CENTER FOR DRUG EVALUATION AND RESEARCH

APPLICATION NUMBER:

210861Orig1s000
211710Orig1s000

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)

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

Date of This Review:	March 30, 2018
Application Type and Number:	NDA 210861 and NDA 211710
Product Name and Strength:	Vitrakvi (Larotrectinib) Capsules, 25 mg and 100 mg (NDA 210861) Vitrakvi (Larotrectinib) Oral Solution, 20 mg/mL (NDA 211710)
Product Type:	Single ingredient product
Rx or OTC:	Rx
Applicant/Sponsor Name:	Loxo Oncology, Inc.
Panorama #:	2018- 20074128 and 2018- 20993435
DMEPA Safety Evaluator:	Maximilian Straka, PharmD, FISMP
DMEPA Team Leader:	Chi-Ming (Alice) Tu, PharmD, FISMP, BCPS

Contents

1 INTRODUCTION

This review evaluates the proposed proprietary name, Vitrakvi, 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 [redacted] for this proposed proprietary name.

1.1 REGULATORY HISTORY

The Applicant previously submitted the proposed proprietary name, [redacted]*** on March 8, 2017 for Larotrectinib capsules under IND 121211. However, we found the name, [redacted]*** unacceptable [redacted] under IND 121211 on June 2, 2017.[a] The applicant then submitted the proposed proprietary name, [redacted]*** on July 21, 2017. We found the name [redacted]*** unacceptable [redacted] under IND 121211.[b]

Thus, the Applicant submitted the name, Vitrakvi, for the proposed capsules formulation on January 3, 2018 under NDA 210861. On February 13, 2018, the Applicant submitted the same name, Vitrakvi, for the proposed oral solution formulation under NDA 211710.

1.2 PRODUCT INFORMATION

The following product information is provided in the proprietary name submission received on January 3, 2018 and February 13, 2018. Intended Pronunciation: vi trak' vee

- Active Ingredient: Larotrectinib
- Indication of Use: Treatment of unresectable or metastatic solid tumors with NTRK-fusion proteins in adult and pediatric patients who require systematic therapy and who have either progressed following prior treatment or who have no acceptable alternative treatments.
- Route of Administration: Oral
- Dosage Forms: capsules; oral solution
- Strengths: Capsules: 25 mg and 100 mg

  Oral solution: 20 mg/mL
- Dose and Frequency: Adult: 100 mg two times daily, 12 hours apart

  Pediatric: 100 mg/m^2 (maximum of 100 mg) two times daily, 12 hours apart
- How Supplied: 60 capsules/bottle, or 100 mL/bottle

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[a] [Stewart, J]. Proprietary Name Review for [redacted] (IND 121211)]. Silver Spring (MD): FDA, CDER, OSE, DMEPA (US); [2017 Jun 2]. Panorama No. [2017-13620885].

[b] [Stewart, J]. Proprietary Name Review for [redacted] (IND 121211)]. Silver Spring (MD): FDA, CDER, OSE, DMEPA (US); [2017 Nov 3]. Panorama No. [2017-16491499].

- Storage: Capsules are to be stored at 20°- 25°C (with excursions allowed from 15° to 30° C). Oral solution is to be stored refrigerated (2° - 8°C).

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. The Division of Medication Error Prevention and Analysis (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[c].

2.2.2 Components of the Proposed Proprietary Name

The Applicant indicated in their submission that the proposed name, Vitrakvi, is derived from TRK Inhibitor. This proprietary name 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 Comments from Other Review Disciplines at Initial Review

In response to the OSE January 17, 2018 e-mail, the Division of Oncology Products 2 (DOP2) did not forward any comments or concerns relating to the proposed proprietary name at the initial phase of the review.

2.2.4 FDA Name Simulation Studies

Eighty-five (85) practitioners participated in DMEPA's prescription studies. The responses did not overlap with any currently marketed products nor did the responses sound or look similar to any currently marketed products or any products in the pipeline. Appendix B contains the results from the verbal and written prescription studies.

2.2.5 Phonetic and Orthographic Computer Analysis (POCA) Search Results

Our POCA search[d] identified 108 names with a combined phonetic and orthographic score of ≥55% or an individual phonetic or orthographic score ≥70%**.** These names are included in Table 1 below.

[c] USAN stem search conducted on 1/22/18.

[d] POCA search conducted on (1/10/18) in version 4.2.

2.2.6 Names Retrieved for Review Organized by Name Pair Similarity

Table 1 lists the number of names retrieved from our POCA search and the (b) (4) external study. These name pairs are organized as highly similar, moderately similar or low similarity for further evaluation.

