

**CENTER FOR DRUG EVALUATION AND
RESEARCH**

APPLICATION NUMBER:
202833Orig1s000

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--Preaction

Date: November 10, 2011

Reviewer(s): Teresa McMillan, PharmD, Safety Evaluator
Division of Medication Error Prevention and Analysis

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Division of Medication Error, Prevention, and Analysis

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

Drug Name(s): Picato (Ingenol Mebutate) Topical Gel
& Strengths 0.015% and 0.05%

Application Type/Number: NDA 202833

Applicant/sponsor: Leo Pharmaceuticals

OSE RCM #: 2011-2984

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1 INTRODUCTION

This re-assessment of the proposed proprietary name, Picato 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, Picato, acceptable in OSE Review #2011-2211 dated August 8, 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 proposed or approved since the previous OSE proprietary name review. For this review we used the same search criteria described in OSE Review #2011-2211. Since none of the proposed product characteristics were altered we did not re-evaluate previous names of concern. The searches of the databases yielded 7 new names (Di-atro, Pindac, Revatio, Potiga, (b) (4) and Revonto), thought to look similar to Picato and represent a potential source of drug name confusion.

DMEPA bases the overall risk assessment on the findings of a Failure Mode and Effects Analysis (FMEA) of the proposed proprietary name, and focuses on the avoidance of medication errors. Failure mode and effects analysis was applied to determine if the proposed proprietary name could potentially be confused with Di-atro, Pindac, Revatio, Potiga, (b) (4), and Revonto and lead to medication errors. This analysis determined that the name similarity between Picato and the identified names was unlikely to result in medication error for the reasons presented in Appendix A and B.

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 October 18, 2011. OPDP re-reviewed the proposed name on November 10, 2011 and had no concerns regarding the proposed name from a promotional perspective.

3 CONCLUSIONS

The re-evaluation of the proposed proprietary name, Picato, did not identify any vulnerability that would result in medication errors with the additional names noted in this review. Thus, DMEPA has no objection to the proprietary name, Picato, 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 Office of Dermatology and Dental 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 Janet Anderson, OSE project manager, at 301-796-0675.

4 REFERENCES

1. Merchant, L; OSE review #2011-2211, Proprietary Name Review of Picato; August 8, 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: Proprietary names not likely to be confused or not used in usual practice settings for the reasons described.

Proprietary Name	Active Ingredient	Similarity to Picato	Failure Preventions
Di-atro	Atropine Sulfate; Diphenoxylate Hydrochloride	Look	This product has been discontinued with no generic equivalents. The application status is withdrawn (FR effective).
Pindac	Pinacidil	Look	This product has been discontinued with no generic equivalents. The application status is withdrawn (FR effective).
(b) (4)			

Appendix B: FMEA Table

Product Name with potential for confusion	Causes (Can be Multiple)	Rationale for Failure Mode Prevention
<p>Picato (Ingenol Mebutate) Topical Gel</p> <p>0.015% and 0.05%</p>	<p>N/A</p>	<p>One application once daily for 2 to 3 days.</p> <p>Postmarketing experience notes prescribers may write the directions as “Use as directed” for topical products.</p>
<p>Revatio (Sildenafil Citrate) Tablets; Intravenous Solution</p> <p><u>Tablets:</u> 20 mg Intravenous Solution: 10 mg base/12.5 mL</p> <p><u>Usual Dose</u> Tablets: Take 20 mg three times daily, approximately 4-6 hours apart, with or without food.</p> <p>Intravenous Solution: Inject 10 mg (12.5 mL) three times daily administered as an intravenous bolus injection.</p>	<p><u>Orthographic:</u> The letter string ‘Revat’ can be scripted to appear similar to the letter string ‘Picat’.</p> <p>Both names end with the letter ‘o’.</p> <p>Both names contain two upstrokes (‘R’, ‘t’ vs. ‘P’, ‘t’) in similar positions.</p> <p>Both names contain one cross-stroke (‘t’).</p>	<p><u>Orthographic:</u> When scripted the name Revatio appears slightly longer than Picato because of the additional letter in Revatio (i.e. 7 letters in Revatio vs. 6 letters in Picato).</p> <p><u>Usual Dose:</u> One application vs. 20 mg or 10 mg (12.5 mL)</p> <p><u>Strength:</u> 0.015% and 0.05% vs. 20 mg or 10 mg base/12.5 mL</p> <p><u>Frequency of Administration:</u> Once daily vs. Three times daily</p> <p><u>Dosage Form and Route of Administration</u> Oral Tablets or Intravenous Solution vs. Topical Gel</p>

