

**CENTER FOR DRUG EVALUATION AND
RESEARCH**

APPLICATION NUMBER:

202514Orig1s000

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: February 9, 2012

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Drug Name and Strength: Zioptan (Tafluprost) Ophthalmic Solution 0.0015%

Application Type/Number: NDA 202514

Applicant/sponsor: Merck Sharp & Dohme Corporation

OSE RCM #: 2012-305

*** 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, Zioptan 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, Zioptan, acceptable in OSE Review 2011-2240, dated August 30, 2011.

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 2011-2240. Since none of the proposed product characteristics were altered, we did not re-evaluate previous names of concern. The searches of the databases yielded one new name (Isoptin SR), thought to look or sound similar to Zioptan and represent a potential source of drug name confusion. Failure mode and effects analysis was applied to determine if the proposed proprietary name could potentially be confused with Zioptan and lead to medication errors. This analysis determined that the name similarity between Zioptan and the identified name was unlikely to result in medication error for the reasons presented in Appendix A.

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 February 2, 2012. The Office of Prescription Drug Promotion (OPDP) re-reviewed the proposed name on February 9, 2012 and had no concerns regarding the proposed name from a promotional perspective.

3 CONCLUSIONS

The re-evaluation of the proposed proprietary name, Zioptan, did not identify any vulnerabilities that would result in medication errors with any additional names nor is the name promotional. Thus, DMEPA has no objection to the proprietary name, Zioptan, 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 Transplant and Ophthalmology Products (DTOP) 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 Karen Townsend, OSE project manager, at 301-796-5413.

4 REFERENCES

1. *Baugh, D; OSE review 2011-2240, Proprietary Name Review of Zioptan; August 30, 2011.*

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/category/4782.html>)*

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.

Appendix A: Failure Mode and Effects Analysis (FMEA) Table

Proposed Name: Zioptan (Tafluprost) Ophthalmic Solution	Strength: 0.0015%	Usual Dose: One drop in the conjunctival sac of the affected eye(s) once daily in the evening
Failure Mode: Incorrect Product Ordered/ Selected/Dispensed or Administered because of Name confusion	Causes (could be multiple)	Prevention of Failure Mode
<p>Isoptin I.V. (Verapamil Hydrochloride) Solution</p> <p>Strengths: 2.5 mg/mL</p> <p>Dosing Directions:</p> <p>5 mg to 10 mg (0.075 mg/kg to 0.3 mg/kg body weight) given IV bolus over at least 2 minutes</p> <p>Isoptin (Verapamil HCl) Tablets</p> <p>Strengths: 40 mg, 80 mg, 120 mg</p> <p>Dosing Directions:</p> <p>40 mg 3 times a day to 480 mg/day</p> <p>Isoptin SR (Verapamil) Extended Release Tablets</p> <p>Strengths:</p> <p>120 mg, 180 mg, 240 mg</p> <p>Dosing Directions:</p> <p>120 mg once daily to 240 mg every 12 hours with food</p>	<p>Orthographic and Phonetic Similarities:</p> <p>Both names contain 7 letters and contain the letter ‘o’ in the 3rd position, a downstroke ‘p’ in the 4th position next to an upstroke ‘t’ in the 5th position and the letter ‘n’ in the 7th position. Both names contain 3 syllables in which the 2nd and 3rd syllable sound similar.</p>	<p>Phonetic differences and differences in product characteristics minimize the potential for medication error in the usual practice setting.</p> <p>Phonetic Differences:</p> <p>The first syllable in each name sound different when spoken.</p> <p>Differentiating Product Characteristics between Isoptin I.V. and Zioptan:</p> <p><u>Dosage:</u> No dose overlap. Isoptin I.V. is dosed based on the patient’s body weight; therefore, a dose would need to be specified when prescribed vs. Zioptan which is dosed as one drop.</p> <p><u>Route of Administration:</u> Ophthalmic vs. Intravenous</p> <p>Differentiating Product Characteristics between Isoptin Tablets (Immediate Release and Extended Release) and Zioptan:</p> <p><u>Strength:</u> No strength overlap. Isoptin and Isoptin SR are available in multiple strengths vs. a single strength for Zioptan. When prescribed a strength would need to be specified for Isoptin and Isoptin SR. In addition, when prescribing the 120 mg strength of Isoptin SR, a modifier would need to be specified since this strength is available in both the immediate release and extended release tablets.</p> <p><u>Route of Administration:</u> Ophthalmic vs. Oral</p>

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/s/

JUNG E LEE
02/09/2012

CAROL A HOLQUIST on behalf of IRENE Z CHAN
02/09/2012

CAROL A HOLQUIST
02/09/2012

**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

Date August 30, 2011

Reviewer Denise V. Baugh, PharmD, BCPS, Safety Evaluator
Division of Medication Error Prevention and Analysis

Team Leader Todd Bridges, RPh, Team Leader
Division of Medication Error Prevention and Analysis

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

Drug Name and Strength(s) Zioptan (Tafluprost) Ophthalmic Solution
0.0015%

Application Type/Number: NDA 202514

Applicant Merck Sharp & Dohme Corporation

OSE RCM #: 2011-2240

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1 INTRODUCTION

This review evaluates the proposed proprietary name, Zioptan, 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

DMEPA found the proposed proprietary name, Saflutan, unacceptable because of its similarity to Xalatan (OSE 2011-135 dated April 14, 2011). Therefore, the Applicant submitted the alternative name, Zioptan, for our review.