Table 1. Similarity Category	**Number of Names**
Highly similar name pair: combined match percentage score ≥70%	5
Moderately similar name pair: combined match percentage score ≥55% to ≤ 69%	103
Low similarity name pair: combined match percentage score ≤54%	25

2.2.7 Multiple Dosage Forms under a Single Proprietary Name

The Applicant proposes to market both capsules and oral solution dosage forms under the proposed proprietary name, Vitrakvi. We considered the appropriateness of using the same proprietary name for both capsules and oral solutions. We note that the proposed oral capsules and the proposed oral solution share the same active ingredient (larotrectinib), the same indication for use and patient population (indicated for the treatment of unresectable or metastatic solid tumors with NTRK-fusion proteins in adult and pediatric patients who require systemic therapy and who have either progressed following prior treatment or who have no acceptable alternative treatments). The proposed dosing regimen are the same for both dosage forms with no dosing differences noted in the proposed Prescribing Information. Additionally, based on the proposed Prescribing Information received March 26, 2018 under NDA 210861, "[TRADENAME] (b) (4) capsule or oral solution (b) (4) may be used interchangeably." Provided that the DOP2 review team confirms that these products are bioequivalent and have no clinically significant differences[e], we do not anticipate that having two dosage forms with the same name will introduce medication errors related to switching between the two. We note the products differ in some characteristics including strength (20 mg/mL vs. 25 mg and 100 mg) and dosage form (oral suspension vs. capsules). It is common and accepted practice to have a product line with multiple dosage forms share one proprietary name and, while we note the strengths and dosage forms are different, these differences can be managed via labeling. Given that the products share the same active ingredient, indications for use, patient population and dosing regimen we believe that use of the name, Vitrakvi, for this proposed product is acceptable.

[e] Applicant bioequivalence data is under review by the Agency and determination of acceptability is pending.

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

Our analysis of the 133 names contained in Table 1 determined none of the names will pose a risk for confusion as described in Appendices C through H.

2.2.9 Communication of DMEPA's Analysis at Midpoint of Review

DMEPA communicated our findings to the Division of Oncology Products (DOP2) via e-mail on March 26, 2018. At that time we also requested additional information or concerns that could inform our review. Per e-mail correspondence from the DOP2 on March 30, 2018, they stated no additional concerns with the proposed proprietary name, Vitrakvi.

3 CONCLUSION

The proposed proprietary name is acceptable.

If you have any questions or need clarifications, please contact Latonia Ford, OSE project manager, at 301-796-4901.

3.1 COMMENTS TO THE APPLICANT

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

If any of the proposed product characteristics as stated in your submission, received on January 3, 2018 under NDA 210861 or February 13, 2018 under NDA 211710, 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.

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.

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

The electronic Drug Registration and Listing System (eDRLS) was established to supports 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. [f]

[f] 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 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 55% 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 ≥55% to ≤ 69%.
- Low similarity: combined match percentage score ≤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 are further evaluated to identify the presence of attributes that are known to cause name confusion.
    - Name attributes: We note that the beginning of the drug name plays a significant role in contributing to confusion. Additionally, drug name pairs that start with the same first letter and contain a shared letter string of at least 3 letters in both names are major contributing factor in the confusion of drug names[g]. We evaluate all moderately similar names retrieved from POCA to identify the above attributes. These names are further evaluated to identify overlapping or similar strengths or doses.
    - Product attributes: Moderately similar names of products that have overlapping or similar strengths or doses represent an area for concern for FDA. The dose and strength information is often located in close proximity to the drug name itself on prescriptions and medication orders, and the information 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) may be limited when the strength or dose overlaps. DMEPA reviews 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.

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[g] Shah, M, Merchant, L, Characteristics That May Help in the Identification of Potentially Confusing Proprietary Drug Names. Therapeutic Innovation & Regulatory Science, September 2016

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 does 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 ≥55% 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: • 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
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.