<p>Potiga (Ezogabine) Tablets, USP</p> <p><u>Tablets:</u> 50 mg, 100 mg, 200 mg, 300 mg, and 400 mg</p> <p><u>Usual Dose</u> Take 200-400 mg by mouth three times daily.</p>	<p><u>Orthographic:</u> The letter string 'Po' can be scripted to appear similar to the letter string 'Pi'.</p> <p>The letter 'a' when scripted can appear similar to the letter 'o'.</p> <p>Both names contain two upstrokes ('P', 't')</p> <p>Both names contain one cross-stroke ('t').</p>	<p><u>Orthographic:</u> The upstroke/cross-stroke in each name is positioned in different locations – third 't' vs. fifth 't'. Potiga contains a downstroke ('g') and Picato does not.</p> <p><u>Usual Dose:</u> 200-400 mg vs. One application</p> <p><u>Strength:</u> 50 mg, 100 mg, 200 mg, 300 mg, and 400 mg vs. 0.015% and 0.05%</p> <p><u>Frequency of Administration:</u> Once daily vs. Three times daily</p> <p><u>Dosage Form and Route of Administration</u> Oral Tablets vs. Topical Gel</p>
(b) (4)		

<p>Revonto (Dantrolene Sodium for Injection) 20 mg/vial</p> <p><u>Injection</u> 20 mg/vial</p> <p><u>Usual Dose</u> Give a minimum of 1 mg/kg, and continuing until symptoms subside or the maximum cumulative dose of 10 mg/kg has been reached, or 2.5 mg/kg, starting approximately 1.25 hours before anticipated anesthesia and infused over approximately 1 hour.</p> <p>**This proprietary name was found acceptable in OSE Review #2009-1530. The application is currently approved. However, the product is not currently marketed.</p>	<p><u>Orthographic:</u> The letter string 'Revo' can be scripted to appear similar to the letter string 'Pica'.</p> <p>Both names end with the letter string 'to'.</p> <p>Both names contain two upstrokes ('R', 't' vs. 'P', 't') in similar positions.</p> <p>Both names contain one cross-stroke ('t').</p>	<p><u>Orthographic:</u> When scripted the name Revonto appears slightly longer than Picato because the name Revonto does not contain the letter 'I' and has an additional letter (i.e. 7 letters in Revonto vs. 6 letters in Picato)</p> <p><u>Usual Dose:</u> 1 mg/kg or 2.5 mg/kg vs. One application</p> <p><u>Strength:</u> 20 mg/vial vs. 0.015% and 0.05%</p> <p><u>Frequency of Administration:</u> Once weekly vs. Three times daily</p> <p><u>Dosage Form and Route of Administration</u> Intravenous Powder for Injection vs. Topical Gel</p>
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/s/

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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

Date: August 8, 2011

Application Type/Number: NDA 202833

Through: Carol Holquist, RPh, Director
Division of Medication Error Prevention and Analysis
(DMEPA)

From: Lubna Merchant MS, Pharm.D, Acting Team Leader
Division of Medication Error Prevention and Analysis

Subject: Proprietary Name Review

Drug Name and Strengths: Picato (Igneinol Mebutate) Topical Gel, 0.015% and 0.05%

Applicant: Leo Pharmaceuticals

OSE RCM #: 2011-2211

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EXECUTIVE SUMMARY

This review summarizes DMEPA's evaluation of the proposed proprietary name, Picato, for Ingenol Mebutate Topical Gel. Our evaluation did not identify concerns that would render the name unacceptable based on the product characteristics and safety profile known at the time of this review. Thus, DMEPA finds the proposed proprietary name Picato acceptable for this product. The proposed proprietary name must be re-reviewed 90 days before approval of the NDA. DMEPA will notify the Applicant of these findings via letter

Additionally, 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.

1 BACKGROUND

1.1 INTRODUCTION

This review responds to a request from Leo Pharmaceuticals dated May 30, 2011 for a promotional and safety assessment of the proposed proprietary name, Picato.

1.2 REGULATORY HISTORY

DMEPA found the prior proprietary name, (b) (4) This was conveyed to the Applicant in a teleconference, dated May 23, 2011. Subsequent to notification, the Applicant withdrew the name (b) (4) and submitted Picato for further evaluation.

