

**CENTER FOR DRUG EVALUATION AND
RESEARCH**

APPLICATION NUMBER:

208743Orig1s000

PROPRIETARY NAME REVIEW(S)

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 21, 2016
Application Type and Number: NDA 208743
Product Name and Strength: Tymlos (abaloparatide) Injection
80 mcg/40 microliters
Total Product Strength: (b) (4)
Product Type: Combination Product
Rx or OTC: Rx
Applicant/Sponsor Name: Radius Health, Inc.
Panorama #: 2016-9934603
DMEPA Primary Reviewer: Loretta Holmes, BSN, PharmD
DMEPA Team Leader: Lolita White, PharmD

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1 INTRODUCTION

This review evaluates the proposed proprietary name, Tymlos, 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 submitted an external name study, conducted by (b) (4) for this product.

1.1 REGULATORY HISTORY

The Applicant previously submitted the proposed proprietary name, (b) (4)*** on May 27, 2016. However, the Division of Medication Error Prevention and Analysis (DMEPA) found the name, (b) (4)*** unacceptable due to orthographic similarities and shared product characteristics with the pending proprietary name, (b) (4)*** in OSE Review #2016-8278936, dated August 22, 2016.

Thus, the Applicant submitted the name, Tymlos, for review on August 30, 2016.

1.2 PRODUCT INFORMATION

The following product information is provided in the August 30, 2016 proprietary name submission.

- Intended Pronunciation: tim lows'
- Active Ingredient: abaloparatide
- Indication of Use: Treatment of postmenopausal women with osteoporosis
- Route of Administration: Subcutaneous
- Dosage Form: Injection
- Strength: 80 mcg/40 microliters (b) (4)
- Dose and Frequency: 80 mcg subcutaneously once daily
- How Supplied: One pre-filled pen designed to deliver 30 doses each containing 80 mcg of abaloparatide in 40 mL of fluid, and contains (b) (4) (at a concentration of 2000 mcg/mL)
- Storage: *Before First Use:* Store in a refrigerator 36°F – 46°F (2°C – 8°C) (b) (6) Do not freeze. *After First Use:* Store for up to 30 days at a temperature (b) (4) 77°F (25°C). Do not freeze. Do not store the pen with the needle attached. Protect from (b) (4) heat and (b) (4).

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 Bone, Reproductive, and Urologic Products (DBRUP) 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^a.

2.2.2 *Components of the Proposed Proprietary Name*

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

2.2.3 *FDA Name Simulation Studies*

Eighty (80) practitioners participated in DMEPA's prescription studies. One participant in the inpatient study interpreted the name Tymlos as Tylenol, a currently marketed product line. However, there are product characteristic differences that may help to prevent confusion between this name pair. See Appendix E for our evaluation of the name Tylenol.

We acknowledge that in Appendix B, Figure 1, the inpatient prescription has the dosage unit "mg" indicated rather than the correct dosage unit "mcg".

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 14, 2016 e-mail, the Division of Bone, Reproductive, and Urologic Products (DBRUP) did not forward any comments or concerns relating to the proposed proprietary name at the initial phase of the review.

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 $\geq 55\%$ retrieved from our POCA search^b organized as highly similar, moderately similar or low similarity for further evaluation. Table 1 also includes names identified from the FDA Prescription Simulation Study and by (b) (4)

^a USAN stem search conducted on October 11, 2016.

^b POCA search conducted on September 29, 2016 in version 4.0.

Table 1. POCA Search Results	Number of Names
Highly similar name pair: combined match percentage score $\geq 70\%$	3
Moderately similar name pair: combined match percentage score $\geq 55\%$ to $\leq 69\%$	25
Low similarity name pair: combined match percentage score $\leq 54\%$	16

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

Our analysis of the 44 names contained in Table 1 determined these names will not pose a risk for confusion as described in Appendices C through H.

