CENTER FOR DRUG EVALUATION AND RESEARCH

APPLICATION NUMBER:

206947Orig1s000

PROPRIETARY NAME REVIEW(S)

PROPRIETARY NAME RECONSIDERATION REVIEW

Division of Medication Error Prevention and Analysis (DMEPA)
Office of Medication Error Prevention and Risk Management (OMEPRM)
Office of Surveillance and Epidemiology (OSE)
Center for Drug Evaluation and Research (CDER)

***** This document contains proprietary information that cannot be released to the public*****

Date of This Review:	December 23, 2014
Application Type and Number:	NDA 206947
Product Name and Strength:	Lenvima (lenvatinib) Capsules, 4 mg and 10 mg
Product Type:	Single Ingredient Product
Rx or OTC:	Rx
Applicant/Sponsor Name:	Eisai, Inc.
Submission Dates:	December 5, 2014
Panorama #:	2014-26286
DMEPA Safety Evaluator:	Otto Townsend, PharmD
DMEPA Team Leader:	Chi-Ming (Alice) Tu, PharmD
DMEPA Deputy Director:	Todd Bridges, RPh

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1 INTRODUCTION

This review responds to a December 5, 2014, request from Eisai, Incorporated to reconsider the proposed proprietary name, Lenvima, for NDA 206947.

2 REGULATORY HISTORY

The proposed proprietary name, Lenvima, was previously reviewed under IND 113656 and found acceptable.[1] As part of the NDA, we re-evaluated the proposed proprietary name, Lenvima, and found it unacceptable due to orthographic similarity to the currently marketed product, Levemir.[2] The Applicant was informed of our decision in writing on November 20, 2014.[3] The Applicant requested a teleconference with the Division to discuss questions related to the denial of the proposed name, Lenvima, and to discuss the path forward if Eisai wanted to pursue a reconsideration request for the name. The teleconference was granted and held on November 25, 2014.[4] The Applicant submitted a request for reconsideration of the proposed proprietary name, Lenvima, on December 5, 2014.

3 METHODS AND MATERIALS

We used Failure Mode and Effects Analysis (FMEA) in our review of Eisai's request for reconsideration. We also considered the safety concerns described in our previous review of the proposed proprietary name, Lenvima, as well as information provided by Eisai, which included new information on the intended specialty pharmacy distribution plan for Lenvima.

In the December 5, 2014 request for reconsideration, Eisai, Inc. stated that:

1. Lenvima will be distributed exclusively through two specialty pharmacies (Accredo and Biologics), as well as potentially 350B health care facilities that also must go through the above mentioned pharmacies to obtain Lenvima.

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[1] Schlick, J. Proprietary Name Review for Lenvima (lenvatinib) (IND 113656). Silver Spring (MD): Food and Drug Administration, Center for Drug Evaluation and Research, Office of Surveillance and Epidemiology, Division of Medication Error Prevention and Analysis (US); 2013 JUL 8. 38 p. OSE RCM No.: 2013-162.

[2] Townsend, OL. Proprietary Name Review for Lenvima (lenvatinib) (NDA 206947). Silver Spring (MD): Food and Drug Administration, Center for Drug Evaluation and Research, Office of Surveillance and Epidemiology, Division of Medication Error Prevention and Analysis (US); 2014 NOV 18. 26 p. OSE Panorama No.: 2014-26286.

[3] Taylor, K. Proprietary Name Denied, Lenvima (lenvatinib) (NDA 206947). Silver Spring (MD): Food and Drug Administration, Center for Drug Evaluation and Research, Office of Surveillance and Epidemiology, Division of Medication Error Prevention and Analysis (US); 2014 NOV 20. Panorama No.: 2014-26286.

[4] Fahnbulleh F. Meeting Minutes for Teleconference held 2014 NOV 25 for Lenvima (lenvatinib) (NDA 206947). Silver Spring (MD): Food and Drug Administration, Center for Drug Evaluation and Research, Office of Surveillance and Epidemiology, Division of Medication Error Prevention and Analysis (US); 2014 DEC 23. 4 p.

2. FDA consider the first Prescription Simulation Study conducted under the IND as valid evidence to mitigate risk of potential name confusion as that study did not identify Levemir as a potential conflict.
3. Lenvima and Levemir have different product characteristics (recommended dose of Lenvima is 24 mg vs. Levemir dosing is individualized so chance of overlapping dose is small; unit of measurement for Lenvima is "mg" vs. "units" for Levemir; Lenvima is a capsule taking orally once daily vs. Levemir is an injectable pen device administered once or twice daily; and Lenvima is stored at room temperature vs. Levemir is stored in the refrigerator).

4 DISCUSSION

When considering the new distribution information for the proposed Lenvima product, we also verified that both Accredo and Biologics specialty pharmacies do not carry Levemir in their pharmacies. Thus, the likelihood that an order for Lenvima will be confused with Levemir in the specialty pharmacies is minimal to none.

