendix B lists possible orthographic and phonetic misinterpretations of the letters appearing in the proposed proprietary name, Opsumit. Table 1 lists the names with orthographic, phonetic, or spelling similarity to the proposed proprietary name, Opsumit identified by the primary reviewer, the Expert Panel Discussion (EPD), and other review disciplines. Table 1 also includes the names identified by (b) (4) that were submitted with the original request for review of the proposed proprietary name, Opsumit, under IND 077258. These names were previously evaluated and found conditionally acceptable under review OSE RCM #2012-755 dated August 2, 2012.

(b) (4)

Table 1: Collective List of Potentially Similar Names (DMEPA, Expert Panel Discussion (EPD), Other Disciplines, and External Name Study)					
<i>Name</i>	<i>Source</i>	<i>Name</i>	<i>Source</i>	<i>Name</i>	<i>Source</i>
Look Similar (n=23)					
Sporanox	FDA	Iprivask	FDA	Oyst-Cal-D	FDA
Apatate	FDA	Oncovite	FDA	Cycloset	External
Apriso	FDA	Opcon A	FDA	Ocuvite	External
Aquacot	FDA	Optimyd	FDA	Omnicef	External
Aquasol A	FDA	Optinate	FDA	Optivite	External
Optimoist	FDA	Aggrenox	FDA	Opana ER	FDA
Optimark	FDA	Ala-Cort	FDA	(b) (4)	FDA
Azmacort	FDA	Alamast	FDA	(b) (4)	(b) (4)
Sound Similar (n=1)					
Oxycet	FDA	(b) (4)	(b) (4)	(b) (4)	(b) (4)
Look and Sound Similar (n=5)					
Opsite	External	Optison	External	Optivar	External
Anzemet	FDA	Cesamet	FDA	(b) (4)	(b) (4)

Our analysis of the 29 names contained in Table 1 considered the information obtained in the previous sections along with their product characteristics. We determined all 29 names do not pose a risk for confusion as described in Appendices D through E.

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2.2.7 Communication of DMEPA's Final Decision to Other Disciplines

DMEPA communicated our findings to the Division of Cardiovascular and Renal Products (DCRP) via e-mail on November 29, 2012. At that time we also requested additional information or concerns that could inform our review. Per e-mail correspondence from the Division of Cardiovascular and Renal Products (DCRP) later on November 29, 2012, they stated no additional concerns with the proposed proprietary name, Opsumit.

3 CONCLUSIONS

The proposed proprietary name is acceptable from both a promotional and safety perspective.

If you have further questions or need clarifications, please contact Cheryle Milburn, OSE Project Manager, at 301-796-2084.

3.1 COMMENTS TO THE APPLICANT

We have completed our review of the proposed proprietary name, Opsumit, and have concluded that this name is acceptable. However, if any of the proposed product characteristics as stated in your October 19, 2012 submission are altered, the name must be resubmitted for review.

Additionally, the proposed proprietary name must be re-reviewed 90 days prior to approval of the NDA. The conclusions upon re-review are subject to change.

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4 REFERENCES

1. ***Micromedex Integrated Index*** (<http://csi.micromedex.com>)

Micromedex contains a variety of databases covering pharmacology, therapeutics, toxicology and diagnostics.

2. ***Phonetic and Orthographic Computer Analysis (POCA)***

POCA is a database which was created for the Division of Medication Error Prevention and Analysis, FDA. As part of the name similarity assessment, proposed names are evaluated via a phonetic/orthographic algorithm. The proposed proprietary name is converted into its phonemic representation before it runs through the phonetic algorithm. Likewise, an orthographic algorithm exists which operates in a similar fashion.

3. ***Drug Facts and Comparisons, online version, St. Louis, MO***
(<http://factsandcomparisons.com>)

Drug Facts and Comparisons is a compendium organized by therapeutic course; it contains monographs on prescription and OTC drugs, with charts comparing similar products. This database also lists the orphan drugs.

4. ***FDA Document Archiving, Reporting & Regulatory Tracking System [DARRTS]***

DARRTS is a government database used to organize Applicant and Sponsor submissions as well as to store and organize assignments, reviews, and communications from the review divisions.

5. ***Division of Medication Errors Prevention and Analysis proprietary name consultation requests***

This is a list of proposed and pending names that is generated by the Division of Medication Error Prevention and Analysis from the Access database/tracking system.

6. ***Drugs@FDA*** (<http://www.accessdata.fda.gov/scripts/cder/drugsatfda/index.cfm>)

Drugs@FDA contains most of the drug products approved since 1939. The majority of labels, approval letters, reviews, and other information are available for drug products approved from 1998 to the present. Drugs@FDA contains official information about FDA approved brand name, generic drugs, therapeutic biological products, prescription and over-the-counter human drugs and discontinued drugs and "Chemical Type 6" approvals.

7. ***U.S. Patent and Trademark Office*** (<http://www.uspto.gov>)

USPTO provides information regarding patent and trademarks.

8. ***Clinical Pharmacology Online*** (www.clinicalpharmacology-ip.com)

Clinical Pharmacology contains full monographs for the most common drugs in clinical use, plus mini monographs covering investigational, less common,

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combination, nutraceutical and nutritional products. It also provides a keyword search engine.

9. *Data provided by Thomson & Thomson's SAEGIS™ Online Service, available at (www.thomson-thomson.com)*

The Pharma In-Use Search database contains over 400,000 unique pharmaceutical trademarks and trade names that are used in about 50 countries worldwide. The data is provided under license by IMS HEALTH.

10. *Natural Medicines Comprehensive Databases (www.naturaldatabase.com)*

Natural Medicines contains up-to-date clinical data on the natural medicines, herbal medicines, and dietary supplements used in the western world.

11. *Access Medicine (www.accessmedicine.com)*

Access Medicine® from McGraw-Hill contains full-text information from approximately 60 titles; it includes tables and references. Among the titles are: Harrison's Principles of Internal Medicine, Basic & Clinical Pharmacology, and Goodman and Gilman's The Pharmacologic Basis of Therapeutics.

12. *USAN Stems (<http://www.ama-assn.org/ama/pub/about-ama/our-people/coalitions-consortiums/united-states-adopted-names-council/naming-guidelines/approved-stems.shtml>)*

USAN Stems List contains all the recognized USAN stems.