1.2 PRODUCT INFORMATION

Zioptan is a prostaglandin analogue indicated for the reduction of elevated intraocular pressure in open-angle glaucoma or ocular hypertension. The recommended dose is one drop in the conjunctival sac of the affected eye(s) once daily in the evening. The dose should not exceed once daily as more frequent administration may lessen the intraocular pressure lowering effect. Zioptan will be available in single-use low density polyethylene (LDPE) containers. Each single-use container contains 4.5 mcg (in 0.3 mL solution) and is packaged in foil pouches of 10 (b) (4). Cartons will contain 3 pouches (total 30 containers) and 9 pouches (total 90 containers). Unopened foil pouches and cartons should be stored at 2°C to 8°C (36°F to 46°F). After the pouch is opened, the single-use containers may be stored in the opened foil pouch for up to 28 days at room temperature (20°C to 25°C [68°F to 77°F]). Protect from moisture.

2 RESULTS

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

2.1 PROMOTIONAL ASSESSMENT

DDMAC determined the proposed name is acceptable from a promotional perspective. DMEPA and the Division of Transplant and Ophthalmology Products (DTOP) concurred with the findings of DDMAC's promotional assessment of the proposed name.

2.2 SAFETY ASSESSMENT

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

2.2.1 United States Adopted Names (USAN) SEARCH

The United States Adopted Name (USAN) stem search conducted on August 8, 2011, identified that a USAN stem is not present in the proposed proprietary name.

2.2.2 Components of the Proposed Proprietary Name

This name is comprised of a single word that does not contain misleading or confusing components within the name.

2.2.4 FDA Name Simulation Studies

Forty-five practitioners participated in DMEPA’s prescription studies. 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, June 28, 2011, e-mail, the Division of Transplant and Ophthalmology Products (DTOP) did not forward any comments or concerns relating to the proposed name at the initial phase of the name review.

2.2.6 Failure Mode and Effects Analysis of Similar Names

Table 1 lists the names identified by the primary reviewer, the Expert Panel Discussion (EPD), and other review disciplines to have orthographic, phonetic, or spelling similarity to the proposed proprietary name, Zioptan.

Table 1: Collective List of Potentially Similar Names (DMEPA, EPD and Other Disciplines)

Look Similar		Sound Similar		Look and Sound Similar	
Name	Source	Name	Source	Name	Source
Fiapta***	FDA	Cytosan	FDA	(b) (4)	FDA
Zipan	FDA	Zilactin	FDA	Zioptan	FDA
Zipsor	FDA			Isoptin	FDA
Zirgan	FDA			Bioptan	FDA
Ziagen	FDA			Zoptian	FDA
Zarontin	FDA				
Lipofen	FDA				
Zytopic	FDA				
Zuplenz	FDA				
Zephiran	FDA				
Zutripro	FDA				
Ceptaz	FDA				
Riopan Plus	FDA				
Miostat	FDA				
Zaleplon	FDA				
Zincfrin	FDA				

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Vaqa	FDA				
Viroptic	FDA				
Ceplene	FDA				
Zantac	FDA				
Zephrex	FDA				
Zenapax	FDA				
Capoten	FDA				
Lipitor	FDA				
Myoflex	FDA				

Our analysis of the thirty-two names contained in Table 1 considered the information obtained in the previous sections along with the product characteristics for the names. We determined the thirty-two names will not pose a risk for confusion as described in Appendices D and E.

DMEPA communicated these findings to the Division of Transplant and Ophthalmology Products (DTOP) via e-mail on August 23, 2011. At that time we also requested additional information or concerns that could inform our review. Per e-mail correspondence from the Division of Transplant and Ophthalmology Products (DTOP) on August 30, 2011, they stated no additional concerns with the proposed proprietary name, Zioptan.

3 CONCLUSIONS

DMEPA concludes the proposed proprietary name, Zioptan, is acceptable from both a promotional and safety perspective. However, if any of the proposed product characteristics as stated in this review are altered, DMEPA rescinds this finding and the name must be resubmitted for review. The conclusions upon re-review are subject to change.

If you have further questions or need clarifications, please contact Karen Townsend, OSE project manager, at 301-796-5413.