We again reviewed the first Prescription Simulation Study conducted under the IND and the second Prescription Simulation Study conducted under the NDA for orthographic similarity between the name pair Lenvima and Levemir. We note the two studies yielded different findings. We again considered that FDA's Phonetic and Orthographic Computer Analysis (POCA) calculated a combined score of 62% for the name pair.

We also again evaluated the product characteristics of each product. Although there is dose overlap (e.g., 24 mg vs. 24 units), in most circumstances the dose for Levemir will be individualized - so the chance of dose overlap is small. Lenvima and Levemir also have different distribution channels, routes of administration (oral versus subcutaneous), units of measurement (mg versus units), dosage forms (oral capsule versus solution for injection) and storage (room temperature versus refrigeration). When these factors are considered in totality for this name pair along with orthographic differences between these names, we conclude that the risk of name confusion between Lenvima and Levemir is unlikely.

5 CONCLUSIONS

The proposed proprietary name, Lenvima, is acceptable.

If you have further questions or need clarifications, please contact Frances Fahnbulleh, OSE project manager, at 301-796-0942.

5.1 COMMENTS TO THE APPLICANT

We have completed our review of the information submitted in support of your Request for Reconsideration of the proposed proprietary name, Lenvima. Based on the totality of information you submitted, we agree that the risk of confusion between Lenvima and Levemir is minimal. Therefore, we conclude that your proposed proprietary name, Lenvima is acceptable.

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

/s/

CHI-MING TU on behalf of OTTO L TOWNSEND
12/23/2014

CHI-MING TU
12/23/2014

TODD D BRIDGES
12/23/2014

PROPRIETARY NAME REVIEW

Division of Medication Error Prevention and Analysis (DMEPA)
Office of Medication Error Prevention and Risk Management (OMEPRM)
Office of Surveillance and Epidemiology (OSE)
Center for Drug Evaluation and Research (CDER)

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Date of This Review:	November 18, 2014
Application Type and Number:	NDA 206947
Product Name and Strength:	Lenvima (lenvatinib) Capsules, 4 mg and 10 mg
Product Type:	Single Ingredient Product
Rx or OTC:	Rx
Applicant/Sponsor Name:	Eisai, Inc.
Submission Date:	August 28, 2014
Panorama #:	2014-26286
DMEPA Primary Reviewer:	Otto L. Townsend, PharmD
DMEPA Team Leader:	Chi-Ming (Alice) Tu, PharmD
DMEPA Associate Director:	Lubna Merchant, MS, PharmD
DMEPA Acting Division Director:	Kellie Taylor, PharmD, MPH

Contents

1 INTRODUCTION

This review evaluates the proposed proprietary name, Lenvima, from a safety and misbranding perspective. The sources and methods used to evaluate the proposed name are outlined in the reference section and Appendix A respectively. The Applicant did not submit an external name study for this proposed proprietary name for this product.

1.1 PRODUCT INFORMATION

The following product information is provided in the August 28, 2014 proprietary name submission.

- Intended Pronunciation: lehn veema
- Active Ingredient: Lenvatinib
- Indication of Use: Radioiodine-refractory differentiated thyroid cancer
- Route of Administration: Oral
- Dosage Form: Capsules
- Strength: 4 mg and 10 mg
- Dose and Frequency: 24 mg (two 10 mg capsules and one 4 mg capsule) taken once daily.

  The daily dose is to be modified as needed according to the dose/toxicity management plan.
- How Supplied: 24 mg daily-dose carton containing 6 blister cards (each 5-day blister card contains ten 10 mg capsules and five 4 mg capsules)

  20 mg daily-dose carton containing 6 blister cards (each 5-day blister card contains ten 10 mg capsules)

  14 mg daily-dose carton containing 6 blister cards (each 5-day blister card contains five 10 mg capsules and five 4 mg capsules)
- Storage: Store at 25°C (77°F)

2 RESULTS

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

2.1 MISBRANDING ASSESSMENT

The Office of Prescription Drug Promotion (OPDP) determined that the proposed name would not misbrand the proposed product. DMEPA and the Division of Oncology Products 2 (DOP2) concurred with the findings of OPDP's assessment of the proposed name.

2.2 SAFETY ASSESSMENT

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

2.2.1 United States Adopted Names (USAN) Search

There is no USAN stem present in the proprietary name[1].

2.2.2 Components of the Proposed Proprietary Name

The Applicant did not provide a derivation or intended meaning for the proposed name, Lenvima, in their submission. This proprietary name is comprised of a single word that does not contain any components such as a modifier, route of administration, or dosage form that are misleading or can contribute to medication error.

2.2.3 FDA Name Simulation Studies

Ninety-five (95) practitioners participated in DMEPA's prescription studies. One response did overlap with the currently marketed product, Levemir. See section 3.1 for more details. Appendix B contains the results from the verbal and written prescription studies.