2.2.7 Communication of DMEPA's Analysis at Midpoint of Review

DMEPA communicated our findings to the Division of Bone, Reproductive, and Urologic Products (DBRUP) via e-mail on November 16, 2016. At that time we also requested additional information or concerns that could inform our review. Per e-mail correspondence from DBRUP on November 21, 2016, they stated no additional concerns with the proposed proprietary name, Tymlos.

3 CONCLUSIONS

The proposed proprietary name is acceptable. If you have any questions or need clarifications, please contact Shawnetta Jackson, OSE Project Manager, at 301-796-4952.

3.1 COMMENTS TO THE APPLICANT

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

If any of the proposed product characteristics as stated in your August 30, 2016 submission are altered prior to approval of the marketing application, the name must be resubmitted for review.

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.

3. *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).

4. *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#>).

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. *Electronic Drug Registration and Listing System (eDRLS) database*

The electronic Drug Registration and Listing System (eDRLS) was established to support the FDA's Center for Drug Evaluation and Research (CDER) goal to establish a common Structured Product Labeling (SPL) repository for all facilities that manufacture regulated drugs. The system is a reliable, up-to-date inventory of FDA-regulated, drugs and establishments that produce drugs and their associated information.

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 DNDP. OPDP or DNDP 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 DNDP 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. ^c

^c 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 $\geq 70\%$.
 - Moderately similar pair: combined match percentage score $\geq 55\%$ to $\leq 69\%$.
 - Low similarity: combined match percentage score $\leq 54\%$.

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 $\geq 70\%$).

<u>Orthographic Checklist</u>		<u>Phonetic Checklist</u>	
Y/N	Do the names begin with different first letters? <i>Note that even when names begin with different first letters, certain letters may be confused with each other when scripted.</i>	Y/N	Do the names have different number of syllables?
Y/N	Are the lengths of the names dissimilar* when scripted? <i>*FDA considers the length of names different if the names differ by two or more letters.</i>	Y/N	Do the names have different syllabic stresses?
Y/N	Considering variations in scripting of some letters (such as <i>z</i> and <i>f</i>), 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 as 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 $\geq 55\%$ to $\leq 69\%$).

<p>Step 1</p>	<p>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.</p> <p>For single strength products, also consider circumstances where the strength may not be expressed.</p> <p>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.</p> <p>To determine whether the strengths or doses are similar to your proposed product, consider the following list of factors that may increase confusion:</p> <ul style="list-style-type: none"> • 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. • Trailing or deleting zeros: 10 mg is similar in appearance to 100 mg which may potentiate confusion between a name pair with moderate similarity. • Similar sounding doses: 15 mg is similar in sound to 50 mg
<p>Step 2</p>	<p>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.</p>

	<p>Orthographic Checklist (Y/N to each question)</p> <ul style="list-style-type: none"> 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 <i>z</i> and <i>f</i>), 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? 	<p>Phonetic Checklist (Y/N to each question)</p> <ul style="list-style-type: none"> Do the names have different number of syllables? Do the names have different syllabic stresses? Do the syllables have different phonologic processes, such as vowel reduction, assimilation, or deletion? Across a range of dialects, are the names consistently pronounced differently?
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Table 5: Low Similarity Name Pair Checklist (i.e., combined score is $\leq 54\%$).

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. Tymlos Study (Conducted on November 4, 2016)

Handwritten Medication Order/Prescription	Verbal Prescription
<p>Medication Order:</p> <p><i>Tymlos 80 (b)(6) qd daily</i></p>	<p>Tymlos</p> <p>Inject 80 mcg subcutaneously once daily</p> <p>Disp. #1 pen</p>
<p>Outpatient Prescription:</p> <p><i>Tymlos</i></p> <p><i>Inject 80 mcg subcutaneously once daily</i></p> <p><i>Disp. #1 pen</i></p>	

FDA Prescription Simulation Responses (Aggregate 1 Rx Studies Report)