13. *Red Book (www.thomsonhc.com/home/dispatch)*

Red Book contains prices and product information for prescription, over-the-counter drugs, medical devices, and accessories.

14. *Lexi-Comp (www.lexi.com)*

Lexi-Comp is a web-based searchable version of the Drug Information Handbook.

15. *Medical Abbreviations (www.medilexicon.com)*

Medical Abbreviations dictionary contains commonly used medical abbreviations and their definitions.

16. *CVS/Pharmacy (www.CVS.com)*

This database contains commonly used over the counter products not usually identified in other databases.

17. *Walgreens (www.walgreens.com)*

This database contains commonly used over the counter products not usually identified in other databases.

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18. *Rx List* (www.rxlist.com)

RxList is an online medical resource dedicated to offering detailed and current pharmaceutical information on brand and generic drugs.

19. *Dogpile* (www.dogpile.com)

Dogpile is a Metasearch engine that searches multiple search engines including Google, Yahoo! and Bing, and returns the most relevant results to the search.

20. *Natural Standard* (<http://www.naturalstandard.com>)

Natural Standard is a resource that aggregates and synthesizes data on complementary and alternative medicine.

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APPENDICES

Appendix A

FDA's Proprietary Name Risk Assessment considers the promotional and safety aspects of a proposed proprietary name. The promotional review of the proposed name is conducted by OPDP. OPDP evaluates proposed proprietary names to determine if they are overly fanciful, so as to misleadingly imply unique effectiveness or composition, as well as to assess whether they contribute to overstatement of product efficacy, minimization of risk, broadening of product indications, or making of unsubstantiated superiority claims. OPDP provides their opinion to DMEPA for consideration in the overall acceptability of the proposed proprietary name.

The safety assessment is conducted by DMEPA. DMEPA staff search a standard set of databases and information sources to identify names that are similar in pronunciation, spelling, and orthographically similar when scripted to the proposed proprietary name. Additionally, we consider inclusion of USAN stems or other characteristics that when incorporated into a proprietary name may cause or contribute to medication errors (i.e., dosing interval, dosage form/route of administration, medical or product name abbreviations, names that include or suggest the composition of the drug product, etc.). DMEPA defines a medication error as any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the health care professional, patient, or consumer.¹

Following the preliminary screening of the proposed proprietary name, DMEPA gathers to discuss their professional opinions on the safety of the proposed proprietary name. This meeting is commonly referred to the Center for Drug Evaluation and Research (CDER) Expert Panel discussion. DMEPA also considers other aspects of the name that may be misleading from a safety perspective. DMEPA staff conducts a prescription simulation studies using FDA health care professionals. When provided, DMEPA considers external proprietary name studies conducted by or for the Applicant/Sponsor and incorporates the findings of these studies into the overall risk assessment.

The DMEPA primary reviewer assigned to evaluate the proposed proprietary name is responsible for considering the collective findings, and provides an overall risk assessment of the proposed proprietary name. DMEPA bases the overall risk assessment on the findings of a Failure Mode and Effects Analysis (FMEA) of the proprietary name and misleading nature of the proposed proprietary name with a focus on the avoidance of medication errors.

DMEPA uses the clinical expertise of its staff to anticipate the conditions of the clinical setting where the product is likely to be used based on the characteristics of the proposed product. DMEPA considers the product characteristics associated with the proposed product throughout the risk assessment because the product characteristics of the

¹ National Coordinating Council for Medication Error Reporting and Prevention.
<http://www.nccmerp.org/aboutMedErrors.html>. Last accessed 10/11/2007.

proposed may provide a context for communication of the drug name and ultimately determine the use of the product in the *usual* clinical practice setting.

Typical product characteristics considered when identifying drug names that could potentially be confused with the proposed proprietary name include, but are not limited to; established name of the proposed product, proposed indication of use, dosage form, route of administration, strength, unit of measure, dosage units, recommended dose, typical quantity or volume, frequency of administration, product packaging, storage conditions, patient population, and prescriber population. DMEPA considers how these product characteristics may or may not be present in communicating a product name throughout the medication use system. Because drug name confusion can occur at any point in the medication use process, DMEPA considers the potential for confusion throughout the entire U.S. medication use process, including drug procurement, prescribing and ordering, dispensing, administration, and monitoring the impact of the medication.²

The DMEPA considers the spelling of the name, pronunciation of the name when spoken, and appearance of the name when scripted. DMEPA compares the proposed proprietary name with the proprietary and established name of existing and proposed drug products and names currently under review at the FDA. DMEPA compares the pronunciation of the proposed proprietary name with the pronunciation of other drug names because verbal communication of medication names is common in clinical settings. DMEPA examines the phonetic similarity using patterns of speech. If provided, DMEPA will consider the Sponsor's intended pronunciation of the proprietary name. However, DMEPA also considers a variety of pronunciations that could occur in the English language because the Sponsor has little control over how the name will be spoken in clinical practice. The orthographic appearance of the proposed name is evaluated using a number of different handwriting samples. DMEPA applies expertise gained from root-cause analysis of postmarketing medication errors to identify sources of ambiguity within the name that could be introduced when scripting (e.g., "T" may look like "F," lower case 'a' looks like a lower case 'u,' etc). Additionally, other orthographic attributes that determine the overall appearance of the drug name when scripted (see Table 1 below for details).

² Institute of Medicine. Preventing Medication Errors. The National Academies Press: Washington DC. 2006.

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Table 1. Criteria Used to Identify Drug Names that Look- or Sound-Similar to a Proposed Proprietary Name.