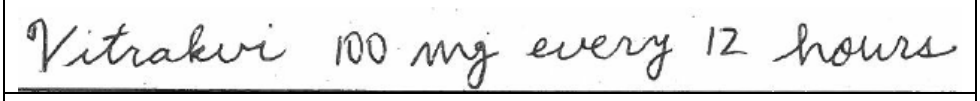
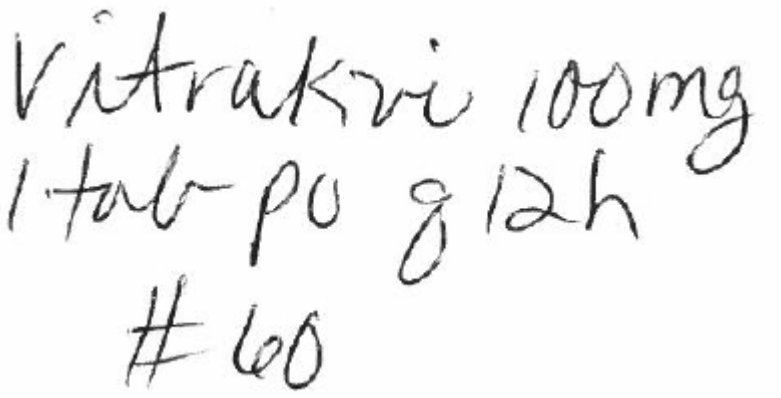
	Orthographic Checklist (Y/N to each question) • Do the names begin with different first letters? Note that even when names begin with different first letters, certain letters may be confused with each other when scripted. • Are the lengths of the names dissimilar* when scripted? *FDA considers the length 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 ≤54%).

Names with low similarity are generally acceptable 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.

Appendix B: Prescription Simulation Samples and Results

Figure 1. Vitrakvi Study (Conducted on 1/19/18)

Handwritten Medication Order/Prescription	**Verbal Prescription**
Medication Order:  	Vitrakvi 100 mg Take one tablet by mouth every 12 hours Dispense Number 60
Outpatient Prescription:  	

FDA Prescription Simulation Responses (Aggregate 1 Rx Studies Report)

296 People Received Study
85 People Responded

Study Name: Vitrakvi

Total	31	30	24	
INTERPRETATION	**OUTPATIENT**	**VOICE**	**INPATIENT**	**TOTAL**
BATRAC B	0	1	0	1
BITRACVI	0	1	0	1
DETRACVI	0	1	0	1
DITRACVY	0	1	0	1
LATRACKVI	0	1	0	1
LETRAXI	0	1	0	1
RETRACVI	0	1	0	1
VATRACVI	0	1	0	1
VATRAK-V	0	1	0	1
VETRACVI	0	1	0	1
VETRAKVE	0	1	0	1
VETRAKVI	0	1	0	1
VETRVE	0	1	0	1
VICTRACK V	0	1	0	1
VICTRACVI	0	1	0	1
VITAKVI	0	0	1	1
VITRACK V	0	2	0	2
VITRACK-V	0	1	0	1
VITRACTVIE	0	1	0	1
VITRACVI	0	5	0	5
VITRACVY	0	1	0	1
VITRAK V	0	1	0	1
VITRAKBI	0	1	1	2
VITRAKIR	0	0	1	1
VITRAKUI	1	0	2	3
VITRAKVI	30	2	18	50
VITRAX B	0	1	0	1
VITRKVI	0	0	1	1

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

No.	**Proposed name:** Vitrakvi **Established name:** Larotrectinib **Dosage form:** Capsule; oral solution **Strength(s):** capsules: 25 mg and 100 mg; oral solution: 20 mg/mL **Usual Dose:** Adult: 100 mg twice daily, 12 hours apart. Pediatric: 100 mg/m^2 (maximum of 100 mg) twice daily, 12 hours apart.	**POCA Score (%)**	**Orthographic and/or phonetic differences in the names sufficient to prevent confusion** **Other prevention of failure mode expected to minimize the risk of confusion between these two names.**
1.	Citravet	70	Veterinary product.
2.	Vitarex	71	Unable to find product characteristics in commonly used drug databases. Vitarex is an "iron/minerals/vitamins" product per Micromedex, but a search on Google and Amazon did not find this product for sale. Vitrakvi contains an upstroke letter "k" in the 6th position that is not seen in Vitarex. Vitrakvi also ends in a dotted letter "i" vs. Vitarex ends in a cross-stroke letter "x", which provides additional orthographic differences. The third syllables (vee vs. rex) provides sufficient phonetic differences. Shares an overlap in dosage form/route of administration, but differs in dosage strength, frequency of administration, and usual dose. An order for 'Vitarex 1 tablet by mouth once daily' would be differentiated from an order for VITRAKVI which would need to include a numerical dosage such as 'Vitrakvi 100mg PO BID' or 'Vitrakvi 1 tsp PO BID'.
3.	Vitaroca	70	Brand discontinued with no generic equivalents available per RedBook Online Database.
4.	Vitrakvi***	100	This is the subject of the review
5.	Vitrax	80	Brand discontinued with no generic equivalents available per RedBook Online Database.