2.2.4 Comments from Other Review Disciplines at Initial Review

In response to the OSE, September 26, 2014 e-mail, the DOP2 did not forward any comments or concerns relating to the proposed proprietary name at the initial phase of the review.

[1]USAN stem search conducted on September 8, 2014.

2.2.5 Phonetic and Orthographic Computer Analysis (POCA) Search Results

Table 1 lists the number of names with the combined orthographic and phonetic score of ≥50% retrieved from our POCA search[2] organized as highly similar, moderately similar, or low similarity for further evaluation. Table 1 also includes names identified from the FDA Prescription Simulation.

Table 1. POCA Search Results	**Number of Names**
Highly similar name pair: combined match percentage score ≥70%	5
Moderately similar name pair: combined match percentage score ≥50% to ≤ 69%	127
Low similarity name pair: combined match percentage score ≤49%	0

2.2.6 Safety Analysis of Names with Potential Orthographic, Spelling, and Phonetic Similarities

We determined 131 of the 132 of names would not pose a risk for confusion as described in Appendix C through G. However, the proposed name could be confused with Levemir. The rationale for the risk of confusion is described in Section 3.1.

2.2.7 Communication of DMEPA's Analysis at Midpoint of Review

DMEPA communicated our findings to DOP2 via e-mail on November 7, 2014. At that time we also requested additional information or concerns that could inform our review. Per e-mail correspondence from DOP2 on November 12, 2014, they stated no additional concerns with the proposed proprietary name, Lenvima.

3 CONCLUSIONS

The proposed proprietary name is not acceptable from a safety perspective. The proposed name is vulnerable to name confusion with Levemir. Therefore, the decision to deny the name will be communicated to the Applicant via letter (See ***Section 3.1).***

If you have further questions or need clarifications, please contact Frances Fahnbulleh, OSE project manager, at 301-796-0942.

3.1 COMMENTS TO THE APPLICANT

We have completed our review of the proposed proprietary name, Lenvima, and have concluded that this name is unacceptable because Lenvima is orthographically similar to the currently marketed product, Levemir (Insulin detemir).

[2] POCA search conducted on September 10, 2014.

With respect to the orthographic similarity of the names, both names are seven characters in length, begin with the similar letter strings, "Le" vs. "Le" and the infixes for the name pair are similar, "vim" vs. "vem". Furthermore, FDA's Phonetic and Orthographic Computer Analysis (POCA) calculates a combined score of 62% for Lenvima and Levemir, which further suggests that the names have look-alike similarity. Additionally, during the current evaluation of the proposed name, one participant in the inpatient written portion of the FDA Prescription Simulation study misinterpreted the name Lenvima as "Levemir," a drug currently marketed for the treatment of diabetes mellitus. The sample below was used as part of the Prescription Simulation study where Lenvima was misinterpreted as "Levemir."

Given this finding, we carefully analyzed the product characteristics to determine whether or not the name similarity would be likely to lead to errors in the usual practice setting. Although Lenvima will be available in multiple strengths, both Lenvima and Levemir share the same frequency of administration (once daily) and have usual doses with numeric similarities. Lenvima is dosed as 24 mg, 20 mg, 14 mg, or 10 mg. Levemir dosing is based on patient requirements and doses of 24 units, 20 units, 14 units, or 10 units are conceivable doses that are used in the maintenance of glycemic control in diabetes mellitus.

We note that Lenvima is a capsule administered orally and Levemir is solution administered as an injection. Although the products have different routes of administration (oral vs. subcutaneous injection) and dosage forms, the single route of administration and the dosage form could be omitted from a written prescription. We also acknowledge that the units of measure are different for these products (units vs. mg), however post-marketing surveillance of other drug products supports this conclusion. Specifically, we have reviewed reports of errors involving confusion between similarly named drug products, even when dosage form, route of administration and units of measure differs.[3,4,5]

We acknowledge that this determination differs from our previous evaluation and conclusion communicated in the letter dated July 9, 2013. We have reached a different determination with respect to the safety of your proposed name primarily because of the new safety information identified in the FDA Prescription Simulation Study. In our previous evaluation of Lenvima, we identified Levemir as having some similarity to Lenvima but we concluded at the time that orthographic and strength differences in the names would distinguish these names in written communications. At the time of our

[3] Institute for Safe Medication Practices. Safety briefs: Advair-Advicor mix-up. ISMP Med Saf Alert Community/Ambulatory Care. 2003; 2(8): 1-2.

[4] Institute for Safe Medication Practices. Safety briefs: Include purpose on Rx. ISMP Med Saf Alert Acute Care. 2011;16(17):1-2.

[5] Institute for Safe Medication Practices. Errors and near misses prompt warning to practitioners and a call to rename CELEBREX. ISMP Med Saf Alert Acute Care. 1999;4(7):1.

previous analysis, we had conducted simulation studies and there were no misinterpretations of Lenvima as Levemir in those simulation studies.