Type of Similarity	Considerations when Searching the Databases		
	<i>Potential Causes of Drug Name Similarity</i>	<i>Attributes Examined to Identify Similar Drug Names</i>	<i>Potential Effects</i>
Look-alike	Similar spelling	Identical prefix Identical infix Identical suffix Length of the name Overlapping product characteristics	<ul style="list-style-type: none"> Names may appear similar in print or electronic media and lead to drug name confusion in printed or electronic communication Names may look similar when scripted and lead to drug name confusion in written communication
	Orthographic similarity	Similar spelling Length of the name/Similar shape Upstrokes Down strokes Cross-strokes Dotted letters Ambiguity introduced by scripting letters Overlapping product characteristics	<ul style="list-style-type: none"> Names may look similar when scripted, and lead to drug name confusion in written communication
Sound-alike	Phonetic similarity	Identical prefix Identical infix Identical suffix Number of syllables Stresses Placement of vowel sounds Placement of consonant sounds Overlapping product characteristics	<ul style="list-style-type: none"> Names may sound similar when pronounced and lead to drug name confusion in verbal communication

Lastly, DMEPA considers the potential for the proposed proprietary name to inadvertently function as a source of error for reasons other than name confusion. Post-marketing experience has demonstrated that proprietary names (or components of the proprietary name) can be a source of error in a variety of ways. Consequently, DMEPA considers and evaluates these broader safety implications of the name throughout this assessment and the medication error staff provides additional comments related to the

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safety of the proposed proprietary name or product based on professional experience with medication errors.

1. Database and Information Sources

DMEPA searches the internet, several standard published drug product reference texts, and FDA databases to identify existing and proposed drug names that may sound-alike or look-alike to the proposed proprietary name. A standard description of the databases used in the searches is provided in the reference section of this review. To complement the process, the DMEPA uses a computerized method of identifying phonetic and orthographic similarity between medication names. The program, Phonetic and Orthographic Computer Analysis (POCA), uses complex algorithms to select a list of names from a database that have some similarity (phonetic, orthographic, or both) to the trademark being evaluated. Lastly, DMEPA reviews the USAN stem list to determine if any USAN stems are present within the proprietary name. The individual findings of multiple safety evaluators are pooled and presented to the CDER Expert Panel. DMEPA also evaluates if there are characteristics included in the composition that may render the name unacceptable from a safety perspective (abbreviation, dosing interval, etc.).

2. Expert Panel Discussion

DMEPA gathers CDER professional opinions on the safety of the proposed product and discussed the proposed proprietary name (Expert Panel Discussion). The Expert Panel is composed of Division of Medication Errors Prevention (DMEPA) staff and representatives from the Office of Prescription Drug Promotion (OPDP). We also consider input from other review disciplines (OND, ONDQA/OBP). The Expert Panel also discusses potential concerns regarding drug marketing and promotion related to the proposed names.

The primary Safety Evaluator presents the pooled results of the database and information searches to the Expert Panel for consideration. Based on the clinical and professional experiences of the Expert Panel members, the Panel may recommend additional names, additional searches by the primary Safety Evaluator to supplement the pooled results, or general advice to consider when reviewing the proposed proprietary name.

3. FDA Prescription Simulation Studies

Three separate studies are conducted within the Centers of the FDA for the proposed proprietary name to determine the degree of confusion of the proposed proprietary name with marketed U.S. drug names (proprietary and established) due to similarity in visual appearance with handwritten prescriptions or verbal pronunciation of the drug name. The studies employ healthcare professionals (pharmacists, physicians, and nurses), and attempts to simulate the prescription ordering process. The primary Safety Evaluator uses the results to identify orthographic or phonetic vulnerability of the proposed name to be misinterpreted by healthcare practitioners.

In order to evaluate the potential for misinterpretation of the proposed proprietary name in handwriting and verbal communication of the name, inpatient medication orders and/or outpatient prescriptions are written, each consisting of a combination of marketed and unapproved drug products, including the proposed name. These orders are optically

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scanned and one prescription is delivered to a random sample of participating health professionals via e-mail. In addition, a verbal prescription is recorded on voice mail. The voice mail messages are then sent to a random sample of the participating health professionals for their interpretations and review. After receiving either the written or verbal prescription orders, the participants record their interpretations of the orders which are recorded electronically.

4. Comments from Other Review Disciplines

DMEPA requests the Office of New Drugs (OND) and/or Office of Generic Drugs (OGD), ONDQA or OBP for their comments or concerns with the proposed proprietary name, ask for any clinical issues that may impact the DMEPA review during the initial phase of the name review. Additionally, when applicable, at the same time DMEPA requests concurrence/non-concurrence with OPDP's decision on the name. The primary Safety Evaluator addresses any comments or concerns in the safety evaluator's assessment.

The OND/OGD Regulatory Division is contacted a second time following our analysis of the proposed proprietary name. At this point, DMEPA conveys their decision to accept or reject the name. The OND or OGD Regulatory Division is requested to provide any further information that might inform DMEPA's final decision on the proposed name.

Additionally, other review disciplines opinions such as ONDQA or OBP may be considered depending on the proposed proprietary name.

5. Safety Evaluator Risk Assessment of the Proposed Proprietary Name

The primary Safety Evaluator applies his/her individual expertise gained from evaluating medication errors reported to FDA, considers all aspects of the name that may be misleading or confusing, conducts a Failure Mode and Effects Analysis, and provides an overall decision on acceptability dependent on their risk assessment of name confusion. Failure Mode and Effects Analysis (FMEA) is a systematic tool for evaluating a process and identifying where and how it might fail.³ When applying FMEA to assess the risk of a proposed proprietary name, DMEPA seeks to evaluate the potential for a proposed proprietary name to be confused with another drug name because of name confusion and, thereby, cause errors to occur in the medication use system. FMEA capitalizes on the predictable and preventable nature of medication errors associated with drug name confusion. FMEA allows the Agency to identify the potential for medication errors due to orthographically or phonetically similar drug names prior to approval, where actions to overcome these issues are easier and more effective than remedies available in the post-approval phase.

In order to perform an FMEA of the proposed name, the primary Safety Evaluator must analyze the use of the product at all points in the medication use system. Because the proposed product is has not been marketed, the primary Safety Evaluator anticipates the use of the product in the usual practice settings by considering the clinical and product

³ Institute for Healthcare Improvement (IHI). Failure Mode and Effects Analysis. Boston. IHI:2004.

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characteristics listed in Section 1.2 of this review. The Safety Evaluator then analyzes the proposed proprietary name in the context of the usual practice setting and works to identify potential failure modes and the effects associated with the failure modes.

In the initial stage of the Risk Assessment, the Safety Evaluator compares the proposed proprietary name to all of the names gathered from the above searches, Expert Panel Discussion, and prescription studies, external studies, and identifies potential failure modes by asking:

“Is the proposed proprietary name convincingly similar to another drug name, which may cause practitioners to become confused at any point in the usual practice setting? And are there any components of the name that may function as a source of error beyond sound/look-alike?”