1.3 PRODUCT INFORMATION

Picato (Ingenol Mebutate) is a directed cell death inducer (b) (4) indicated for the topical treatment of actinic keratosis on the face and scalp and on the trunk and extremities. The usual recommended dose of Picato for the treatment of actinic keratosis on the face and scalp is 0.015% once daily for 3 consecutive days and 0.05% for the trunk and extremities once daily for 2 consecutive days. Picato will be available in unit dose tubes (0.47 gm) with 2 or 3 units packaged in a carton.

2 METHODS AND MATERIALS

Appendix A describes the general methods and materials used by the Division of Medication Error Prevention and Analysis (DMEPA) when conducting a proprietary name risk assessment for all proprietary names. Sections 2.1 and 2.2 identify specific information associated with the methodology for the proposed proprietary name, Picato. Section 2.3 identifies specific information associated with the methodology for assessment of the proposed labels and labeling.

2.1 SEARCH CRITERIA

For this review, particular consideration was given to drug names beginning with the letter 'P' when searching to identify potentially similar drug names, as 75% of the

confused drug names reported by the USP-ISMP Medication Error Reporting Program involve pairs beginning with the same letter.^{1,2}

To identify drug names that may look similar to Picato, the DMEPA safety evaluators also considers the orthographic appearance of the name on lined and unlined orders. Specific attributes taken into consideration include the length of the name (six letters), upstrokes (one, capital letter ‘P’ and lower case ‘t’), down strokes (one, lower case ‘p’), cross strokes (one, lower case ‘t’), and dotted letters (one, lower case ‘i’). Additionally, several letters in Picato may be vulnerable to ambiguity when scripted (See Appendix B). As a result, the DMEPA staff also considers these alternate appearances when identifying drug names that may look similar to Picato.

When searching to identify potential names that may sound similar to Picato, the DMEPA staff search for names with similar number of syllables (three), stresses (Pi-cato), and placement of vowel and consonant sounds. (See Appendix B). The Applicant’s intended pronunciation (pi’ kæto) was also taken into consideration, as it was included in the Proprietary Name Review Request. Moreover, names are often mispronounced and/or spoken with regional accents and dialects, so other potential pronunciations of the name are considered.

2.2 PRESCRIPTION ANALYSIS STUDIES

In order to evaluate the potential for misinterpretation of the proposed proprietary name in handwriting and verbal communication of the name, the following inpatient medication order, outpatient and verbal prescription was communicated during the FDA prescription studies. (See Appendix C for samples and results).

3 RESULTS

The following sections describe the findings from our database searches, expert panel discussion, prescription analysis studies and safety evaluator risk assessment.

3.1 DATA BASE AND INFORMATION SOURCES

The DMEPA safety evaluator searches yielded a total of 23 names as having some similarity to the name Picato.

Twenty two of the names were thought to look like Picato. These include: Prolia, Perisol, Dical, Dical-D, Peridex, Biaxin, Bicitra, Trecator, Picot, Rosula, Percocet, Diocto, Panto, Portia, Pentasa, Pilocar, Prezista, Bextra, Ricola, Pitocin, Profe, and Picula One name was thought to look and sound similar to Picato: Picato***.

Additionally, DMEPA staff did not identify any United States Adopted Names (USAN) stems in the proposed proprietary name, as of June 10, 2011.

¹ Institute for Safe Medication Practices. Confused Drug name List (1996-2006). Available at <http://www.ismp.org/Tools/confuseddrugnames.pdf>

² Kondrack, G and Dorr, B. ³ National Coordinating Council for Medication Error Reporting and Prevention. <http://www.nccmerp.org/aboutMedErrors.html>. Last accessed 10/11/2007.

3.2 EXPERT PANEL DISCUSSION

The Expert Panel reviewed the pool of names identified by DMEPA staff (See Section 3.1 above) and noted no additional names thought to have orthographic or phonetic similarity to Picato.

DDMAC had no concerns regarding the proposed name from a promotional perspective, and did not offer any additional comments relating to the proposed name.

3.3 PRESCRIPTION ANALYSIS STUDIES

A total of 30 practitioners responded to the prescription analyses studies. In the written prescription study, 20 of the participants interpreted the scripted name sample correctly in both samples. In the verbal studies, seven of the participants misinterpreted the name incorrectly. Most were phonetic variations of the name. None of the responses overlapped or resembled a marketed product name. See Appendix C for the complete listing of interpretations from the verbal and written prescription studies.