Several reasons could explain why our previous name simulation studies did not produce a misinterpretation of Lenvima as "Levemir". The simulation studies were performed using different handwriting and voice samples of the proposed name and the current simulation study was conducted using a new group of FDA participants. Both or either of these changes could contribute to differences in the results of the simulation studies.

Additionally, name simulation studies are not designed to detect errors with statistical significance since such studies would call for a large sample size. Thus, a negative finding (i.e. no name confusion) from a simulation study using a small sample size does not provide assurances that errors are unlikely to occur. However, FDA believes our simulation studies have good predictive value when an error does occur because the likelihood of observing an error in a small study is low, and therefore an occurrence within this study is likely to predict errors that will occur between Lenvima and Levemir in actual use. Thus, this new information represents a safety concern that prompted us to reverse the conclusion previously reached on the acceptability of the name, Lenvima.

Collectively, our analysis of the name similarity, post-marketing experience with other reported errors, and the prescription simulation study misinterpretation lead us to conclude that the name Lenvima is vulnerable to confusion with Levemir and would result in harmful errors. Thus, we find your name unacceptable.

4 REFERENCES

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

   USAN Stems List contains all the recognized USAN stems.

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

POCA is a system that FDA designed. As part of the name similarity assessment, POCA is used to evaluate proposed names via a phonetic and orthographic algorithm. The proposed proprietary name is converted into its phonemic representation before it runs through the phonetic algorithm. Likewise, an orthographic algorithm exists that operates in a similar fashion. POCA is publicly accessible.

Drugs@FDA

Drugs@FDA is an FDA Web site that contains most of the drug products approved in the United States 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* and *generic drugs*; *therapeutic biological products*, *prescription* and *over-the-counter* human drugs; and *discontinued drugs* (see Drugs @ FDA Glossary of Terms, available at http://www.fda.gov/Drugs/InformationOnDrugs/ucm079436.htm#ther_biological).

RxNorm

RxNorm contains the names of prescription and many OTC drugs available in the United States. RxNorm includes generic and branded:

- Clinical drugs – pharmaceutical products given to (or taken by) a patient with therapeutic or diagnostic intent
- Drug packs – packs that contain multiple drugs, or drugs designed to be administered in a specified sequence

Radiopharmaceuticals, contrast media, food, dietary supplements, and medical devices, such as bandages and crutches, are all out of scope for RxNorm (http://www.nlm.nih.gov/research/umls/rxnorm/overview.html#).

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.

APPENDICES

Appendix A

FDA's Proprietary Name Risk Assessment evaluates proposed proprietary names for misbranding and safety concerns.

1. **Misbranding Assessment**: For prescription drug products, OPDP assesses the name for misbranding concerns. . For over-the-counter (OTC) drug products, the misbranding assessment of the proposed name is conducted by DNCE. OPDP or DNCE evaluates proposed proprietary names to determine if the name is false or misleading, such as by making misrepresentations with respect to safety or efficacy. For example, a fanciful proprietary name may misbrand a product by suggesting that it has some unique effectiveness or composition when it does not (21 CFR 201.10(c)(3)). OPDP or DNCE provides their opinion to DMEPA for consideration in the overall acceptability of the proposed proprietary name.
2. **Safety Assessment**: The safety assessment is conducted by DMEPA, and includes the following:

a. Preliminary Assessment: 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.) See prescreening checklist below in Table 2*. 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. [6]

[6] National Coordinating Council for Medication Error Reporting and Prevention. http://www nccmerp.org/aboutMedErrors html. Last accessed 10/11/2007.

***Table 2- Prescreening Checklist for Proposed Proprietary Name**

	Answer the questions in the checklist below. Affirmative answers to any of these questions indicate a potential area of concern that should be carefully evaluated as described in this guidance.
Y/N	**Is the proposed name obviously similar in spelling and pronunciation to other names?**
	Proprietary names should not be similar in spelling or pronunciation to proprietary names, established names, or ingredients of other products.
Y/N	**Are there medical and/or coined abbreviations in the proprietary name?**
	Proprietary names should not incorporate medical abbreviations (e.g., QD, BID, or others commonly used for prescription communication) or coined abbreviations that have no established meaning.
Y/N	**Are there inert or inactive ingredients referenced in the proprietary name?**
	Proprietary names should not incorporate any reference to an inert or inactive ingredient in a way that might create an impression that the ingredient's value is greater than its true functional role in the formulation (21 CFR 201.10(c)(4)).
Y/N	**Does the proprietary name include combinations of active ingredients?**
	Proprietary names of fixed combination drug products should not include or suggest the name of one or more, but not all, of its active ingredients (see 21 CFR 201.6(b)).
Y/N	**Is there a United States Adopted Name (USAN) stem in the proprietary name?**
	Proprietary names should not incorporate a USAN stem in the position that USAN designates for the stem.
Y/N	**Is this proprietary name used for another product that does not share at least one common active ingredient?**
	Drug products that do not contain at least one common active ingredient should not use the same (root) proprietary name.
Y/N	**Is this a proprietary name of a discontinued product?**
	Proprietary names should not use the proprietary name of a discontinued product if that discontinued drug product does not contain the same active ingredients.

