CENTER FOR DRUG EVALUATION AND RESEARCH

APPLICATION NUMBER:

210089Orig1s000

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:	September 4, 2019
Application Type and Number:	NDA 210089
Product Name and Strength:	Pulmotech MAA (kit for the preparation of technetium 99m albumin aggregated injection) for injection, 2 mg per vial (albumin aggregated)
Product Type:	Single Ingredient Product
Rx or OTC:	Prescription (Rx)
Applicant/Sponsor Name:	CIS Bio International (CIS Bio)
Panorama #:	2019-32403200
DMEPA Safety Evaluator:	Sarah K. Vee, PharmD
DMEPA Team Leader:	Hina Mehta, PharmD

Contents

1 INTRODUCTION

This review evaluates the proposed proprietary name, Pulmotech MAA, from a safety and misbranding perspective. The sources and methods used to evaluate the proposed proprietary name are outlined in the reference section and Appendix A respectively. CIS Bio submitted an external name study, conducted by (b) (4), for this proposed proprietary name.

1.1 PRODUCT INFORMATION

The following product information is provided in the proprietary name submission received on June 12, 2019.

- Intended Pronunciation: pʊl moʊ tek
- Active Ingredient: kit for the preparation of technetium 99m albumin aggregated injection
- Indication of Use: Technetium Tc 99m Albumin Aggregated Injection is a lung imaging agent which may be used as an adjunct in the evaluation of pulmonary perfusion in adults and pediatric patients.

  Technetium Tc 99m Albumin Aggregated Injection also may be used in adults as an imaging agent to aid in the evaluation of peritoneovenous (LeVeen) shunt patency.
- Route of Administration: intravenous and intraperitoneal injection
- Dosage Form: for injection
- Strength: 2 mg per vial (albumin aggregated)
- Dose and Frequency:
  - Adults (average 70 kg): 37 to 148 MBq (1 to 4 mCi) of Technetium Tc 99m Albumin Aggregated Injection (for lung imaging).
  - The suggested intraperitoneal dosage range used in the average patient (70 kg) for peritoneovenous (LeVeen) shunt patency evaluation is 37 to 111 MBq (1 to 3 mCi
  - Pediatric patients: suggested intravenous dose to be employed for perfusion lung imaging is in the range of 0.925 to 1.85 MBq per kilogram (25 to 50 mcCi/kg) of body weight; a usual dose is 1.11 MBq per kilogram (30 mcCi/kg), except in newborns, in whom the administered dose should be 7.4 to 18.5 MBq (200 to 500 mcCi). 18.5 MBq (200 to 500 mcCi).
- How Supplied: Available in a kit containing five (5) vials (NDC# 69945-139-20) or a carton of thirty (30) vials (NDC# 69945-139-40). Included in each five (5) vial kit is one (1) package insert and five (5) radioassay information labels. Included in each thirty (30) vial carton is one (1) package insert and thirty (30) radioassay information labels.
- Storage: Technetium Tc 99m Albumin Aggregated Injection should be stored at 2° to 25°C (36° to 77°F) before preparation. Technetium Tc 99m Albumin Aggregated Injection

[redacted] (b) (4) after preparation, the shielded vial should be stored at 2° to 8°C (36° to 46°F).

- Reference Listed Drug/Reference Product: DraxImage MAA (NDA 17881)

2 RESULTS

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

2.1 MISBRANDING ASSESSMENT

The Office of Prescription Drug Promotion (OPDP) determined that Pulmotech MAA would not misbrand the proposed product. The Division of Medication Error Prevention and Analysis (DMEPA) and the Division of Medical Imaging Products (DMIP) concurred with the findings of OPDP's assessment for Pulmotech MAA.

2.2 SAFETY ASSESSMENT

The following aspects were considered in the safety evaluation of the proposed proprietary name, Pulmotech MAA.

2.2.1 United States Adopted Names (USAN) Search

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

2.2.2 Components of the Proposed Proprietary Name

CIS Bio indicated in their submission that the proposed proprietary name, Pulmotech MAA, is derived from "pulmonary", which pertains to the indication of the product (to evaluate pulmonary perfusion) and "technetium". MAA is an abbreviation for macroaggregated albumin.