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

No.	Name	POCA Score (%)
6.	Cetraxal	55
7.	Citracal	62
8.	Citracal + D	56
9.	Citroma	56
10.	Cytra-K	60
11.	Nitrek	58
12.	Nitro Iv	56
13.	Photrexa	58
14.	Sitavig	58
15.	Vanatrip	56
16.	Veletri	55
17.	Ventavis	58
18.	Vi-Atro	55
19.	Vibativ	59
20.	Victrelis	56
21.	Viekira Xr	60
22.	Vincrex	59
23.	Viroptic	56
24.	Vitamin A	56
25.	Vitamin K1	56
26.	Vita-Respa	66
27.	Vitrase	64
28.	Vitron-C	61
29.	Vivactil	58
30.	Votrient	55

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

No.	**Proposed name:** Vitrakvi **Established name:** Larotrectinib **Dosage form:** Capsule; oral solution **Strength(s):** capsules: 25 mg and 100 mg; oral solution: 20 mg/mL **Usual Dose:** Adult: 100 mg twice daily, 12 hours apart. Pediatric: 100 mg/m^2 (maximum of 100 mg) twice daily, 12 hours apart.	**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**
31.	Imitrex	56	This name pair has sufficient orthographic and phonetic differences.
32.	Levitra	56	This name pair has sufficient orthographic and phonetic differences.
33.	Ritonavir	54	This name pair has sufficient orthographic and phonetic differences.
34.	Triavil	58	This name pair has sufficient orthographic and phonetic differences.
35.	Triavil 2-10	58	This name pair has sufficient orthographic and phonetic differences.
36.	Triavil 2-25	58	This name pair has sufficient orthographic and phonetic differences.
37.	Triavil 4-10	58	This name pair has sufficient orthographic and phonetic differences.
38.	Triavil 4-25	58	This name pair has sufficient orthographic and phonetic differences.
39.	Triavil 4-50	58	This name pair has sufficient orthographic and phonetic differences.

40.	Uptravi	64	This name pair has sufficient orthographic and phonetic differences.
41.	Valtrex	61	This name pair has sufficient orthographic and phonetic differences.
42.	Verapamil	51	This name pair has sufficient orthographic and phonetic differences.
43.	Viagra	54	This name pair has sufficient orthographic and phonetic differences.
44.	Viberzi	56	This name pair has sufficient orthographic and phonetic differences.
45.	Vibra-Tabs	60	This name pair has sufficient orthographic and phonetic differences.
46.	Vistaril	58	This name pair has sufficient orthographic and phonetic differences.
47.	Vitamin K	56	This name pair has sufficient orthographic and phonetic differences.
48.	Vitamin K 1	56	This name pair has sufficient orthographic and phonetic differences.
49.	Zyprexa	54	This name pair has sufficient orthographic and phonetic differences.

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

No.	Name	POCA Score (%)
50.	Avita	48
51.	Cipro Xr	52
52.	Ganciclovir	39
53.	(b) (4) ***	50
54.	Ravicti	54
55.	Vectibix	46
56.	Vepesid	38
57.	Vicodin	41
58.	Victoza	54
59.	Vigamox	46
60.	Viibryd	47
61.	Viread	50
62.	Vivitrol	53
63.	Voltaren	44
64.	Vytorin	54
65.	Zephrex	42

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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
66.	Amitraz	56	Veterinary product.
67.	Centrax	55	Deactivated per Redbook, discontinued per Drugs@FDA; no generics available.
68.	Citra Ph	57	Deactivated per Redbook; No active generics.
69.	Citral	56	This product is a lemon grass oil product found in Micromedex Tox and Drug Product Lookup. Unable to find product characteristics in commonly used drug databases.
70.	Citrate	55	Name identified in RxNorm database. Unable to find product characteristics in commonly used drug databases.
71.	Citric Acid	59	Bulk product used in compounding.
72.	Citrical	60	Name identified in RxNorm database. Unable to find product characteristics in commonly used drug databases.
73.	Elvitegravir	55	Single ingredient product (Vitekta) discontinued as a single ingredient.
74.	(b) (4) ***	51	Proposed proprietary name for NDA 204824/S-006 found unacceptable (OSE # 2017-13281208). NDA 204824 is marketed under Otrexup.
75.	Mitrazol	55	Name identified in RxNorm database. Unable to find product characteristics in commonly used drug databases.
76.	Mytrex A	58	Brand discontinued with no generic equivalent available. ANDA 062598 and ANDA 062609 was withdrawn FR effective 7/12/99.
77.	Nitrados	56	Trade name for nitrazepam in various foreign countries.
78.	Nitric Acid	57	Bulk product used in compounding.
79.	Nitrotab	58	This name was identified by the RxNorm database.
80.	Ro-A-Vit	44	Name identified in RxNorm database. Unable to find product characteristics in commonly used drug databases.
81.	Sitrex	60	Discontinued or no longer actively marketed per Micromedex; No generics available.
82.	Tetravisc	60	International product marketed in Greece.
83.	Tetroxy	52	Veterinary product.