3.1 COMMENTS TO THE APPLICANT

We have completed our review of the proposed proprietary name, Zioptan, and have concluded that this name is acceptable.

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.

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. ***Electronic online version of the FDA Orange Book***
(<http://www.fda.gov/cder/ob/default.htm>)

The FDA Orange Book provides a compilation of approved drug products with therapeutic equivalence evaluations.

8. ***U.S. Patent and Trademark Office*** (<http://www.uspto.gov>)
USPTO provides information regarding patent and trademarks.
9. ***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, combination, nutraceutical and nutritional products. It also provides a keyword search engine.
10. ***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.
11. ***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.
12. ***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.
13. ***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.
14. ***Red Book Pharmacy's Fundamental Reference***
Red Book contains prices and product information for prescription, over-the-counter drugs, medical devices, and accessories.
15. ***Lexi-Comp*** (www.lexi.com)
Lexi-Comp is a web-based searchable version of the Drug Information Handbook.
16. ***Medical Abbreviations Book***
Medical Abbreviations Book contains commonly used medical abbreviations and their definitions.

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 DDMAC. DDMAC 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. DDMAC 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 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.

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

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 product characteristics considered for this review appears in Appendix B1 of this review.

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).

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>
	Similar spelling	Identical prefix Identical infix Identical suffix	<ul style="list-style-type: none"> Names may appear similar in print or electronic media and lead to drug name

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

Look-alike		Length of the name Overlapping product characteristics	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	• 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	• 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 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 Division of Drug Marketing, Advertising, and Communications (DDMAC). 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 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 DDMAC'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 characteristics listed in Appendix B1 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”

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

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. DDMAC finds the proposed proprietary name misleading from a promotional perspective, and the Review Division concurs with DDMAC’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)].
- 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 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, Zioptan	Scripted May Appear as	Spoken May Be Interpreted as
Capital 'Z'	2, C, f, l, L, M, T, S, V, Y	C, S, X
lower case 'i'	e	-eye-, -ai-
lower case 'o'	a, c u, or e	ah
lower case 'p'	yn, ys, g, j, l, q	b, or silent
lower case 't'	r, f, x, A	d
lower case 'a'	el, ci, cl, d, o, u	Any vowel
lower case 'n'	m, u, x, r, h, s	dn, gn, kn, mn, pn

Appendix C: Prescription Simulation Samples and Results

Figure 1. Zioptan Prescription Study (Conducted on July 7, 2011)

Handwritten Requisition Medication Order	Verbal Prescription
<p><u>Medication Order:</u></p>	<p>“Zioptan - Instill one drop into both eye(s) every evening – quantity #1”</p>
<p><u>Outpatient Prescription:</u></p>	

FDA Prescription Simulation Responses

INPATIENT	STRENGTH	VOICE	STRENGTH	OUTPATIENT	STRENGTH
ZIGSTAN		NIOPTAN		ZIOPTAN	
ZIGSTAN	1 drop	NYOPTAN		ZIOPTAN	
ZIGSTAN		XALOPTAN	#1	ZIOPTAN	Not given
ZIGSTAN	1 drop	ZIOPTAN		ZIOPTAN	
ZIGSTAN	none	ZIOPTAN		ZIOPTAN	
ZIGSTAN INSTILL	i gtt	ZIOPTAN	1 drop	ZIOPTAN	none
ZIOPTAN	one gtt	ZIOPTAN		ZIOPTAN	
ZIOPTAN		ZIOPTAN		ZIOPTAN	
ZIOPTAN		ZIOPTAN		ZIOPTAN	
ZIOPTAN		ZYOPTAN		ZIOPTAN	
ZIOPTAN EYE DROPS		ZYOPTAN		ZIOPTAN	none
ZIOSTAN	one gtt	ZYOPTAN		ZIOPTAN	None
		ZYOPTAN		ZIOPTAN	
		ZYOPTAN		ZIOPTAN	
		ZYOPTAN #1		ZIOPTAN	
				ZIOPTAN	none given
				ZIOPTAN USE AS DIRECTED	
				ZOPTAN	

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

Proprietary Name	Active Ingredient	Similarity to Zioptan	Failure preventions
Myoflex	Trolamine salicylate	Look	Lack of convincing orthographic or phonetic similarity
Zilactin	Benzocaine (Zilactin B) or Lidocaine (Zilactin L)	Sound	Lack of convincing orthographic or phonetic similarity
Zincfrin (ophthalmic solution)	Phenylephrine and Zinc Sulfate ophthalmic solution	Look	Discontinued in the marketplace; no generic products exist
(b) (4)			
Zioptan***	Tafluprost	Sound and Look	Name was found to be the subject of this review
Bioptan	Propoxyphene (for analgesia) or Caffeine (for asthma)	Sound and Look	Foreign name marketed in Turkey
Zopitan	Zopiclone	Sound and Look	Non-benzodiazepine, sedative-hypnotic solid oral dosage form marketed in Europe
Fiapta***	Iloperidone	Look	DMEPA objected to this name due to its similarity to Lipitor (OSE 2007-537 dated April 14, 2008); alternative name, Fanapt was found to be acceptable (OSE 2009-69 dated February 11, 2009) and the application (NDA 22192) was approved May 6, 2009.
Vaqta	Hepatitis A vaccine	Look	Lack of convincing orthographic or phonetic similarity

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

Ceplene	Histamine	Look	Lack of convincing orthographic or phonetic similarity
Cytoxan	Cyclophosphamide	Sound	Lack of convincing orthographic or phonetic similarity

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.