An affirmative answer indicates a failure mode and represents a potential for the proposed proprietary name to be confused with another proprietary or established drug name because of look- or sound-alike similarity or because of some other component of the name. If the answer to the question is no, the Safety Evaluator is not convinced that the names possess similarity that would cause confusion at any point in the medication use system, thus the name is eliminated from further review.

In the second stage of the Risk Assessment, the primary Safety Evaluator evaluates all potential failure modes to determine the likely *effect* of the drug name confusion, by asking:

“Could the confusion of the drug names conceivably result in medication errors in the usual practice setting?”

The answer to this question is a central component of the Safety Evaluator’s overall risk assessment of the proprietary name. If the Safety Evaluator determines through FMEA that the name similarity would not ultimately be a source of medication errors in the usual practice setting, the primary Safety Evaluator eliminates the name from further analysis. However, if the Safety Evaluator determines through FMEA that the name similarity could ultimately cause medication errors in the usual practice setting, the Safety Evaluator will then recommend the use of an alternate proprietary name.

Moreover, DMEPA will object to the use of proposed proprietary name when the primary Safety Evaluator identifies one or more of the following conditions in the Overall Risk Assessment:

- a. OPDP finds the proposed proprietary name misleading from a promotional perspective, and the Review Division concurs with OPDP’s findings. The Federal Food, Drug, and Cosmetic Act provides that labeling or advertising can misbrand a product if misleading representations are made or suggested by statement, word, design, device, or any combination thereof, whether through a PROPRIETARY name or otherwise [21 U.S.C 321(n); See also 21 U.S.C. 352(a) & (n)].
- b. DMEPA identifies that the proposed proprietary name is misleading because of similarity in spelling or pronunciation to another proprietary or established name of a different drug or ingredient [CFR 201.10.(C)(5)].

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- c. FMEA identifies the potential for confusion between the proposed proprietary name and other proprietary or established drug name(s), and demonstrates that medication errors are likely to result from the drug name confusion under the conditions of usual clinical practice.
- d. The proposed proprietary name contains an USAN (United States Adopted Names) stem.
- e. DMEPA identifies a potential source of medication error within the proposed proprietary name. For example, the proprietary name may be misleading or, inadvertently, introduce ambiguity and confusion that leads to errors. Such errors may not necessarily involve confusion between the proposed drug and another drug product but involve a naming characteristic that when incorporated into a proprietary name may be confusing, misleading, cause or contribute to medication errors.

If DMEPA objects to a proposed proprietary name on the basis that drug name confusion could lead to medication errors, the primary Safety Evaluator uses the FMEA process to identify strategies to reduce the risk of medication errors. DMEPA generally recommends that the Sponsor select an alternative proprietary name and submit the alternate name to the Agency for review. However, in rare instances FMEA may identify plausible strategies that could reduce the risk of medication error of the currently proposed name. In that instance, DMEPA may be able to provide the Sponsor with recommendations that reduce or eliminate the potential for error and, thereby, would render the proposed name acceptable.

In the event that DMEPA objects to the use of the proposed proprietary name, based upon the potential for confusion with another proposed (but not yet approved) proprietary name, DMEPA will provide a contingency objection based on the date of approval. Whichever product, the Agency approves first has the right to use the proprietary name, while DMEPA will recommend that the second product to reach approval seek an alternative name.

The threshold set for objection to the proposed proprietary name may seem low to the Applicant/Sponsor. However, the safety concerns set forth in criteria a through e above are supported either by FDA regulation or by external healthcare authorities, including the Institute of Medicine (IOM), World Health Organization (WHO), the Joint Commission, and the Institute for Safe Medication Practices (ISMP). These organizations have examined medication errors resulting from look- or sound-alike drug names, confusing, or misleading names and called for regulatory authorities to address the issue prior to approval. Additionally, DMEPA contends that the threshold set for the Proprietary Name Risk Assessment is reasonable because proprietary drug name confusion is a predictable and preventable source of medication error that, in many instances, the Agency and/or Sponsor can identify and rectify prior to approval to avoid patient harm.

Furthermore, post-marketing experience has demonstrated that medication errors resulting from drug name confusion are notoriously difficult to rectify post-approval. Educational and other post-approval efforts are low-leverage strategies that have had limited effectiveness at alleviating medication errors involving drug name confusion. Sponsors have undertaken higher-leverage strategies, such as drug name changes, in the

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past but at great financial cost to the Sponsor and at the expense of the public welfare, not to mention the Agency's credibility as the authority responsible for approving the error-prone proprietary name. Moreover, even after Sponsors' have changed a product's proprietary name in the post-approval phase, it is difficult to eradicate the original proprietary name from practitioners' vocabulary, and as a result, the Agency has continued to receive reports of drug name confusion long after a name change in some instances. Therefore, DMEPA believes that post-approval efforts at reducing name confusion errors should be reserved for those cases in which the potential for name confusion could not be predicted prior to approval.

Appendix B: Letters with Possible Orthographic or Phonetic Misinterpretation

Letters in Name, Opsumit	Scripted May Appear as	Spoken May Be Interpreted as
O	0, Q, A, C	oh, owe
o	a, c, e, u	oh, u
p	yn, ys, g, j, l, q	b, f, pe, pea, puh
s	G, 5, g, n, z, r	x, es
u	n, y, v, w, i, e, a, o	you, ewe
m	rn, nn, n, v, w, wi, vi, onc, z	em, im,
i	l, e, o, u, a	eye, y
t	r, f, x, A	tee, tea
Letter strings		
op	go, oq, H	of, ob
su	w	sue, sew, so
mi	wu, wi, ni, nu	my, mee
it	u, H	if

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Appendix C: Prescription Simulation Samples and Results

Figure 1. Opsumit Study (Conducted on 11/15/2012)