b. Phonetic and Orthographic Computer Analysis (POCA): Following the preliminary screening of the proposed proprietary name, DMEPA staff evaluates the proposed name against potentially similar names. In order to identify names with potential similarity to the proposed proprietary name, DMEPA enters the proposed proprietary name in POCA and queries the name against the following drug reference databases, Drugs@fda, CernerRxNorm, and names in the review pipeline using a 50% threshold in POCA. DMEPA reviews the combined orthographic and phonetic matches and group the names into one of the following three categories:

- Highly similar pair: combined match percentage score ≥70%.
- Moderately similar pair: combined match percentage score ≥50% to ≤ 69%.
- Low similarity: combined match percentage score ≤49%.

Using the criteria outlined in the check list (Table 3-5) that corresponds to each of the three categories (highly similar pair, moderately similar pair, and low similarity), DMEPA evaluates the name pairs to determine the acceptability or non-acceptability of a proposed proprietary name. The intent of these checklists is to increase the transparency and predictability of the safety determination of whether a proposed name is vulnerable to confusion from a look-alike or sound-alike perspective. Each bullet below corresponds to the name similarity category cross-references the respective table that addresses criteria that DMEPA uses to determine whether a name presents a safety concern from a look-alike or sound-alike perspective.

- For highly similar names, differences in product characteristics often cannot mitigate the risk of a medication error, including product differences such as strength and dose. Thus, proposed proprietary names that have a combined score of ≥ 70 percent are at risk for a look-alike sound-alike confusion which is an area of concern (See Table 3).
- Moderately similar names with overlapping or similar strengths or doses represent an area for concern for FDA. The dosage and strength information is often located in close proximity to the drug name itself on prescriptions and medication orders, and it can be an important factor that either increases or decreases the potential for confusion between similarly named drug pairs. The ability of other product characteristics to mitigate confusion (e.g., route, frequency, dosage form, etc.) may be limited when the strength or dose overlaps. We review such names further, to determine whether sufficient differences exist to prevent confusion. (See Table 4).
- Names with low similarity that have no overlap or similarity in strength and dose are generally acceptable (See Table 5) unless there are data to suggest that the name might be vulnerable to confusion (e.g., prescription simulation study suggests that the name is likely to be misinterpreted as a marketed product). In these instances, we would reassign a low similarity name to the moderate similarity category and review according to the moderately similar name pair checklist.

c. FDA Prescription Simulation Studies: DMEPA staff also conducts a prescription simulation studies using FDA health care professionals.

   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.

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

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

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

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.

Table 3. Highly Similar Name Pair Checklist (i.e., combined Orthographic and Phonetic score is ≥ 70%).

Answer the questions in the checklist below. Affirmative answers to some of these questions suggest that the pattern of orthographic or phonetic differences in the names may render the names less likely to confusion, provided that the pair do not share a common strength or dose.			
Orthographic Checklist		Phonetic Checklist	
Y/N	Do the names begin with different first letters? *Note that even when names begin with different first letters, certain letters may be confused with each other when scripted.*	**Y/N**	Do the names have different number of syllables?
Y/N	Are the lengths of the names dissimilar* when scripted? **FDA considers the length of names different if the names differ by two or more letters.*	**Y/N**	Do the names have different syllabic stresses?
Y/N	Considering variations in scripting of some letters (such as *z* and *f*), is there a different number or placement of upstroke/downstroke letters present in the names?	**Y/N**	Do the syllables have different phonologic processes, such vowel reduction, assimilation, or deletion?
Y/N	Is there different number or placement of cross-stroke or dotted letters present in the names?	**Y/N**	Across a range of dialects, are the names consistently pronounced differently?
Y/N	Do the infixes of the name appear dissimilar when scripted?		
Y/N	Do the suffixes of the names appear dissimilar when scripted?		

Table 4: Moderately Similar Name Pair Checklist (i.e., combined score is ≥50% to ≤69%).

Step 1	Review the DOSAGE AND ADMINISTRATION and HOW SUPPLIED/STORAGE AND HANDLING sections of the prescribing information (or for OTC drugs refer to the Drug Facts label) to determine if strengths and doses of the name pair overlap or are very similar. Different strengths and doses for products whose names are moderately similar may decrease the risk of confusion between the moderately similar name pairs. Name pairs that have overlapping or similar strengths or doses have a higher potential for confusion and should be evaluated further (see Step 2). Because the strength or dose could be used to express an order or prescription for a particular drug product, overlap in one or both of these components would be reason for further evaluation. For single strength products, also consider circumstances where the strength may not be expressed. For any i.e. drug products comprised of more than one active ingredient, consider whether the strength or dose may be expressed using only one of the components. To determine whether the strengths or doses are similar to your proposed product, consider the following list of factors that may increase confusion: o Alternative expressions of dose: 5 mL may be listed in the prescribing information, but the dose may be expressed in metric weight (e.g., 500 mg) or in non-metric units (e.g., 1 tsp, 1 tablet/capsule). Similarly, a strength or dose of 1000 mg may be expressed, in practice, as 1 g, or vice versa. o Trailing or deleting zeros: 10 mg is similar in appearance to 100 mg which may potentiate confusion between a name pair with moderate similarity. o Similar sounding doses: 15 mg is similar in sound to 50 mg
Step 2	Answer the questions in the checklist below. Affirmative answers to some of these questions suggest that the pattern of orthographic or phonetic differences in the names may reduce the likelihood of confusion for moderately similar names **with** overlapping or similar strengths or doses.