Proposed name: Zioptan (Tafluprost) Ophthalmic Solution	Strength(s): 0.015%	Usual dose: One drop in the conjunctival sac of the affected eye(s) once daily in the evening
Failure Mode: Incorrect Product Ordered/ Selected/Dispensed or Administered due to name confusion	Causes (could be multiple)	Prevention of Failure Mode
Zipan-25, Zipan-50 (promethazine HCL) Injection (product discontinued but generic products exist) <u>Usual dose:</u> 12.5 mg to 25 mg deep intramuscular or intravenous every 4 hours as needed	Orthographic similarity stems from sharing the same first letter, ‘Z’, having a down stroke (‘p’) in similar locations within their names and ending in the letters ‘- an’.	The proposed proprietary name, Zioptan, includes a cross stroke (‘t’) which gives this name a different shape from that of the marketed name, Zipan. Additionally, Zioptan appears longer in length when written. These differences may help to distinguish between these names. Differing product characteristics include the dose (12.5 mg to 25 mg vs. one drop), the route of administration (intramuscular or intravenous vs. ocular), and frequency of administration (every 4 hours as needed vs. once daily in the evening). Zipan is available in more than one strength and this information is necessary to dispense/administer the medication as intended.
Zipsor (Diclofenac) Capsule 25 mg <u>Usual dose:</u> One capsule (25 mg) orally four times daily	Orthographic similarity stems from the fact that both names begin with the same two letters (Zi) and include the same down stroke (‘p’) in similar positions within their names. Both products are	The proposed name, Zioptan, includes a cross stroke (‘t’) which gives this name a different shape from that of the marketed name, Zipsor. Additionally, Zioptan appears longer in length when written. These differences may help to distinguish between these names. Differing product characteristics include the route of administration (oral vs. ocular) and the frequency of administration (four times daily vs. once daily).

	<p>available as a single strengths and therefore, this information does not have to be included on a prescription prior to dispensing/administering the medications.</p> <p>One overlapping product characteristic is the dose (one [capsule] vs. one [drop]).</p>	
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Proposed name: Zioptan (Tafluprost) Ophthalmic Solution	Strength(s): 0.015%	Usual dose: One drop in the conjunctival sac of the affected eye(s) once daily in the evening
Failure Mode: Incorrect Product Ordered/ Selected/Dispensed or Administered due to name confusion	Causes (could be multiple)	Prevention of Failure Mode
<p>Zirgan (Ganciclovir) Ophthalmic gel 0.15%</p> <p><u>Usual dose:</u> One drop in the affected eye(s) five times daily</p>	<p>Orthographic similarity stems from the fact that both names begin with the same two letters ('Zi') and end with the same two letters (an).</p> <p>Overlapping product characteristics include the dose (one), dosage form (ophthalmic solution) and route of administration (ocular).</p> <p>Both products are available as a single strength and therefore, this information does not have to be included on a prescription prior to dispensing/administering the medications.</p> <p>There is numerical overlap in their strengths</p>	<p>The proposed proprietary name, Zioptan, includes a cross stroke, 't' which gives this name a different shape from that of the marketed name, Zirgan. Additionally, the 'o' in Zioptan extends the space between the first letter and the down stroke when written. These differences may help to distinguish between this name pair.</p> <p>One differing product characteristic is the frequency of administration (five times daily vs. once daily).</p>

	(0.15% vs. 0.015%).	
<p>Ziagen (Abacavir)</p> <p>300 mg tablet 20 mg/mL oral solution</p> <p><u>Usual dose:</u> 600 mg daily or 300 mg twice daily</p>	<p>Orthographic similarity stems from the fact that both names begin with the same two letters ('Zi-') and end with the same letter ('n').</p> <p>Both products are available as a single strength and therefore, this information does not have to be included on a prescription prior to dispensing/administering the medications.</p>	<p>The proposed proprietary name, Zioptan, includes a cross stroke, 't' which gives this name a different shape from that of the marketed name, Ziagen. This difference may help to distinguish between this name pair.</p> <p>Differing product characteristics include route of administration (oral vs. ocular) and frequency of administration (twice daily vs. once daily).</p>