Handwritten Requisition Medication Order	Verbal Prescription
<p><u>Medication Order:</u></p> <p><i>Opsumit 10mg po once daily</i></p>	<p>Opsumit</p> <p>Take one by mouth daily</p> <p>Dispense # 30</p>
<p><u>Outpatient Prescription:</u></p> <div data-bbox="196 751 906 1192" style="border: 1px solid black; padding: 5px;"><p>Patient _____ Date <u>11-15-12</u></p><p>Address _____</p><p>R <i>Opsumit</i></p><p><i>T po qd</i></p><p><i>#30</i></p><p>Refill(s): _____ Dr. <u>OSE</u></p><p>DEA No. _____ Address _____</p><p>Telephone _____</p></div>	

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Study Name: Opsumit

194 People Received Study

88 People Responded

Study Name: Opsumit

Total	29	27	32	
INTERPRETATION	INPATIENT	VOICE	OUTPATIENT	TOTAL
??	0	0	1	1
APSUMIT	4	0	0	4
OBSUMAT	0	1	0	1
OBSUMIT	0	1	0	1
OBSUMMIT	0	2	0	2
OFSUMMIT	0	1	0	1
OPSCIMET	0	0	1	1
OPSOMET	0	1	0	1
OPSOMIT	0	1	0	1
OPSUMET	0	0	24	24
OPSUMIT	24	6	6	36
OPSUMIT 10 MG	1	0	0	1
OPSUMMIT	0	13	0	13
OPTSUMIT	0	1	0	1

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Appendix D: Proprietary names not likely to be confused or not used in usual practice settings for the reasons described.

No.	Proprietary Name	Active Ingredient	Similarity to Opsumit	Failure preventions
1.	Optimyd	Prednisolone Sodium Phosphate, Sulfacetamide Sodium	Orthographic	The name pair has sufficient orthographic differences.
2.	Cycloset	Bromocriptine	Orthographic	The name pair has sufficient orthographic differences.
3.	Optinate	Prenatal multivitamin	Orthographic	The name pair has sufficient orthographic differences.
4.	Apatate	Cyanocobalamin, Pyridoxine, Thiamine	Orthographic	The name pair has sufficient orthographic differences.
5.	Aggrenox	Aspirin, Dipyridamole	Orthographic	The name pair has sufficient orthographic differences.
6.	Ala-Cort	Hydrocortisone	Orthographic	The name pair has sufficient orthographic differences.
7.	Opana ER	Oxymorphone Hydrochloride	Orthographic	The name pair has sufficient orthographic differences.
8.	Alamast	Pemirolast Potassium	Orthographic	The name pair has sufficient orthographic differences.
9.	Optimark	Gadoversetamide	Orthographic	The name pair has sufficient orthographic differences.
10.	Optimoist	Saliva substitutes	Orthographic	The name pair has sufficient orthographic differences.
11.	Oxycet	Oxycodone, Acetaminophen	Phonetic	The name pair have sufficient phonetic differences

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Appendix E: Risk of medication errors due to product confusion minimized by dissimilarity of the names and/ or use in clinical practice for the reasons described.

No.	<p>Proposed name: Opsumit (Macitentan)</p> <p>Dosage Form: Tablet</p> <p>Strength: 10 mg</p> <p>Usual Dose: 10 mg once daily. No renal or hepatic adjustment.</p>	<p>Failure Mode: Incorrect Product Ordered/ Selected/Dispensed or Administered because of Name Confusion</p> <p>Causes (could be multiple)</p>	<p>Prevention of Failure Mode</p> <p>In the conditions outlined below, the following combination of factors, are expected to minimize the risk of confusion between these two names</p>
1.	<p>Azmacort (Triamcinolone Acetonide) Inhalation Aerosol</p> <p>Strength: 200 mcg (each actuation delivers 200 mcg triamcinolone acetonide from the valve and 75 mcg from the spacer)</p> <p>Dose and Frequency: Adults: 150 mcg (2 inhalations) orally 3 to 4 times per day or 300 mcg (4 inhalations) orally twice daily. Children 12 years: 75 mcg to 150 mcg (1 or 2 inhalations) orally 3 to 4 times per day or 150 mcg to 300 mcg (2 or 4 inhalations) orally twice daily. Children 6—11 years: 75 mcg to 150 mcg (1 or 2 inhalations) orally 3 to 4 times per day or 150 mcg to 300 mcg (2 or 4 inhalations) orally twice daily.</p>	<p>Orthographics: Both names have orthographically similar beginning letters ‘O’ vs. ‘A’ when scripted, and end with the same letter ‘t’. Both names contain a downstroke letter in the same second position when the letter ‘z’ in Azmacort is written as a downstroke (‘p’ vs. ‘z’).</p> <p>Route of administration: Both drugs have only one route of administration that may be omitted from a prescription.</p> <p>Strength: Both are available as a single strength that may be omitted on a prescription.</p> <p>Dose: Numerical overlap if written as “1” inhalation vs. “1” tablet</p> <p>Frequency: Orthographic similarity if written as “QD” vs. “QID”</p>	<p>Orthographics: Both names have different infixes when scripted due to extra letter in Azmacort and orthographically dissimilar letter string (‘sumi’ vs. ‘macor’).</p>
2.	(b) (4)		

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No.	Proposed name: Opsumit (Macitentan) Dosage Form: Tablet Strength: 10 mg Usual Dose: 10 mg once daily. No renal or hepatic adjustment.	Failure Mode: Incorrect Product Ordered/ Selected/Dispensed or Administered because of Name Confusion Causes (could be multiple)	Prevention of Failure Mode In the conditions outlined below, the following combination of factors, are expected to minimize the risk of confusion between these two names
			(b) (4)
3.	Optison (Perflutren Protein Type A) Suspension for Injection Strength: 1.1 mg/mL Dose and Frequency: 0.5 mL via peripheral vein may repeat in increments of 0.5 mL up to 5 mL cumulatively in 10 minutes.	Orthographics: Opsumit begins with ‘Op’ vs. Optison begins with an ‘Op’ in the identical position. Phonetics: The first syllables in both names are the same. Strength: Both are available as a single strength that may be omitted on a prescription. Route of administration: Both drugs have only one route of administration that may be omitted from a prescription.	Orthographics: Optison contains an upstroke with cross stroke in third position whereas Opsumit contains an upstroke with a cross stroke in the seventh position, giving the names a different shape and appearance when scripted. The letter strings ‘umit’ and ‘tison’ do not look similar when scripted. Phonetics: The second, and third syllables in both names sound different (‘su’ sounds different than ‘ti’ and ‘mit’ sounds different from ‘son’) Dose: 10 mg or 1 tablet vs. 0.5 mL Frequency: Once daily vs. repeated as needed to 10 minutes
4.	Opsite (Adhesive Film) Dressing Strength: 1 dressing Dose and Frequency: Apply one film over the peripheral or central catheter site.	Orthographics: Opsumit begins with ‘Ops’ vs. Opsite begins with ‘Ops’ in the identical position. Phonetics: The first syllables in both names are the same. Route of administration: Both drugs have only one route of administration that may be omitted from a prescription. Strength: Both are available as a single strength that may be omitted on a prescription.	Orthographics: The letter strings ‘umit’ and ‘ite’ do not look similar when scripted. Phonetic: The second syllables in both names sound different (‘su’ sounds different than ‘site’). Opsumit contains 3 syllables whereas Opsite contains 2 syllables. Dose: 10 mg or 1 tablet vs. apply Frequency: Once daily vs. once