3.4 SAFETY EVALUATOR SEARCHES

Independent searches by the primary Safety Evaluator identified five additional names which were thought to look or sound similar to Picato and represent a potential source of drug name confusion. These names include: Procrit, Recort, (b) (4) Panlor, and Kiacta

Thus, we evaluated a total of 28 names: 5 identified by the safety evaluator and 23 identified in section 3.1 above.

3.5 COMMENTS FROM THE DIVISION OF DERMATOLOGY AND DENTAL PRODUCTS (DDDP)

3.5.1 Initial Phase of Review

In response to the OSE, April 15, 2011 e-mail, DDDP did not forward any concerns on the proposed name at the initial phase of the name review.

3.5.2 Midpoint of Review

DMEPA notified the DDDP via e-mail that we had no concerns with the proposed proprietary name, Picato, on June 10, 2011. Per e-mail correspondence from the DDDP on June 17, 2011, they indicated the Division had no other issues with the proposed proprietary name, Picato and had no additional comments.

4 DISCUSSION

This proposed name was evaluated from a safety and promotional perspective based on the product characteristics provided by the Applicant. We sought input from pertinent disciplines involved with the review of this application and considered their comments accordingly.

4.1 PROMOTIONAL ASSESSMENT

DDMAC had no concerns regarding the proposed name from a promotional perspective, and did not offer any additional comments relating to the proposed name. DMEPA, and DDDP concurred with the findings of DDMAC's promotional assessment of the proposed name.

4.2 SAFETY ASSESSMENT

DMEPA evaluated 28 names for their potential similarity to the proposed name, Picato. We did not identify any other aspects of the name that would represent a potential source for error.

Eleven of the 28 potentially similar names did not undergo failure mode and effect analysis (FMEA) for the reasons listed in Appendix D.

Failure mode and effects analysis (FMEA) was applied to determine if the proposed proprietary name could potentially be confused with the remaining 17 names and lead to medication errors. This analysis determined that the name similarity between Picato and all of the identified names was unlikely to result in medication error for the reasons presented in Appendices E and F.

5 CONCLUSIONS AND RECOMMENDATIONS

The Proprietary Name Risk Assessment findings indicate that the proposed name, Picato, is not vulnerable to name confusion that could lead to medication errors, nor is it considered promotional. Thus, the Division of Medication Error Prevention and Analysis (DMEPA) has no objection to the proprietary name, Picato, for this product at this time.

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. The Applicant will be notified of this determination via letter from DMEPA.

5.1 COMMENTS TO THE APPLICANT

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

The proposed proprietary name must be re-reviewed 90 days before approval of the NDA. If we find the name unacceptable following the re-review, we will notify you.

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.

6 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 Applicant 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. Stat!Ref (www.statref.com)

Stat!Ref contains full-text information from approximately 30 texts; it includes tables and references. Among the database titles are: Handbook of Adverse Drug Interactions, Rudolphs Pediatrics, Basic Clinical Pharmacology, and Dictionary of Medical Acronyms Abbreviations.

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 potential for confusion between the proposed proprietary name and the proprietary and established names of drug products existing in the marketplace and those pending IND, NDA, BLA, and ANDA products currently under review by the Center. 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.³

For the proposed proprietary name, DMEPA staff search a standard set of databases and information sources to identify names with orthographic and phonetic similarity and hold a Center for Drug Evaluation and Research (CDER) Expert Panel discussion to gather professional opinions on the safety of the proposed proprietary name. DMEPA staff also conducts internal CDER prescription analysis studies. When provided, DMEPA considers external prescription analysis study results and incorporate into the overall risk assessment.

The Safety Evaluator assigned to the Proprietary Name Risk Assessment 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 focuses on the avoidance of medication errors.

FMEA is a systematic tool for evaluating a process and identifying where and how it might fail.⁴ DMEPA uses FMEA to analyze whether the drug names identified with orthographic or phonetic similarity to the proposed proprietary name could cause confusion that subsequently leads to medication errors in the clinical setting. 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.

In addition, the product characteristics provide the context for the verbal and written communication of the drug names and can interact with the orthographic and phonetic attributes of the names to increase the risk of confusion when there is overlap or, in some instances, decrease the risk of confusion by helping to differentiate the products through dissimilarity. Accordingly, the DMEPA staff considers the product characteristics associated with the proposed drug 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.