Proposed name: Zioptan (Tafluprost) Ophthalmic Solution	Strength(s): 0.015%	Usual dose: One drop in the conjunctival sac of the affected eye(s) once daily in the evening
Failure Mode: Incorrect Product Ordered/ Selected/Dispensed or Administered due to name confusion	Causes (could be multiple)	Prevention of Failure Mode
<p>Zarontin (Ethosuximide) 250 mg capsule 250 mg/5mL oral solution <i>Usual dose :</i> 500 mg orally per day</p>	<p>Orthographic similarity stems from the fact that both names begin with the same two letters, ‘Zi’, and end with the same letter, ‘n’. Additionally, both names include a cross stroke, ‘t’, in similar places within their names.</p> <p>Both products are available as a single strength and therefore, this information does not have to be included on a prescription prior to dispensing/administering the medications.</p> <p>One overlapping product characteristic is frequency of administration (daily).</p>	<p>The proposed proprietary name, Zioptan, includes a down stroke, ‘p’, which gives this name a different shape from that of the marketed name, Zarontin. Additionally, Zarontin is longer in length than Zioptan in some handwriting samples. These differences may help distinguish between this name pair.</p> <p>Differing product characteristics include the dose (500 mg or two [capsules] vs. ‘one’ [drop]) and the route of administration (oral vs. ocular).</p>
<p>Lipofen (Fenofibrate) Capsule 50 mg, 150 mg <i>Usual dose:</i> 50 mg to 150 mg orally per day</p>	<p>Orthographic similarity stems from the similar appearance of their first letters (‘L’ vs. ‘Z’) in some handwriting samples and the fact that both names include a down stroke, ‘p’ and an</p>	<p>The down stroke (‘p’) and cross stroke (‘t’) appear beside each other in the proposed proprietary name, Zioptan whereas in the marketed name, Lipofen, the down stroke (‘p’) and up stroke (‘f’) have a single letter on either side of them. The locations of these letters within the names give them different shapes and may help to distinguish between them.</p> <p>Differing product characteristics include the route of</p>

	<p>up stroke ('f' vs. 't') in similar positions within their names. Both names also end with an 'n'.</p> <p>Overlapping product characteristics include the dose (one [capsule] vs. one [drop]) and the frequency of administration (once daily).</p>	<p>administration (oral vs. ocular).</p> <p>Lipofen is available in more than one strength and this information is necessary to dispense/administer the medication as intended.</p>
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Proposed name: Zioptan (Tafluprost) Ophthalmic Solution	Strength(s): 0.015%	Usual dose: One drop in the conjunctival sac of the affected eye(s) once daily in the evening
Failure Mode: Incorrect Product Ordered/ Selected/Dispensed or Administered due to name confusion	Causes (could be multiple)	Prevention of Failure Mode
Zytopic (Triamcinolone acetonide) Cream 0.1% <i>Usual dose:</i> Apply cream to the affected area(s) 2 to 4 times daily	Orthographic similarity stems from the fact that both names begin with the same letter ('Z') and share a down stroke ('p') within their names. Both products are available as a single strength and therefore, this information does not have to be included on a prescription prior to dispensing/administering the medications. One overlapping product characteristic is the route of administration (topical).	The sequences of down strokes and cross strokes in the proposed proprietary name, Zioptan appear in different locations from the marketed name, Zytopic. For example, the letters '-pt-' in Zioptan appear in the middle of this name whereas the letters '-yt-' in Zytopic appear immediately after the first letter. Additionally, Zytopic has an added down stroke, 'p' which gives this name a different shape. These differences may help distinguish between these names. Differing product characteristics include dose (non-specific vs. one drop) and frequency of administration (2 to 4 times daily vs. once daily).
Zuplenz (Ondansetron) oral film 4 mg, 8 mg <i>Usual dose:</i> 24 mg orally 30 minutes before HEC or 8 mg twice daily for MEC	Orthographic similarity stems from the fact that both names begin with the same letter ('Z') and both names include a down stroke and up stroke beside each other and in similar locations ('-pl-' vs '-pt-'). One potentially overlapping product characteristic is frequency of	The proposed proprietary name, Zioptan, includes a cross stroke, 't', which is orthographically different from the up stroke, 'l' (in Zuplenz) in some handwriting samples. Additionally, the last letter in Zuplenz, 'z' may be written as another down stroke in this name or it may be written as a cross stroke. These differences may help to distinguish this name pair. Zuplenz is available in more than one strength and this information is necessary to dispense/administer the medication as intended.