	Orthographic Checklist (Y/N to each question) • Do the names begin with different first letters? Note that even when names begin with different first letters, certain letters may be confused with each other when scripted. • Are the lengths of the names dissimilar* when scripted? *FDA considers the length of names different if the names differ by two or more letters. • Considering variations in scripting of some letters (such as *z* and *f*), is there a different number or placement of upstroke/downstroke letters present in the names? • Is there different number or placement of cross-stroke or dotted letters present in the names? • Do the infixes of the name appear dissimilar when scripted? • Do the suffixes of the names appear dissimilar when scripted?	Phonetic Checklist (Y/N to each question) • Do the names have different number of syllables? • Do the names have different syllabic stresses? • Do the syllables have different phonologic processes, such vowel reduction, assimilation, or deletion? • Across a range of dialects, are the names consistently pronounced differently?

Table 5: Low Similarity Name Pair Checklist (i.e., combined score is ≤49%).

In most circumstances, these names are viewed as sufficiently different to minimize confusion. Exceptions to this would occur in circumstances where, for example, there are data that suggest a name with low similarity is nonetheless misinterpreted as a marketed product name in a prescription simulation study. In such instances, FDA would reassign a low similarity name to the moderate similarity category and review according to the moderately similar name pair checklist.

Appendix B: Prescription Simulation Samples and Results

Figure 1. Lenvima Study (Conducted on September 12, 2014)

Handwritten Requisition Medication Order	Verbal Prescription
Medication Order: Lenvima 14mg PO QD Outpatient Prescription: Lenvima 24mg T po once daily #1	Lenvima 24 mg take by mouth once daily. Dispense 1 carton.

FDA Prescription Simulation Responses (Aggregate 1 Rx Studies Report)

260 People Received Study
95 People Responded

Study Name: Lenvima

Total	35	26	34	
INTERPRETATION	**OUTPATIENT**	**VOICE**	**INPATIENT**	**TOTAL**
LANZEMA	0	1	0	1
LEMVEMA	0	1	0	1
LEMVIMA	1	1	1	3
LEMVIMA DRINK 24 MG	0	1	0	1
LENSRIMA	0	0	1	1
LENSVINA	0	0	1	1
LENUIMA	2	0	0	2
LENVEMA	0	3	0	3
LENVIMA	31	9	23	63
LENVIMA 24MG	1	0	0	1
LENVIMA DRINK	0	1	0	1
LENVINA	0	1	2	3
LEUVIMA	0	0	2	2
LEVEMIR	0	0	1	1
LEVSIMA	0	0	1	1
LEVSINA	0	0	1	1
LIMABEANA	0	1	0	1
LIMAVINA	0	1	0	1
LIMEVEMA	0	1	0	1
LIMVEMA	0	1	0	1
LIMVIMA	0	1	0	1
LINVEMA	0	2	0	2
LYNVEMA	0	1	0	1
OPDIVO	0	0	1	1

Appendix C: Highly Similar Names (e.g., combined POCA score is ≥70%)

No.	**Proposed name:** Lenvima (lenvatinib) **Strengths:** 4 mg and 10 mg capsules. **Usual Dose:** 24 mg (two 10 mg capsules and one 4 mg capsule) taken once daily. The daily dose is to be modified as needed according to the dose/toxicity management plan.	POCA Score (%)	Orthographic and/or phonetic differences in the names sufficient to prevent confusion
1.	Lenvima ***	100	Name is subject of this review.
2.	Lessina	70	The name pair is orthographically different due to the letter strings "nv" and "ss" appearing differently when scripted. The second syllable of the name pair sound differently, lehn veem uh vs. le seen uh.
3.	LESSINA-21	70	Product is no longer marketed. See Lessina above for root name, Lessina.
4.	LESSINA-28	70	See Lessina above for root name assessment.
5.	Remsima ***	70	This name pair is differentiated orthographically by the beginning letters, 'L' vs. 'R' and phonetically by their first syllables 'lenh' vs. 'rim'. Additionally, if approved, the products would have differing product characteristics, which include: Lenvima would be available as an oral capsule in 4 mg and 10 mg strengths packaged in 5-day blister cards containing daily doses of 24 mg, 20 mg, 14mg or 10 mg; Remsima would be available as a (b) (4)