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. Because drug name confusion can occur at any point in the medication use process, DMEPA staff 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.⁵ DMEPA provides the product characteristics considered for this review in section one.

The Division of Medication Error Prevention and Analysis considers the spelling of the name, pronunciation of the name when spoken, and appearance of the name when scripted. DMEPA also compares the spelling of the proposed proprietary name with the proprietary and established name of existing and proposed drug products because similarly spelled names may have greater likelihood to sound similar to one another when spoken or look similar to one another when scripted. DMEPA staff also examines the orthographic appearance of the proposed name using a number of different handwriting samples. Handwritten communication of drug names has a long-standing association with drug name confusion. Handwriting can cause similarly and even dissimilarly spelled drug name

⁴ Institute for Healthcare Improvement (IHI). Failure Modes and Effects Analysis. Boston. IHI:2004.

⁵ Institute of Medicine. Preventing Medication Errors. The National Academies Press: Washington DC. 2006.

pairs to appear very similar to one another. The similar appearance of drug names when scripted has led to medication errors. The DMEPA staff applies expertise gained from root-cause analysis of such 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). In addition, the DMEPA staff 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. If provided, DMEPA will consider the Applicant’s intended pronunciation of the proprietary name. However, DMEPA also considers a variety of pronunciations that could occur in the English language because the Applicant has little control over how the name will be spoken in clinical practice.

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		
	Potential causes of drug name similarity	Attributes examined to identify similar drug names	Potential Effects
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 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, the DMEPA staff also 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 staff conducts searches of 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 using the criteria outlined in Section 2.1. Section 6 provides a standard description of the databases used in the searches. To complement the process, the DMEPA staff use 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, the DMEPA staff review 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.

2. CDER Expert Panel Discussion

DMEPA conducts an Expert Panel Discussion to gather CDER professional opinions on the safety of the proposed product and the proposed proprietary name. 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). 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 DMEPA staff to the Expert Panel for consideration. Based on the clinical and professional experiences of the Expert Panel members, the Panel may recommend the addition of 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 Analysis 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 the 123 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 send their interpretations of the orders via e-mail to DMEPA.

4. Comments from the OND review Division or Generic drugs

DMEPA requests the Office of New Drugs (OND) or Office of Generic Drugs (OGD) Regulatory Division responsible for the application for their comments or concerns with the proposed proprietary name and 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 or 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 concur/not concur with DMEPA's final decision.

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, conducts a Failure Mode and Effects Analysis, and provides an overall 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.⁶ 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 Section one. 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?”

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. 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:

⁶ Institute for Healthcare Improvement (IHI). Failure Mode and Effects Analysis. Boston. IHI:2004.

“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.

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 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.

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 is likely to recommend that the Applicant select an alternative proprietary name and submit the alternate name to the Agency for DMEPA to 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 Applicant 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. However, the safety concerns set forth in criteria a through e 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 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 a preventable source of medication error that, in many instances, the Agency and/or Applicant 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. Applicants have undertaken higher-leverage strategies, such as drug name changes, in the past but at great financial cost to the Applicant 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 Applicants' 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. . (See Section 4 for limitations of the process).

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 is likely to recommend that the Applicant select an alternative proprietary name and submit the alternate name to the Agency for DMEPA to 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 Applicant 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.

Appendix B: Letters with possible orthographic or phonetic misinterpretation

Letters in Name, Picato	Scripted may appear as	Spoken may be interpreted as
Upper case 'P'	Q, y	b
Lower case 'i'	Any vowel	Any vowel
Lower case 'c'	E, a	k
Lower case 'a'	Any vowel	Any vowel
Lower case 't'	j, l, b, s	d
Lower case 'o'	Any vowel	Any vowel

Appendix C: FDA Prescription Study for Picato

Figure 1. Picato Study Samples (conducted on April 21, 2011)

HANDWRITTEN REQUISITION MEDICATION ORDER	VERBAL PRESCRIPTION
<p><u>Medication Order</u></p> <p><i>Picato 0.015%. AAA on face once daily x 3 days</i></p> <hr/> <p><u>Outpatient Rx</u></p> <p><i>Picato 0.05%</i> <i>VAD</i> <i>#1</i></p>	<p>Picato 0.05% use as directed #1</p>

Table 1: Responses to Prescription Study

INPATIENT	VOICE	OUTPATIENT
PICATO	ACADO	PICATO
PICATO	PICADA	PICATO
PICATO	PICADO	PICATO
PICATO	PICATO	PICATO
PICATO	PICATTA	PICATO
PICATO	PICATTO	PICATO
PRATO	PICCATO	PICATO
PRATO	PICOTTO	PICATO
		PICATO