This proprietary name is comprised of multiple words that does not contain any components (i.e. route of administration, dosage form, etc.) that are misleading or can contribute to medication error.

CIS Bio did not provide data to support that the proposed modifier 'MAA' is understood by health care practitioners and patients; however, the naming convention of using a modifier to represent macroaggregated albumin (e.g., DraxImage MAA and Technescan MAA) has been used in other product names. MAA is not available on its own and we do not anticipate that the modifier 'MAA' will be written on its own without the root name.

We note that modifiers may sometimes be omitted. If the modifier, MAA is omitted, there is no other Pulmotech product currently marketed from which this product will need to be distinguished from. Therefore, we do not find the modifier, MAA, misleading or vulnerable to confusion and find it acceptable for this product.

[a] USAN stem search conducted on June 26, 2019.

2.2.3 Comments from Other Review Disciplines at Initial Review

In response to the OSE, June 27, 2019 e-mail, the Division of Medical Imaging Products (DMIP) did not forward any comments or concerns relating to Pulmotech MAA at the initial phase of the review.

2.2.4 FDA Name Simulation Studies

Seventy-two (n=72) practitioners participated in DMEPA's prescription studies for Pulmotech MAA. One participant in the voice, two participants in the outpatient, and nine participants in the inpatient prescription study omitted the modifier "MAA" in their responses. We discuss the omission of the modifier in Section 2.2.2. The remaining 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[b] identified 79 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.

2.2.6 Names Retrieved for Review Organized by Name Pair Similarity

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

Table 1. Names Retrieved for Review Organized by Name Pair Similarity	
Similarity Category	Number of Names
Highly similar name pair: combined match percentage score ≥70%	6
Moderately similar name pair: combined match percentage score ≥55% to ≤ 69%	73
Low similarity name pair: combined match percentage score ≤54%	0

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

Our analysis of the 79 names contained in Table 1 determined none of the names will pose a risk for confusion with Proposed Proprietary Name as described in Appendices C through H.

[b] POCA search conducted on June 26, 2019 in version 4.3.

2.2.8 Communication of DMEPA's Analysis at Midpoint of Review

DMEPA communicated our findings to the Division of Medical Imaging Products (DMIP) via e-mail on September 3, 2019. At that time we also requested additional information or concerns that could inform our review. Per e-mail correspondence from the Division of Medical Imaging Products (DMIP) on September 4, 2019, they stated no additional concerns with the proposed proprietary name, Pulmotech MAA.

3 CONCLUSION

The proposed proprietary name, Proposed Proprietary Name, is acceptable.

If you have further questions or need clarifications, please contact Tri Bui Nguyen, OSE project manager, at 240-402-3726.

3.1 COMMENTS TO CIS BIO INTERNATIONAL

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

If any of the proposed product characteristics as stated in your submission, received on June 12, 2019, are altered prior to approval of the marketing application, the name must be resubmitted for review.

4 REFERENCES

1. *USAN Stems (https://www.ama-assn.org/about/united-states-adopted-names-approved-stems)*

   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 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 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[d]. 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).

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

- 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 does not share a common strength or dose.			
<u>Orthographic Checklist</u>		<u>Phonetic Checklist</u>	
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 <u>with</u> 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.