Appendix D: Moderately Similar Names (e.g., combined POCA score is ≥50% to ≤69%) with no overlap or numerical similarity in Strength and/or Dose

No.	Proposed Name	POCA Score (%)
1.	Allanzyme	58
2.	Finevin	52
3.	(b) (4) ***	52
4.	LANIAZID	52
5.	LANORINAL	59
6.	LANOXIN	54
7.	Lansinoh	64
8.	Lanthanum	50
9.	Laviv	51
10.	Laxmar	52
11.	LAZANDA	57
12.	Lemtrada ***	54
13.	Lenzagel	54
14.	Levbid	56
15.	Levlen	54
16.	Levodopa	54
17.	Levora	55
18.	LEVORA 0.15/30-21	55
19.	LEVORA 0.15/30-28	55
20.	Levsin	60
21.	LEXIVA	66
22.	LINCOCIN	51
23.	LINDANE	58
24.	Liquimat	54
25.	(b) (4) ***	56
26.	(b) (4) ***	53
27.	LORYNA	54
28.	LOTRIMIN	50
29.	LOVAZA	56
30.	LOVENOX	50
31.	Lumason ***	50
32.	Luminal	55
33.	Lysimax	52
34.	LYSTEDA	54
35.	NESINA	58
36.	RENVELA	60
37.	Revina	62
38.	(b) (4) ***	50

No.	Proposed Name	POCA Score (%)
39.	VIMIZIM	50
40.	(b) (4) ***	64
41.	Zenzedi	56

Appendix E: Moderately Similar Names (e.g., combined POCA score is ≥50% to ≤69%) with overlap or numerical similarity in Strength and/or Dose

No.	**Proposed name:** Lenvima (lenvatinib) **Strengths:** 4 mg and 10 mg capsules. **Usual Dose:** 24 mg (two 10 mg capsules and one 4 mg capsule) taken once daily. The daily dose is to be modified as needed according to the dose/toxicity management plan.	**POCA Score (%)**	**Prevention of Failure Mode** **In the conditions outlined below, the following combination of factors, are expected to minimize the risk of confusion between these two names**
1.	FETZIMA	68	The prefixes and infixes of this name pair have sufficient orthographic differences. The first and second syllables of this name pair sound different.
2.	Lanolin	58	The suffixes of this name pair have sufficient orthographic differences. The second and third syllables of this name pair sound different.
3.	LEVITRA	64	The infixes and suffixes of this name pair have sufficient orthographic differences. The first and third syllables of this name pair sound different.
4.	LEVULAN	50	The suffixes of this name pair have sufficient orthographic differences. The first and third syllables of this name pair sound different.
5.	Lidomar	50	The infixes of this name pair have sufficient orthographic differences. All the syllables of this name pair sound different.
6.	Lofibra	55	The infixes of this name pair have sufficient orthographic differences. All of syllables of this name pair sound different.
7.	LONITEN	54	The suffixes of this name pair have sufficient orthographic differences. All of syllables of this name pair sound different.
8.	LOTENSIN	56	The infixes and suffixes of this name pair have sufficient orthographic differences. All of syllables of this name pair sound different.

No.	**Proposed name:** Lenvima (lenvatinib) **Strengths:** 4 mg and 10 mg capsules. **Usual Dose:** 24 mg (two 10 mg capsules and one 4 mg capsule) taken once daily. The daily dose is to be modified as needed according to the dose/toxicity management plan.	POCA Score (%)	**Prevention of Failure Mode** **In the conditions outlined below, the following combination of factors, are expected to minimize the risk of confusion between these two names**
9.	LUMIZYME	54	The suffixes of this name pair have sufficient orthographic differences. All of syllables of this name pair sound different.
10.	LUNESTA	52	The suffixes of this name pair have sufficient orthographic differences. All of syllables of this name pair sound different.
11.	Lynparza ***	52	The prefixes and infixes of this name pair have sufficient orthographic differences. The second and third syllables of this name pair sound different.

Appendix F: Low Similarity Names (e.g., combined POCA score is ≤49%)

No.	Name	POCA Score (%)
1.	N/A	

Appendix G: Names not likely to be confused or not used in usual practice settings for the reasons described.