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

Proprietary Name	Active Ingredient	Noted Similarity to Picato	Failure preventions
(b) (4)			
Kiacta	unknown	Look	Name identified in Facts and Comparison database. The name could not be retrieved from any pharmaceutical databases. Preliminary usage data indicates that this name is not used in prescribing.
Picato***	Ingenol Mebuatate	Look and Sound	Identified as the trademark associated with this product or NDA.
Dical	Calcium Phosphate	Look	Name identified in Clinical Pharmacology database. Limited information was retrieved from other pharmaceutical databases. Preliminary usage data indicates that this name is not used in prescribing.
Biaxin	Clarithromycin	Look	Lacks sufficient orthographic similarity to result in name confusion.
Picot	Sodium Bicarbonate	Look	International trade name for Antacid products, marketed in Mexico
Bextra	Valdecoxib	Look	Discontinued product with no available generics.
Perisol	Chlorhexidine Gluconate	Look	Name identified in Facts and Comparison database. Limited information was retrieved from other pharmaceutical databases. Preliminary usage data indicates that this name is not used in prescribing.
Picula	Soya lecithin, phyllanthus niruri and Javanese turmeric	Look	International trade name, marketed in Indonesia
Ricola	Natural herb cough drops	Look	Supplement or product not identified as drug and not dispensed pursuant to a prescription.
Panto	Pantothenic acid	Look	Name identified in Facts and Comparison database. The name could not be retrieved from any other pharmaceutical databases. Preliminary usage data indicates that this name is not used in prescribing.

Appendix E: Risk of name confusion minimized by preventions listed. (Potential contributing causes highlighted by *italics*)

Product name with potential for confusion	Similarity to Proposed Proprietary Name	Strength	Usual Dose (if applicable)	Failure Mode of name confusion prevented by stated product characteristics and/or orthographic differences as described.
Picato (Ingenol Mebutate) Topical Gel		0.015 % 0.05 %	One application once daily for 2 to 3 days Postmarketing experience notes prescribers may write the directions for use as “use as directed” for topical products).	
Pitocin (Oxytocin) Injection Solution	Look	10 units/mL	Induction of labor: Intravenous.: 0.5-1 milliunits per minute; gradually increase up to 6 milliunits per minute Postpartum bleeding: Intramuscular: Total dose of 10 units after delivery Intravenous.: 10-40 units by I.V. infusion in 1000 mL of intravenous fluid at a rate sufficient to control uterine atony. Adjunctive treatment of abortion: Intravenous.: 10-20 milliunits per minute	Orthographic difference: The position of the second upstroke ‘t’ is different in the two names giving them different shapes. Dose: One application vs. 0.5 units to 40 units Strength: Multiple (0.015 % and 0.05%) vs. single (10 units/mL). The numbers do not overlap. Frequency of use: Once daily vs. once during labor Dosage form and route of administration: Topical gel vs. injection solution given intravenously or intramuscularly
Profe (Polysaccharide-Iron Complex) Capsules	Look	180 mg	One to two capsules taken once daily	Dose: One application vs. one to two capsules Strength: Multiple (0.015 % and 0.05%) vs. single (180 mg). The numbers do not overlap. Dosage form and route of administration: Topical gel vs. oral capsule
Panlor (Acetaminophen, Caffeine, and Dihydrocodeine) Tablets	Look	712.8 mg/60 mg/ 32 mg per tablet	One tablet taken orally every 4 hours as needed	Dose: One application vs. one tablet Frequency of use: Once daily vs. every 4 hours as needed. Strength: Multiple (0.015 % and 0.05%) vs. single. The numbers do not overlap. Dosage form and route of administration: Topical gel vs. oral tablet