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No.	Proposed name: Opsumit (Macitentan) Dosage Form: Tablet Strength: 10 mg Usual Dose: 10 mg once daily. No renal or hepatic adjustment.	Failure Mode: Incorrect Product Ordered/ Selected/Dispensed or Administered because of Name Confusion Causes (could be multiple)	Prevention of Failure Mode In the conditions outlined below, the following combination of factors, are expected to minimize the risk of confusion between these two names
5.	Optivar (Azelastine) Ophthalmic Solution Strength: 0.05% Dose and Frequency: Instill 1 drop into affected eye(s) twice daily.	Orthographics: Opsumit begins with ‘Op’ vs. Optivar begins with an ‘Op’ in the identical position. Phonetics: The first syllables in both names are the same. Route of administration: Both drugs have only one route of administration that may be omitted from a prescription. Strength: Both are available as a single strength that may be omitted on a prescription.	Orthographics: Opsumit contains an up stroke with a cross stroke in seventh position whereas Optivar contains an up stroke with cross stroke in third position, giving the names a different shape and appearance when scripted. The letter strings ‘sumit’ and ‘tivar’ do not look similar when scripted. Phonetic: The second, and third syllables in both names sound different (‘su’ sounds different than ‘ti’ and ‘mit’ sounds different from ‘var’) Dose: Optivar prescriptions would be written as “gtt” or “drops” and “affected eye(s)”
6.	Optivite (Multivitamin) Tablets Strength: Vitamin C 250 mg, Vitamin A 1250 International Units, Betaine Hydrochloride 16.67mg, Bioflavonoids 41.67mg, Biotin 10 mcg, Calcium 20.83 mg, Vitamin B5 4.17 mg, Cholecalciferol 16.67 International Units, Choline Bitartrate 52.17 mg, Chromium 16.67 mg, Vitamin E 16.67 International Units, Ferrous bis-glycinate chelate 2.5 mg, Vitamin B9 33.33 mcg, Hydroxocobalamin 10 mcg, Inositol 4 mg, Iodine 12.5 mg, Magnesium 41.67 mg, Manganese 1.67 mg, Niacinamide 4.17 mg, Pancreatin 15.5mg, Para-Aminobenzoic Acid (PABA) 4.17 mg, Potassium 8 mg, Vitamin B6 50 mg, Vitamin B2) 4.17 mg, Rutin 4.17 mg,	Orthographics: Opsumit begins with ‘Op’ and end with ‘t’ vs. Optivite begins with ‘Op’ and contains a ‘t’ in seventh position which may look similar when scripted. Route of administration: Both drugs have only one route of administration that may be omitted from a prescription. Strength: Both are available as a single strength that may be omitted on a prescription. Dosage form: Both are tablets Dose: Overlap if written as “1 tab”	Orthographics: Opsumit does not contain an up stroke with a cross stroke in third position whereas Optivite contains an up stroke with cross stroke in third position as well as a letter ‘e’ in the eighth position, post up stroke, which makes the two names appear different when scripted. The letter strings ‘sumit’ and ‘tivit’ do not look similar when scripted. Frequency: Once daily vs. divided with meals

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No.	Proposed name: Opsumit (Macitentan) Dosage Form: Tablet Strength: 10 mg Usual Dose: 10 mg once daily. No renal or hepatic adjustment.	Failure Mode: Incorrect Product Ordered/ Selected/Dispensed or Administered because of Name Confusion Causes (could be multiple)	Prevention of Failure Mode In the conditions outlined below, the following combination of factors, are expected to minimize the risk of confusion between these two names
	Selenium 16.67 mg, Vitamin B1 4.17 mg, Vitamin A Palmitate 833.3 International Units, Zinc 4.17 mg Dose and Frequency: 2 to 6 tablets per day divided with meals.		
7.	Omnicef (Cefdinir) Strength: Capsule: 300 mg Powder for Suspension: 125 mg/mL Dose and Frequency: 300 mg twice daily or 600 mg once daily	Orthographics: Opsumit begins with ‘O’ and end with ‘t’ vs. Omnicef begins with ‘O’ and ends with ‘f’ which may look similar when scripted. Route of administration: Both drugs have only one route of administration that may be omitted from a prescription. Frequency: Both are given once daily Strength: Both are available as a single strength that may be omitted on a prescription. Dose: Overlap if written as “take 1” (for capsule vs. tablet)	<u>Orthographics:</u> Opsumit has a down stroke in second position whereas Omnicef does not contain a down stroke in the second position and the letter ‘f’ may also appear as a downstroke letter, making the two names look different when scripted.
8.	Ocuvite (Multivitamin) Tablets Strength: Ascorbic Acid 200 mg, Beta-Carotene 1000 International Units, Copper 2 mg, D ₁ -Alpha Tocopheryl Acetate 60 International Units, Lutein 2 mg, Selenium 55 mcg, Zinc 40 mg Dose and Frequency: One tablet daily	Orthographics: Opsumit begins with ‘O’ and ends with ‘t’ vs. Ocuvite begins with an ‘O’ and contains a ‘t’ in sixth position which may look similar when scripted Strength: Both are available as a single strength that may be omitted on a prescription. Frequency: Both are given once daily Dose: Overlap if written as “take	<u>Orthographics:</u> Opsumit has a down stroke in second position whereas Ocuvite does not contain a down stroke. Ocuvite does contain a letter ‘e’ in the seventh position, post up stroke, which makes the two names appear different when scripted. The letter strings ‘ps’ and ‘cu’ do not look similar when scripted.