No.	Name	POCA Score (%)	Failure preventions
1.	Avima	56	Name identified in RxNorm database Unable to find product characteristics in commonly used drug databases.
2.	(b) (4) ***	50	Proposed Proprietary Name found unacceptable by DMEPA (OSE# 2014-17156). An alternative name has not been submitted.
3.	(b) (4) ***	50	This is a secondary proposed proprietary name and the product was approved under proprietary name Sitavig.
4.	Lanozin	63	Name identified in RxNorm database Unable to find product characteristics in commonly used drug databases.
5.	Lasma	56	International product formerly marketed in the United Kingdom and Ireland.
6.	(b) (4) ***	52	This is a secondary proposed proprietary name and the primary proposed proprietary name for product is currently under review.
7.	(b) (4) ***	51	This is a secondary proposed proprietary name and an alternative proposed proprietary name for product is currently under review.
8.	(b) (4) ***	53	Proposed Proprietary Name found unacceptable by DMEPA (OSE# 2007-1918). The product was approved and marketed without a proprietary name.
9.	(b) (4) ***	52	This is a tertiary proposed proprietary name. The name, (b) (4) ***, was found conditionally acceptable.
10.	LENTARD	56	Brand discontinued with no generic available. NDA 018384 withdrawn, FR Effective 09/25/1997.
11.	Lentaron	50	International product formerly marketed in several foreign countries.
12.	Lentizol	54	International product formerly marketed in the United Kingdom and Ireland.
13.	(b) (4) ***	66	Alternative name for this NDA 206947/ Lenvima product.

No.	Name	POCA Score (%)	Failure preventions
14.	Leptin	53	Product is not a drug. Product is a hormone produced mainly by adipocytes that is involved in the regulation of body fat.
15.	(b) (4) ***	68	Proposed Proprietary Name found unacceptable by DMEPA (OSE# 2013-1184). Product approved under new proprietary name, Aptiom.
16.	Leventa	68	Veterinary Product
17.	Levo 5mg ***	55	Name identified in Names Entered by Safety Evaluator database. Unable to find product characteristics in commonly used drug databases.
18.	(b) (4) ***	54	Proposed Proprietary Name found unacceptable by DMEPA (OSE# 2011-2041). Proposed name, (b) (4) *** found conditionally acceptable (IND (b) (4)).
19.	Lice-Nil	51	OTC Lice-Nil Lice and Eggs Killer Oil
20.	Lidifen	51	International product formerly marketed in the United Kingdom.
21.	Lidodan	50	International product marketed in Canada.
22.	(b) (4) ***	56	Proposed Proprietary Name found conditionally acceptable by DMEPA (OSE# 2012-671); however, the Applicant withdrew the application.
23.	Lincobac	50	Veterinary Product
24.	Lincomed	52	Veterinary Product
25.	LinGam	50	Name identified in RxNorm database Unable to find product characteristics in commonly used drug databases.
26.	Lixiana ***	56	Proposed Proprietary Name found unacceptable by DMEPA (OSE# 2010-2645 and 2011-4476). Proprietary name, Savaysa *** found conditionally acceptable (NDA 206316).
27.	(b) (4) ***	50	Proposed Proprietary Name found unacceptable by DMEPA (OSE# 2011-3747). Proposed proprietary name, (b) (4) ***, found conditionally acceptable; however, the Applicant withdrew the application.

No.	Name	POCA Score (%)	Failure preventions
28.	(b) (4) ***	61	Proposed Proprietary Name found unacceptable by DMEPA (OSE# 2011-1170). Product approved under new proprietary name Sirturo.
29.	Trexima	59	This product is a combination of naproxen sodium and sumatriptan. The combination product was referred to as Trexima during clinical trials. The product was approved under NDA 021926 as Treximet.
30.	(b) (4) ***	50	Proposed Proprietary Name found unacceptable by DMEPA (OSE# 2009-1226). The Applicant withdrew the application.

Appendix H: Names not likely to be confused due to notable spelling, orthographic and phonetic differences.

No.	Name	POCA Score (%)
1.	(b) (4) ***	50
2.	Alenaze-D	50
3.	APLENZIN	56
4.	BENDOPA	50
5.	CENTANY	54
6.	(b) (4) ***	50
7.	CIMZIA	51
8.	Citroma	50
9.	(b) (4) ***	58
10.	Clenia	56
11.	(b) (4) ***	56
12.	Clindamed	50
13.	Coenzyme A	50
14.	CORTENEMA	50
15.	Elantan	51
16.	(b) (4) ***	57
17.	Enzymax	51
18.	Ephensin-LA	50
19.	fenbid	53
20.	Fenesin	52
21.	Fleet Enema	56

No.	Name	POCA Score (%)
22.	INVEGA	56
23.	(b) (4) ***	54
24.	ORENCIA	50
25.	Pepsin A	52
26.	Predenema	50
27.	(b) (4) ***	50
28.	RELENZA	52
29.	Remeven	51
30.	RETIN-A	52
31.	Sandrena	50
32.	Sanfed A	50
33.	(b) (4)	52
34.	SENSIPAR	52
35.	(b) (4)	50
36.	Tanabid DA	50
37.	Tensium	56
38.	Tepadina	50
39.	Tresiba ***	52
40.	ULESFIA	52
41.	VI-DOM-A	51
42.	(b) (4) ***	50
43.	(b) (4) ***	50
44.	(b) (4) ***	51

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/s/

OTTO L TOWNSEND
11/18/2014

CHI-MING TU
11/18/2014

LUBNA A MERCHANT
11/18/2014

KELLIE A TAYLOR
11/18/2014