Product name with potential for confusion	Similarity to Proposed Proprietary Name	Strength	Usual Dose (if applicable)	Failure Mode of name confusion prevented by stated product characteristics and/or orthographic differences as described.
Picato (Ingenol Mebutate) Topical Gel		0.015 % 0.05 %	One application once daily for 2 to 3 days Postmarketing experience notes prescribers may write the directions for use as “use as directed” for topical products).	
Procrit (Epoetin Alfa) Injection Solution	Look	2000 units/mL 3000 units/mL 4000 units/mL 10,000 units/mL 20,000 units/mL 40,000 units/mL	50-150 units/kg one to three times/week. Individualize dosing to achieve and maintain hemoglobin levels between 10-12 g/dL.	Dose: One application vs. 50-150 units/kg Frequency of use: Once daily vs. one to three times per week Dosage form and route of administration: Topical gel vs. injection solution for subcutaneous or intravenous administration.
Bicitra (Sodium Citrate and Citric Acid)	Look	500 mg/334 mg per 5mL	Adults : 10 to 30 mL orally four times daily Pediatrics: 5 to 15 mL orally four times daily, or 2 to 3 mEq/kg/day in 3 to 4 divided doses	Dose: One application vs. 5 mL to 30 mL or 2 to 3 mEq/kg/day Frequency of use: Once daily vs. three to four times daily Dosage form and route of administration: Topical gel vs. oral solution. Strength: Multiple (0.015 % and 0.05%) vs. single (500 mg/334 mg). The numbers do not overlap.
Recort (Hydrocortisone) Topical Cream	Look	1%	One application applied topically 2 to 4 times daily	Strength: Multiple (0.015 % and 0.05%) vs. single (1 %). The numbers do not overlap. Frequency of use: Once daily vs. two to four times daily. Regulatory status: Prescription vs. over the counter

Product name with potential for confusion	Similarity to Proposed Proprietary Name	Strength	Usual Dose (if applicable)	Failure Mode of name confusion prevented by stated product characteristics and/or orthographic differences as described.
Picato (Ingenol Mebutate) Topical Gel		0.015 % 0.05 %	One application once daily for 2 to 3 days Postmarketing experience notes prescribers may write the directions for use as “use as directed” for topical products).	
Treacator (Ethionamide) Tablets	Look	250 mg	Adults: 15-20 mg/kg/day; (maximum: 1 g/day in 3-4 divided doses) Pediatrics: 15-20 mg/kg/day in 2 divided doses, not to exceed 1 g/day	Orthographic difference: Picato (six letters) appears shorter than Treacator (eight letters) when scripted. Dose: One application vs. 15-20 mg/kg/day Frequency of use: Once daily vs. two to four times daily Strength: Multiple (0.015 % and 0.05%) vs. single (250 mg). The numbers do not overlap Dosage form and route of administration: Topical gel vs. oral tablets.
Prolia (Denosumab) Injection Solution	Look	60 mg/mL	60 mg every 6 months given as a subcutaneous injection	Dose: One application vs. 60 mg Strength: Multiple (0.015 % and 0.05%) vs. single (60 mg/mL). The numbers do not overlap. Frequency of use: Once daily vs. every 6 months or once Dosage form and route of administration: Topical gel vs. injection solution given subcutaneously.
Dical-D (Calcium Phosphate and Vitamin D) Tablets	Look	117 mg/133 IU per tablet	One to two tablets by mouth once or twice daily.	Dose: One application vs. one to two tablets Strength: Multiple (0.015 % and 0.05%) vs. single (117 mg/133 IU). The numbers do not overlap. Dosage form and route of administration: Topical gel vs. oral tablets. Regulatory status: Prescription vs. over the counter

Product name with potential for confusion	Similarity to Proposed Proprietary Name	Strength	Usual Dose (if applicable)	Failure Mode of name confusion prevented by stated product characteristics and/or orthographic differences as described.
Picato (Ingenol Mebutate) Topical Gel		0.015 % 0.05 %	One application once daily for 2 to 3 days Postmarketing experience notes prescribers may write the directions for use as “use as directed” for topical products).	
Peridex (Chlorhexidine Gluconate) Oral Rinse	Look	0.12 %	Swish 15 mL (one capful) rinse around in mouth for 30 seconds, then expectorate twice daily	Dose: One application vs. 60 mg Strength: Multiple (0.015 % and 0.05%) vs. single (0.12%). The numbers do not overlap. Frequency of use: Once daily vs. twice daily Dosage form and route of administration: Topical gel vs. oral rinse.
Percocet (Oxycodone and Acetaminophen)	Look	2.5/325 mg 5/325 mg 7.5/325 mg 7.5/500 mg 10/325 mg 10/650 mg	1 to 2 tablets every 4-6 hrs prn	Orthographic difference: Picato (six letters) appear shorter than Percocet (8 letters) when scripted. The position of the second upstroke ‘t’ is different in the two names giving them different shapes. Dose: One application vs. one to two tablets Strength: Multiple (0.015 % and 0.05%) vs. (2.5/325 mg, 5/325 mg, 7.5/325 mg, 7.5/500 mg, 10/325 mg, and 10/650 mg). The numbers do not overlap. Frequency of use: Once daily vs. every 4 to 6 hours as needed Dosage form and route of administration: Topical gel vs. oral tablets.
Diocto (Docusate) Oral solution	Look	60 mg/mL 150 mg/mL	Adults: 50 mg-500 mg/day in 1-4 divided doses Pediatrics: 10 mg to 150 mg per day in 1-4 divided doses	Dose: One application vs. 10 mg to 500 mg Dosage form and route of administration: Topical gel vs. oral solution. Regulatory status: Prescription vs. over the counter