	administration (daily) if the chemotherapy regimen is given in that fashion.	
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Proposed name: Zioptan (Tafluprost) Ophthalmic Solution	Strength(s): 0.015%	Usual dose: One drop in the conjunctival sac of the affected eye(s) once daily in the evening
Failure Mode: Incorrect Product Ordered/ Selected/Dispensed or Administered due to name confusion	Causes (could be multiple)	Prevention of Failure Mode
Zutripro (Chlorpheniramine and Hydrocodone and Pseudoephedrine) Solution 5 mg/4 mg/60 mg per 5 mL <i>Usual dose:</i> 5 mL orally every 4 to 6 hours as needed	Orthographic similarity stems from the fact that both names begin with the same letter ('Z') and both names include the same down stroke ('p') and up stroke ('t'). Both products are available as a single strength and therefore, this information does not have to be included on a prescription prior to dispensing/administering the medications. One potentially overlapping product characteristic is the dose (one [teaspoonful] vs. one [drop]).	The up stroke ('t') and down stroke ('p') appear in different locations within these names. Whereas the 't' and 'p' appear in the third and sixth position respectively in the marketed name, Zutripro, these letters appear in the fifth and fourth positions in the proposed name, Zioptan. This difference gives these names different shapes and may help to distinguish between them. Differing product characteristics include the route of administration (oral vs. ocular) and the frequency of administration (every 4 to 6 hours as needed vs. once daily).
Riopan Plus (magaldrate and simethicone) 540 mg/20 mg/5 mL <i>Usual dose:</i>	Orthographic similarity stems from the fact that they share two letter combinations ('-iop-' and '-an-') in the same or similar positions	The first letters of these names do not look similar orthographically ('R' vs. 'Z'). Additionally, the proposed name, Zioptan, includes a cross stroke, 't' that gives this name a different shape from the marketed name, Riopan Plus. Finally, the modifier, 'Plus', makes this name longer than Zioptan. All of

<p>5 mL to 10 mL (540 mg to 1080 mg magaldrate) between meals and hs</p>	<p>within their names. Both products are available as a single strength and therefore, this information does not have to be included on a prescription prior to dispensing/administering the medications.</p>	<p>these differences may help to distinguish between these names. Differing product characteristics include the route of administration (oral vs. ocular) and the frequency of administration (between meals and at bedtime vs. once daily).</p>
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Proposed name: Zioptan (Tafluprost) Ophthalmic Solution	Strength(s): 0.015%	Usual dose: One drop in the conjunctival sac of the affected eye(s) once daily in the evening
Failure Mode: Incorrect Product Ordered/ Selected/Dispensed or Administered due to name confusion	Causes (could be multiple)	Prevention of Failure Mode
Miostat (Carbachol) Intraocular Solution 0.01% <i>Usual dose:</i> Instill no greater than 0.5 mL into the anterior chamber before or after securing sutures	Orthographic similarity stems from the fact that both names share the same letters in the second, third and fifth positions ('i', 'o', and 't'). Both products are available as a single strength and therefore, this information does not have to be included on a prescription prior to dispensing/administering the medications. One overlapping product characteristic is the route of administration (ocular).	The last letter in the marketed name, Miostat is a cross stroke ('t') whereas the proposed proprietary name, Zioptan, has a down stroke immediately preceding the cross stroke ('t') and is located in the middle of its name. This placement of cross strokes and up strokes in these names gives them different shapes and may help to distinguish between them. Differing product characteristics include the dose (0.5 mL vs. one drop) and frequency of administration (one time vs. once daily).
Zaleplon (established name for Sonata) Capsule 5 mg, 10 mg <i>Usual dose:</i> 10 mg orally at bedtime	Orthographic similarity stems from the fact that both names begin and end with the same letters ('Z' and 'n') and both names have a down stroke ('p') immediately followed by an up stroke ('l' or 't'). Overlapping product characteristics include the dose (one [capsule\	The marketed name, Zaleplon includes one additional up stroke in the third position which gives this name a different shape from the proposed proprietary name, Zioptan. This difference may help to distinguish between these names. One differing product characteristic is the route of administration (oral vs. ocular). Zaleplon is available in more than one strength and this information is necessary to dispense/administer the medication as intended.

	vs. one [drop]) and the frequency of administration (once daily).	
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Proposed name: Zioptan (Tafluprost) Ophthalmic Solution	Strength(s): 0.015%	Usual dose: One drop in the conjunctival sac of the affected eye(s) once daily in the evening
Failure Mode: Incorrect Product Ordered/ Selected/Dispensed or Administered due to name confusion	Causes (could be multiple)	Prevention of Failure Mode
Viroptic (Trifluridine) Ophthalmic Solution 1% <i>Usual dose:</i> One drop every 2 hours while awake (maximum 9 drops/day)	Orthographic similarity stems from the similar appearance of their first letters ('V' vs. 'Z') in some handwriting samples and the fact that both names have a shared letter ('I') in the same position and letter combinations ('i' and '-opt-') in similar positions. Both products are available as a single strength and therefore, this information does not have to be included on a prescription prior to dispensing/administering the medications. Overlapping product characteristics include the dose (one drop) and the route of administration (ocular).	The letter 'r' in the marketed name, Viroptic gives this name a longer appearance than the proposed name, Zioptan. Additionally, the suffixes for the marketed name, Viroptic, and for the proposed proprietary name, Zioptan, do not look similar when scripted. These differences may help to distinguish between this name pair. One differing product characteristic is the frequency of administration (every 2 hours vs. once daily).
Zantac (Ranitidine) <u>Tablet:</u> 75 mg, 150 mg, 300 mg <u>Injection:</u> 50 mg/2mL <u>Oral solution:</u> 15 mg/mL	Orthographic similarity stems from the fact that both names begin with the same letter, 'Z' and have a cross stroke, 't' in similar positions within	The proposed proprietary name, Zioptan, includes one down stroke, 'p' immediately before its cross stroke, 't' giving this name a different shape from the currently marketed name, Zantac. This difference may help to distinguish between these names.