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No.	Proposed name: Opsumit (Macitentan) Dosage Form: Tablet Strength: 10 mg Usual Dose: 10 mg once daily. No renal or hepatic adjustment.	Failure Mode: Incorrect Product Ordered/ Selected/Dispensed or Administered because of Name Confusion Causes (could be multiple)	Prevention of Failure Mode In the conditions outlined below, the following combination of factors, are expected to minimize the risk of confusion between these two names
		<p>1” or “1 tab”</p> <p>Route of administration: Both drugs have only one route of administration that may be omitted from a prescription.</p> <p>Dosage form: Both are tablets</p>	
9.	<p>Oyst-Cal-D (Calcium and Vitamin D) Tablets</p> <p>Strength: Calcium 500 mg and Vitamin D 200 units</p> <p>Dose and Frequency: 1 tablet twice daily</p>	<p>Orthographics: Opsumit begins with ‘Op’ and ends with ‘t’ vs. Oyst-cal begins with ‘Oy’ and contains an ‘l’ which may look similar when scripted</p> <p>Dose: Overlap if written as “take 1” or “1 tab”</p> <p>Route of administration: Both drugs have only one route of administration that may be omitted from a prescription.</p> <p>Strength: Both are available as a single strength that may be omitted on a prescription.</p> <p>Dosage form: Both are tablets</p>	<p><u>Orthographics:</u> Opsumit has an up stroke with a cross stroke in seventh position vs. Oyst-Cal contains an up stroke with a cross in fourth position making the two names appear different when scripted.</p> <p>The letter strings ‘umi’ and ‘tca’ do not look similar when scripted.</p>
10.	<p>Sporanox (Itraconazole)</p> <p>Strength: Capsule: 100 mg Solution: 10 mg/mL</p> <p>Dose and Frequency: 100 mg to 400 mg per day; doses greater than 200 mg per day are given in 2 divided doses; length of therapy varies from 1 day to greater than 6 months depending on the condition and mycological response Renal impairment Cl_r greater than 10</p>	<p>Orthographics: Opsumit begins with ‘Op’ and end with a ‘t’ vs. Sporanox begins with an ‘Sp’ and contains a ‘x’ which may look similar when scripted</p> <p>Route of administration: Both drugs have only one route of administration that may be omitted from a prescription.</p> <p>Strength Overlap: 10 mg vs. 10 mg/mL</p> <p>Dose: Numerical similarity with 10 mg vs. 100 mg</p>	<p><u>Orthographics:</u> The letter strings ‘sumi’ and ‘orano’ do not look similar when scripted.</p> <p>Sporanox has an extra letter that makes the name appear longer which may also provide differentiation when scripted.</p>

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No.	Proposed name: Opsumit (Macitentan) Dosage Form: Tablet Strength: 10 mg Usual Dose: 10 mg once daily. No renal or hepatic adjustment.	Failure Mode: Incorrect Product Ordered/ Selected/Dispensed or Administered because of Name Confusion Causes (could be multiple)	Prevention of Failure Mode In the conditions outlined below, the following combination of factors, are expected to minimize the risk of confusion between these two names
	mL/minute: No adjustment recommended. Cl _{cr} less than 10 mL/minute: Administer 50% of normal dose. Hepatic impairment: No adjustment required		
11.	Opcon A (Naphazoline hydrochloride and pheniramine maleate) Ophthalmic Solution Strength: Naphazoline hydrochloride 0.027% and pheniramine maleate 0.3%) Dose and Frequency: 1 to 2 drops into the affected eye(s) up to 4 times per day	Orthographics: Opsumit begins with ‘Op’ vs. Opcon begins with ‘Op’ in the same position when scripted Route of administration: Both drugs have only one route of administration that may be omitted from a prescription. Strength: Both are available as a single strength that may be omitted on a prescription. Frequency: Opcon-A may be used once daily (since it “can be used up to 4 times a day”)	<u>Orthographics:</u> Opsumit has an upstroke with a cross stroke in seventh position vs. Opcon does not contain up stroke with a cross stroke when scripted. Additionally, Opsumit appears longer when scripted compared to Opcon A (Opsumit (7 letters) vs. Opcon (5 letters)) The letter strings ‘umit’ and ‘on’ do not look similar when scripted. The letter ‘m’ lengthens the name to provide differentiation. <u>Dose:</u> No overlap since written as mg or tab vs. gtt or drops or UAD
12.	Oncovite (Multivitamin) Tablets Strength: Ascorbic Acid (Vitamin C) 500mg, Calcium Pantothenate (Vitamin B5) 2.3mg, Cyanocobalamin (Vitamin B12) 1.6mcg, D-Alpha Tocopheryl Succinate (Vitamin E) 100 International Unit, Folic Acid (Vitamin B9) 0.4mg, Niacinamide 5mg, Pyridoxine (Vitamin B6) 25mg, Riboflavin (Vitamin B2) 0.5mg, Thiamine Mononitrate (Vitamin B1) 0.34mg, Vitamin A 9000 International Units, Vitamin	Orthographics: Opsumit begins with ‘O’ and end with ‘t’ vs. Oncovite begins with ‘O’ and contains ‘t’ in seventh position which may look similar when scripted Route of administration: Both drugs have only one route of administration that may be omitted from a prescription. Dose: Overlap if written as “take 1” or “1 tab” Frequency: Both are given once daily Strength: Both are available as a single	<u>Orthographics:</u> Opsumit has a down stroke in second position vs. Oncovite does not contain a down stroke in second position but does have a letter ‘e’ in the eighth position, post up stroke, which makes the two names appear different when scripted. The letter strings ‘ps’ and ‘nc’ do not look similar when scripted.