Product name with potential for confusion	Similarity to Proposed Proprietary Name	Strength	Usual Dose (if applicable)	Failure Mode of name confusion prevented by stated product characteristics and/or orthographic differences as described.
Picato (Ingenol Mebutate) Topical Gel		0.015 % 0.05 %	One application once daily for 2 to 3 days Postmarketing experience notes prescribers may write the directions for use as “use as directed” for topical products).	
Pentasa (Mesalamine) Capsules	Look	250 mg 500 mg	One gram taken orally four times daily	Orthographic difference: The position of the second upstroke ‘t’ is different in the two names. Dose: One application vs. one gram (2 to 4 capsules) Frequency of use: Once daily vs. four times daily Dosage form and route of administration: Topical gel vs. oral capsules.
Pilocar (Pilocarpine)	Look	1 % 2 % 4 %	Instill one to two drops in affected eye three to four time daily	Orthographic difference: The position of the second upstroke is different in the two names giving them different shapes. Dose: One application vs. one to two drops. Strength: Multiple (0.015 % and 0.05%) vs. (1 %, 2 %, and 4%). The numbers do not overlap. Dosage form and route of administration: Topical gel vs. ophthalmic drops.
Prezista (Darunavir)	Look	75 mg 150 mg 400 mg 600 mg	Adults: 600 mg-800 mg once daily to twice daily Pediatrics: 375 mg-600 mg once daily to twice daily	Orthographic difference: Picato (six letters) appear shorter than Prezista (8 letters) when scripted. The position of the second upstroke ‘t’ is different in the two names giving them different shapes. Dose: One application vs. 375 mg to 800 mg Dosage form and route of administration: Topical gel vs. oral tablets.

Appendix F: 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: Picato (Ingenol Mebutate) Topical Gel	Strength: 0.015 % and 0.05 %	Usual dose: One application once daily for 2 to 3 days Postmarketing experience notes prescribers may write the directions for use as “use as directed” for topical products).
Failure Mode: Name confusion	Causes (could be multiple)	Prevention of Failure Mode (name confusion)
Rosula (Sulfur and Sulfacetamide) Topical Wash, Cleanser and Cream <u>Strength:</u> 5%/10% <u>Dose:</u> Apply in a thin film 1-3 times per day. Cleansing products should be used 1-2 times/day.	Orthographic Similarities: Both names start with the similar letters ‘P’ vs. ‘R’ and have similar size and shape Overlap in Dose: Both products can be ordered as one application Overlap in Route: Both products are applied topically Overlap in Frequency: Both products can be dosed once daily	Orthographic differences in the names, in conjunction with differences in product characteristics, minimize the likelihood of medication error in the usual practice setting. Rationale: An order for Picato will require a strength as it is available in multiple strengths. There is no numerical overlap in strengths between the two. Preliminary usage data indicates that the name Rosula is rarely used in prescribing.
Portia (Ethinyl Estradiol and Levonorgestrel) Tablets <u>Strength:</u> 0.03 mg/0.15 mg <u>Dose:</u> One tablet given orally once daily <i>Postmarketing experience notes prescribers may write the directions for use as “use as directed” for oral contraceptives</i>	Orthographic Similarities: Both names start with the similar letters ‘Por’ vs. ‘Pic’ and have similar size and shape Overlap in Directions of use: Both products can be written as ‘use as directed’ Overlap in Frequency: Both products are dosed once daily	Differences in product characteristics minimize the likelihood of medication error in the usual practice setting. Rationale: An order for Picato will require a strength as it is available in multiple strengths, however orders for oral contraceptives do not typically include the strength on the order.

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/s/

LUBNA A MERCHANT
08/08/2011

CAROL A HOLQUIST
08/08/2011