<p><i>Usual dose:</i> 150 mg twice daily or 300 mg bedtime</p>	<p>their names. Two potentially overlapping product characteristics are the dose (one [tablet] vs. one [drop]) and the frequency of administration (once daily at bedtime).</p>	<p>One differing product characteristic is the route of administration (oral vs. ocular). Zantac is available in more than one strength and this information is necessary to dispense/administer the medication as intended.</p>
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Proposed name: Zioptan (Tafluprost) Ophthalmic Solution	Strength(s): 0.015%	Usual dose: One drop in the conjunctival sac of the affected eye(s) once daily in the evening
Failure Mode: Incorrect Product Ordered/ Selected/Dispensed or Administered due to name confusion	Causes (could be multiple)	Prevention of Failure Mode
Zephrex (Guaifenesin & Pseudoephedrine) Tablet 400 mg/60 mg <i>Usual dose:</i> One tablet every 6 hours	Orthographic similarity stems from the fact that both names begin with the same letter, 'Z' and they also have a down stroke, 'p' immediately followed by an up stroke ('h' vs. 't'). Both products are available as a single strength and therefore, this information does not have to be included on a prescription prior to dispensing/administering the medications. One overlapping product characteristic includes the dose (one [tablet] vs. one [drop]).	The up stroke in the proposed proprietary name, Zioptan, is represented by a cross stroke, 't'. Additionally, the currently marketed name, ends with a cross stroke, 'x'. These differences may help to distinguish between this name pair. Differing product characteristics include the route of administration (oral vs. ocular) and the frequency of administration (every 6 hours vs. once daily).
Zenapex (Daclizumab) Injection 25 mg/5 mL <i>Usual dose:</i> 1 mg/kg intravenous every 2 weeks for 5 doses	Orthographic similarity stems from the fact that both names begin with the same letter, 'Z' and have the same down stroke, 'p' within their names. Both products are available as a single strength and therefore, this information does not	The proposed proprietary name, Zioptan, has a cross-stroke, 't' which immediately follows the down stroke, 'p' giving it a different shape from the currently marketed name, Zenapex. Additionally, Zenapex ends with a cross stroke, 'x' which does not look like the 'n' (at the end of Zioptan) when written. These differences may help to distinguish between this name pair. Differing product characteristics include dose (1 mg/kg vs. one drop), route of administration (intravenous vs. ocular), and frequency of

	have to be included on a prescription prior to dispensing/administering the medications.	administration (every 2 weeks vs. once daily).
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Proposed name: Zioptan (Tafluprost) Ophthalmic Solution	Strength(s): 0.015%	Usual dose: One drop in the conjunctival sac of the affected eye(s) once daily in the evening
Failure Mode: Incorrect Product Ordered/ Selected/Dispensed or Administered due to name confusion	Causes (could be multiple)	Prevention of Failure Mode
Capoten (Captopril) Tablet 12.5 mg, 25 mg, 50 mg, 100 mg <u>Usual dose:</u> 12.5 mg to 25 mg orally 2 to 3 times daily	Orthographic similarity stems from the similar appearance of their first letters ('C' vs. 'Z') in some handwriting samples and the fact that both names have a down stroke, 'p', an up stroke, 't' and end with the same letter, 'n'. One potentially overlapping product characteristic is the dose (one [tablet] vs. one [drop]).	The up stroke and down stroke are beside each other in the proposed proprietary name, Zioptan, whereas they are separated by one letter in the marketed name, Capoten giving these names different shapes. This difference may help to distinguish between this name pair. Differing product characteristics include the route of administration (oral vs. ocular) and the frequency of administration (2 to 3 times daily vs. once daily). Capoten is available in more than one strength and this information is necessary to dispense/administer the medication as intended.
Lipitor (Atorvastatin) Tablet 10 mg, 20 mg, 40 mg, 80 mg <u>Usual dose:</u> 10 mg to 80 mg once daily	Orthographic similarity stems from the similar appearance of their first letters ('L' vs. 'Z') in some handwriting samples and the fact that both names have a down stroke, 'p' and an up stroke, 't'. Two overlapping product characteristics may include the dose (one	The up stroke and down stroke are beside each other in the proposed proprietary name, Zioptan, whereas they are separated by one letter in the marketed name, Lipitor giving these names different shapes. These differences may help to distinguish between this name pair. Lipitor is available in more than one strength and this information is necessary to dispense/administer the medication as intended.