				315 People Received Study 80 People Responded	
Study Name: Tymlos					
Total	32	21	27		
INTERPRETATION	OUTPATIENT	VOICE	INPATIENT	TOTAL	
FYMLOS	2	0	2	4	
IYMLOV	1	0	0	1	
JYMLOS	2	0	0	2	
LYLOS	1	0	0	1	
QYMLOS	0	0	1	1	
TAMLOOS	0	1	0	1	
TEMLOS	0	1	0	1	
TEMLOSE	0	1	0	1	
TENLOSE	0	1	0	1	
TIMLOS	2	10	0	12	
TIMLOSE	0	4	0	4	
TIMLOSH	0	1	0	1	

TIMLOSS	0	1	0	1
TINLOS	0	1	0	1
TYLENOL	0	0	1	1
TYMBOR	2	0	0	2
TYMLOR	1	0	0	1
TYMLOS	18	0	10	28
TYOMOS	0	0	1	1
ZIMLOS	0	0	1	1
ZYMLOS	3	0	8	11
ZYMOS	0	0	1	1
ZYNLOS	0	0	1	1
ZYONLOS	0	0	1	1

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

No.	<p><u>Proposed name:</u> Tymlos</p> <p><u>Established name:</u> abaloparatide</p> <p><u>Dosage form:</u> Injection</p> <p><u>Strength:</u> 80 mcg/40 mcL <small>(b) (4)</small></p> <p><u>Usual Dose:</u> 80 mcg subcutaneously once daily</p>	POCA Score (%)	<p>Orthographic and/or phonetic differences in the names sufficient to prevent confusion</p> <p>Other prevention of failure mode expected to minimize the risk of confusion between these two names.</p>
1.	Tymlos	100	This name is the subject of this review.
2.	Tylox	70	The ANDA for Tylox was withdrawn FR effective 03/27/2014. There are no other marketed generics.
3.	Tylox-325	70	<p>The prefixes/suffixes of the name Tymlos and the root name Tylox have sufficient orthographic differences due to the letters in the third position (i.e., the rounded letter “-m-” in Tymlos vs. the upstroke letter “-l-” in Tylox). The ending letter “x” in Tylox contains a cross-stroke as compared to the ending letter “s” in Tymlos which does not contain a cross-stroke.</p> <p>The first/second syllables of the name Tymlos and the root name Tylox sound different. The prefixes (“Tym-” vs. “Ty-”) sound different due to the short “ɪ” sound of the letter “y” in Tymlos versus the long “ī” sound of the letter “y” in Tylox. The suffixes sound different due to the long “ō” sound in “-los” vs. the short “ö” sound in “-lox”.</p> <p>The modifier “325” helps to differentiate the names orthographically and phonetically if used.</p>

Appendix D: Moderately Similar Names (e.g., combined POCA score is $\geq 55\%$ to $\leq 69\%$) with no overlap or numerical similarity in Strength and/or Dose

No.	Name	POCA Score (%)
1.	Timolol	66
2.	Tybost	66
3.	Triclos	61
4.	Thylox	60
5.	Tums	55
6.	Tums 500	55
7.	Tycolet	55
8.	(b) (4) ***	55

Appendix E: Moderately Similar Names (e.g., combined POCA score is $\geq 55\%$ to $\leq 69\%$) with overlap or numerical similarity in Strength and/or Dose

No.	<u>Proposed name:</u> Tymlos <u>Established name:</u> abaloparatide <u>Dosage form:</u> Injection <u>Strength:</u> 80 mcg/40 mL (b) (4) <u>Usual Dose:</u> 80 mcg subcutaneously once daily	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.	(b) (4) ***	62	The prefixes of this name pair have sufficient orthographic differences. The first syllables of this name pair sound different.