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No.	Proposed name: Opsumit (Macitentan) Dosage Form: Tablet Strength: 10 mg Usual Dose: 10 mg once daily. No renal or hepatic adjustment.	Failure Mode: Incorrect Product Ordered/ Selected/Dispensed or Administered because of Name Confusion Causes (could be multiple)	Prevention of Failure Mode In the conditions outlined below, the following combination of factors, are expected to minimize the risk of confusion between these two names
	D 400 International Units, Zinc Oxide 7.5mg Dose and Frequency: One tablet daily or as directed	strength that may be omitted on a prescription. Dosage form: Both are tablets	
13.	Iprivask (Desirudin) Powder for injection Strength: 15 mg Dose and Frequency: 15 mg subcutaneously every 12 hours. Moderate renal impairment (Cl_{cr} greater than or equal to 31 to 60 mL/minute per 1.73 m^2): 5 mg every 12 hours Severe renal impairment (Cl_{cr} less than 31 mL/minute per 1.73 m^2): 1.7 mg every 12 hours	Orthographics: Opsumit begins with ‘Op’ and end with ‘t’ vs. Iprivask begins with ‘Ip’ and ends with ‘k’ which may look similar when scripted Route of administration: Both drugs have only one route of administration that may be omitted from a prescription. Strength: Both are available in single strength that may be omitted on a prescription.	Orthographics: The letter strings ‘ivas’ and ‘umi’ do not look similar when scripted resulting in different infixes. Dose: No overlap with given strengths 10 mg or 1 tablet vs. 15 mg, 5 mg, or 1.7 mg
14.	Cesamet (Nabilone) Capsules Strength: 1 mg Dose and Frequency: 1 mg to 2 mg three times daily	Orthographics: Opsumit begins with ‘O’ and ends with ‘it’ vs. Cesamet begins with ‘C’ and ends with ‘et’ which may look similar when scripted Route of administration: Both drugs have only one route of administration that may be omitted from a prescription. Strength: Numerical similarity with 1 mg vs. 10 mg Dose: Numerical similarity with 1 mg vs. 10 mg and overlap if written as ‘take 1’	Orthographics: Opsumit has a down stroke in second position vs. Cesamet does not contain a down stroke in second position, which makes the names appear different when scripted. The letters ‘op’ and ‘ce’ do not look similar when scripted. Frequency: Once daily vs. three times daily

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No.	Proposed name: Opsumit (Macitentan) Dosage Form: Tablet Strength: 10 mg Usual Dose: 10 mg once daily. No renal or hepatic adjustment.	Failure Mode: Incorrect Product Ordered/ Selected/Dispensed or Administered because of Name Confusion Causes (could be multiple)	Prevention of Failure Mode In the conditions outlined below, the following combination of factors, are expected to minimize the risk of confusion between these two names
15.	Aquasol (A) (Vitamin A) Strength: Injection, solution: 50,000 units per mL Dose and Frequency: 100,000 units per day for 3 days, followed by 50,000 units per day for 2 weeks	Orthographics: Opsumit begins with ‘Op’ and end with a ‘t’ vs. Aquasol begins with an ‘Aq’ and ends with a ‘l’ which may look similar when scripted Strength: Both are available in single strength that may be omitted on a prescription. Route of administration: Both drugs have only one route of administration that may be omitted from a prescription. Frequency: Both are once daily	<u>Orthographics:</u> The letter strings ‘sumi’ and ‘uaso’ do not look similar when scripted. Additionally, Opsumit contains a cross stroke at the end whereas Aquasol does not. <u>Dose:</u> 10 mg or 1 tablet vs. 50,000 units or 100,000 units or expressed as mL
16.	Aquacot (Trichlormethiazide) Tablets Strength: 4 mg Dose and Frequency: 4 mg once daily	Orthographics: Opsumit begins with ‘Op’ and end with a ‘t’ vs. Aquacot begins with an ‘Aq’ and ends with a ‘t’ which may look similar when scripted Strength: Both are available in single strength that may be omitted on a prescription. Dose: Overlap if written as “take 1” or “1 tab” Route of administration: Both drugs have only one route of administration that may be omitted from a prescription. Frequency: Both are given once daily Dosage formulation: Both are tablets	<u>Orthographics:</u> The letter strings ‘sumi’ and ‘uaco’ do not look similar when scripted.

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No.	Proposed name: Opsumit (Macitentan) Dosage Form: Tablet Strength: 10 mg Usual Dose: 10 mg once daily. No renal or hepatic adjustment.	Failure Mode: Incorrect Product Ordered/ Selected/Dispensed or Administered because of Name Confusion Causes (could be multiple)	Prevention of Failure Mode In the conditions outlined below, the following combination of factors, are expected to minimize the risk of confusion between these two names
17.	Apriso (Mesalamine) Capsules Strength: 0.375 g (can be written as 375 mg) Dose and Frequency: 1.5 g (4 capsules) once daily in the morning	Orthographics: Opsumit begins with 'Op' vs. Apriso begins with an 'Ap' which may look similar when scripted Strength: Both drugs have only one strength that may be omitted from a prescription Route of administration: Both drugs have only one route of administration that may be omitted from a prescription Frequency: Both are once daily	<u>Orthographics:</u> Opsumit has an up stroke containing a cross stroke in seventh position whereas Apriso does not contain a letter in seventh position which makes the name appear different when scripted. The letter strings 'umit' and 'iso' do not look similar when scripted. <u>Dose:</u> 10 mg or 1 tablet vs. 1.5 g or 4 capsules
18.	Anzemet (Dolasetron) Strength: Solution for Injection: 20 mg/mL Tablet: 100 mg Dose and Frequency: 100 mg within 1 hour before chemotherapy; or 100 mg within 2 hours before surgery; or 12.5 mg intravenous 15 minutes before the cessation of anesthesia.	Orthographics: Opsumit begins with 'O' and ends with a 't' vs. Anzemet begins with an 'A' ends with 't' which may look similar when scripted. Strength and Dose: Numerical similarity 10 mg vs. 100 mg Dosage formulation: Both are tablets	<u>Orthographics:</u> The letter strings 'psu' and 'nze' do not look similar when scripted. <u>Route of administration:</u> Opsumit only has one route of administration that may be omitted on a prescription but Anzemet has two routes of administration (orally and intravenously) that must be specified on a prescription. <u>Frequency:</u> Once daily vs. 1 hour prior to chemotherapy or 15 minutes before anesthesia cessation

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/s/

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12/21/2012

ZACHARY A OLESZCZUK on behalf of IRENE Z CHAN
12/27/2012

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12/27/2012