	[tablet] vs. one [drop]) and the frequency of administration (once daily).	
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Proposed name: Zioptan (Tafluprost) Ophthalmic Solution	Strength(s): 0.015%	Usual dose: One drop in the conjunctival sac of the affected eye(s) once daily in the evening
Failure Mode: Incorrect Product Ordered/ Selected/Dispensed or Administered due to name confusion	Causes (could be multiple)	Prevention of Failure Mode
<p>Isoptin (Verapamil)</p> <p>Injection: 2.5 mg/mL Tablet: 40 mg, 80 mg, 120 mg</p> <p><i>Usual dose:</i> 5 mg to 10 mg IV bolus over 2 minutes OR 80 mg to 120 mg TID</p>	<p>Orthographic similarity stems from the fact that both names share the letter combination, ‘-opt-’ and the letter, ‘-n’ in the same positions within the names.</p> <p>Phonetic similarity stems from the fact that both names contain three syllables and the last five letters of the names are indistinguishable when spoken (‘-optin’ vs. ‘-optan’).</p> <p>One overlapping product characteristic may be the dose (one [tablet] vs. one [drop]).</p>	<p>The first letter, ‘I’ in the marketed name Isoptin does not look similar to the first letter of the proposed proprietary name, Zioptan. The prefixes for Isoptin and Zioptan (‘Is’ vs. ‘Zi’) do not sound similar when spoken because the ‘Z’ (in Zioptan) elicits a hissing sound prior to articulating the ‘i’. These differences may help to distinguish between this name pair.</p> <p>Differing product characteristics include the route of administration (oral or intravenous vs. ocular) and the frequency of administration (one time or three times daily vs. once daily).</p> <p>Isoptin is available in more than one strength and this information is necessary to dispense/administer the medication as intended.</p>
<p>Ceptaz (ceftazidime) injection</p> <p><i>(discontinued but generic products exist in the marketplace)</i></p>	<p>Orthographic similarity stems from the similar appearance of their first letters (‘C’ vs. ‘Z’ in some handwriting samples and their shared letter</p>	<p>The proposed proprietary name, Zioptan, has two letters between the first letter and its down stroke vs. one letter in the same position in the marketed name, Ceptaz. This additional letter gives the name, Zioptan a longer appearance when scripted. This difference may help to distinguish between this name pair.</p> <p>Differing product characteristics include the dose (1</p>

<p>500 mg/vial, 1 gram/vial, 2 gram/vial, 10 gram/vial</p> <p><i>Usual dose:</i></p> <p>1 gram to 2 grams IV every 8 hours (or every 12 hours)</p>	<p>combinations ('pt').</p>	<p>gram vs. one drop), the route of administration (intravenous vs. ocular) and the frequency of administration (every 8 or 12 hours vs. once daily).</p>
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Proposed name: Zioptan (Tafluprost) Ophthalmic Solution	Strength(s): 0.015%	Usual dose: One drop in the conjunctival sac of the affected eye(s) once daily in the evening
Failure Mode: Incorrect Product Ordered/ Selected/Dispensed or Administered due to name Confusion	Causes (could be multiple)	Prevention of Failure Mode
<p>Zephiran (Benzalkonium Chloride) Topical Solution 50%</p> <p><u>Usual dose:</u> Used as an antiseptic of the skin, mucous membranes, and wounds; may also be used preoperatively for preparation of the skin</p>	<p>Orthographic similarity stems from the fact that both names begin with the same letter, 'Z' and end with the same two letters, '-an'.</p> <p>Additionally, both names have a down stroke, 'p' and an up stroke ('h' or 't').</p> <p>One potentially overlapping product characteristic is that they are both topical products although used on different areas of the body (skin vs. eye).</p> <p>Both products are available as a single strength and therefore, this information does not have to be included on a prescription prior to dispensing/administering the medications.</p>	<p>The letters which trail the up strokes within these names differ in length. For example, there are four letters, 'iran' which follow the up stroke, 'h' in the marketed name, Zephiran which is in contrast to the two letters following the up stroke 't' in the proposed name, Zioptan. This difference gives these names different shapes and may help to distinguish between them.</p> <p>Differing product characteristics include the dose (non-specific vs. one drop) and frequency of administration (as necessary vs. once daily).</p>

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/s/

DENISE V BAUGH
08/30/2011

TODD D BRIDGES
08/30/2011

CAROL A HOLQUIST
08/31/2011