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No.	<u>Proposed name:</u> Tymlos <u>Established name:</u> abaloparatide <u>Dosage form:</u> Injection <u>Strength:</u> 80 mcg/40 mcL <small>(b) (4)</small> <u>Usual Dose:</u> 80 mcg subcutaneously once daily	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
2.	Tylenol	52	<p>The infixes/suffixes of this name pair have sufficient orthographic differences. The letter “y” in Tymlos is followed by the rounded letter “m” in the third position whereas the letter “y” in Tylenol is followed by the upstroke letter “l” in the third position. Tymlos ends with the letter “s” which differs from the ending upstroke letter “l” in Tylenol.</p> <p>The second syllables of this name pair sound different due to the long “o” and “s” sound in “los” versus the short “e” and “n” sound in “len”. The name Tylenol contains an extra syllable.</p> <p>Tylenol is a family tradename. There are multiple products and dosage forms in the product line (e.g., Tylenol Extra Strength, Tylenol Sinus, Tylenol Cold, Infants’ Tylenol, Children’s Tylenol, Tylenol PM and others). Therefore, additional information would need to be provided in order for the correct Tylenol product to be dispensed.</p> <p>Furthermore, Tymlos is an injection available in a pen and administered subcutaneously whereas the Tylenol products are tablets, capsules, and liquid dosage forms administered orally. Except for the Tylenol PM products, the frequency of administration for most of the products typically ranges from every 8 hours to every 4 hours. These differences will help to prevent confusion between the name pair.</p>

Appendix F: Low Similarity Names (e.g., combined POCA score is $\leq 54\%$)

No.	Name	POCA Score (%)
1.	Tamsulosin	54
2.	Tylophen	54
3.	Tyvaso	54
4.	Tabloid	52
5.	SF 5000 Plus	50
6.	Tribulus	50
7.	Kyprolis	48
8.	Trilog	48
9.	Ceta Plus	47
10.	Tandem Plus	46
11.	Actos	44
12.	Tygacil	40
13.	Tympagesic	40
14.	Tacrolimus	39
15.	Zyclara	31

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.	Stimlor	66	This is the name of a foreign drug product (United Kingdom).
2.	Tylosin	65	This is a veterinary drug product.
3.	Symlin	64	Symlin in vials has been discontinued. SymlinPen 60 and SymlinPen 120 are currently available. A prescription would likely state SymlinPen and the modifier “60” or “120” would also be need to be indicated.
4.	Thymol	62	Thymol is available as a bulk powder and is used in pharmaceutical compounding.
5.	(b) (4)***	60	This proposed name was withdrawn by the sponsor and was not reviewed by DMEPA.

No.	Name	POCA Score (%)	Failure preventions
6.	Xylose	58	This is a bulk powder used for diagnostic testing and pharmaceutical compounding.
7.	Tekamlo	56	This product has been discontinued. There are no generics available.

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

No.	Name	POCA Score (%)
1.	FML-S	61
2.	Dymelor	60
3.	FML S.O.P.	60
4.	Panlor SS	57
5.	Cal Oys	56
6.	(b) (4) ***	56
7.	Pomalyst	56
8.	Syndros	56
9.	Myobloc	55

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/s/

LORETTA HOLMES
11/21/2016

LOLITA G WHITE
11/21/2016

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: August 22, 2016
Application Type and Number: NDA 208743
Product Name and Strength: (b) (4) (abaloparatide) Injection
80 mcg/40 microliters
Total Product Strength: (b) (4)
Product Type: Single Ingredient Product
Rx or OTC: Rx
Applicant/Sponsor Name: Radius Health Inc.
Panorama #: 2016-8278936
DMEPA Primary Reviewer: Walter Fava, RPh., MSED.
Acting DMEPA Team Leader: Lolita White, PharmD.
DMEPA Deputy Director: Irene Z. Chan, PharmD, BCPS
DMEPA Director: Todd Bridges, RPh

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/s/

WALTER L FAVA
08/22/2016

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08/22/2016

IRENE Z CHAN
08/23/2016

TODD D BRIDGES
08/23/2016