No.	Name	POCA Score (%)	Failure preventions
84.	(b) (4) ***	56	Proposed proprietary name for IND 121211 found unacceptable (b) (4). The Sponsor for IND 121211 has since submitted NDA 210861, and the proposed name Vitrakvi for review, which is the subject of this review.
85.	Vertavis	62	Product discontinued and no generics available.
86.	Veta-K1	56	Veterinary product.
87.	Vetaket	56	Veterinary product.
88.	Veteribac	55	Veterinary product.
89.	Vetraseb	60	Veterinary product.
90.	Vetribute	58	Veterinary product.
91.	Vetrimec	58	Name identified in RxNorm database. Unable to find product characteristics in commonly used drug databases.
92.	Vetripen	59	Name identified in RxNorm database. Unable to find product characteristics in commonly used drug databases.
93.	Vetromax	58	Veterinary product.
94.	Vira-A	54	Brand discontinued with no generic equivalents available.
95.	Virac Rex	59	Name identified in RxNorm database. Unable to find product characteristics in commonly used drug databases.
96.	Viractin	68	International product formerly marketed in Canada.
97.	Viravan S	58	Name identified in RxNorm database. Unable to find product characteristics in commonly used drug databases.
98.	Viravan-P	58	Name identified in RxNorm database. Unable to find product characteristics in commonly used drug databases.
99.	Viravan-T	60	Name identified in RxNorm database. Unable to find product characteristics in commonly used drug databases.
100.	Virazid	62	International product marketed in Indonesia and Mexico
101.	Virovir	60	International product marketed in UK.
102.	Vistra	62	Deactivated per Redbook; No active generics.
103.	Vita #12	51	Product discontinued and no generics available.
104.	Vitabee 12	58	Product discontinued and no generics available.
105.	Vitadil 2A	60	Name identified in RxNorm database. Unable to find product characteristics in commonly used drug databases.

No.	Name	POCA Score (%)	Failure preventions
106.	Vitadil 5A	60	Name identified in RxNorm database. Unable to find product characteristics in commonly used drug databases.
107.	Vitadye	56	Brand discontinued with no generic equivalents available.
108.	Vitamin K 2	56	Name identified in RxNorm database. Unable to find product characteristics in commonly used drug databases.
109.	Vitamin K 3	56	Name identified in RxNorm database. Unable to find product characteristics in commonly used drug databases.
110.	Vitaped	55	Brand discontinued with no generic equivalents available per Drugs@FDA.
111.	Vitaros***	60	Proposed proprietary name for NDA (b) (4) found unacceptable (b) (4). Application received a complete response. No new names have been submitted.
112.	Vitekta	66	Brand discontinued with no generic equivalent available. NDA was withdrawn FR effective 10/3/17.
113.	Vitrasert	64	Brand discontinued with no generic equivalent available. NDA was withdrawn FR effective 6/21/17.
114.	Vitravene	68	NDA 020961 is discontinued and there are no generics available.
115.	(b) (4)***	58	Unable to find product characteristics

Appendix H: Names not likely to be confused due to absence of attributes that are known to cause name confusion[h].

No.	Name	POCA Score (%)
116.	Biktarvy***	60
117.	Biothrax	56
118.	Braftovi***	56
119.	Diprivan	56
120.	Latrix	60
121.	Librax	55
122.	Liotrix	58

[h] Shah, M, Merchant, L, Chan, I, and Taylor, K. Characteristics That May Help in the Identification of Potentially Confusing Proprietary Drug Names. Therapeutic Innovation & Regulatory Science, September 2016.

No.	Name	POCA Score (%)
123.	Matrix	60
124.	Miraxid	56
125.	Retrovir	60
126.	Rotarix	55
127.	Setlakin	55
128.	(b) (4) ***	60
129.	Strix	56
130.	Tipranavir	60
131.	(b) (4) ***	55
132.	Zostrix	55
133.	Zovirax	60

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/s/

MAXIMILIAN STRAKA
03/30/2018

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03/30/2018