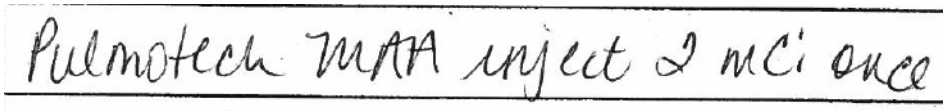
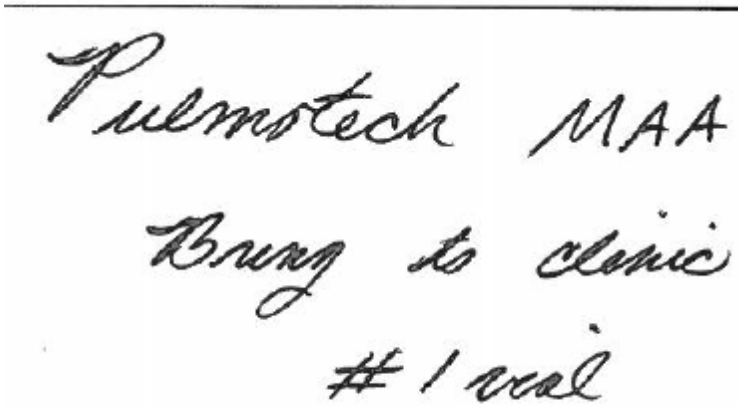
Appendix A1: Description of FAERS

The FDA Adverse Event Reporting System (FAERS) is a database that contains information on adverse event and medication error reports submitted to FDA. The database is designed to support the FDA's postmarket safety surveillance program for drug and therapeutic biologic products. The informatic structure of the FAERS database adheres to the international safety reporting guidance issued by the International Conference on Harmonisation. FDA's Office of

Surveillance and Epidemiology codes adverse events and medication errors to terms in the Medical Dictionary for Regulatory Activities (MedDRA) terminology. Product names are coded using the FAERS Product Dictionary. More information about FAERS can be found at: http://www.fda.gov/Drugs/GuidanceComplianceRegulatoryInformation/Surveillance/AdverseDrugEffects/default.htm.

Appendix B: Prescription Simulation Samples and Results

Figure 1. Pulmotech MAA Study (Conducted on June 28, 2019)

Handwritten Medication Order/Prescription	Verbal Prescription
Medication Order:  Outpatient Prescription:  	Pulmotech MAA Bring to clinic Dispense: #1 vial

FDA Prescription Simulation Responses (Aggregate Report)

Study Name: Pulmotech MAA

218 People Received Study

72 People Responded

Total	16	18	38	72

INTERPRETATION	OUTPATIENT	VOICE	INPATIENT	TOTAL
HOLMATEC MAA	0	1	0	1
HOLMOTEC MAA	0	1	0	1
HOMOTEC MAA	0	1	0	1
OMLATEC	0	1	0	1
POLMOTEC AAA	0	1	0	1
POMOTEC MAA	0	1	0	1
PREMOTECH	1	0	0	1
PUEMOTECH	1	0	0	1
PUEMOTECH MAA	3	0	0	3
PULMO TECH MAA	0	1	0	1
PULMOTEC AA	0	1	0	1

PULMOTEC AAA	0	1	0	1
PULMOTEC MAA	0	4	0	4
PULMOTECH	0	0	8	8
PULMOTECH MAA	10	4	27	41
PULMOTECH MMA	1	0	1	2
PUMOTECH	0	0	1	1
PUMOTECH MAA	0	1	1	2

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

No.	Proposed name: Pulmotech MAA Established name: kit for the preparation of technetium 99m albumin aggregated injection Dosage form: for injection Strength(s): 2 mg per vial (albumin aggregated) Usual Dose: Adults: (average 70 kg): 37 to 148 MBq (1 to 4 mCi); Pediatrics: 0.925 to 1.85 MBq/Kg (25 to 50 mcCi/kg)	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.	Pulmotech***	100	Root name is the subject of this review.
2.	Pulmotil	78	Veterinary product.
3.	Pulmotech MAA***	76	Subject of this review.
4.	Pulmolite	75	Product discontinued with no generic equivalents available.
5.	Pulmicort	74	Orthographic: The suffixes (tech vs. cort) of the name pair look different when scripted. Phonetic: The third syllables (tech vs. cort) of the name pair sound different when spoken. Product Characteristics: • Dosage form: Pulmicort is the root name for Pulmicort Flexhaler (aerosol powder) and Pulmicort Respules (inhalation suspension). Thus, a prescription for Pulmicort would require either the modifier or the dosage form. The dosage forms do not overlap with that of Pulmotech. • Strength: Pulmicort is available in multiple strengths (inhalation suspension: 0.25 mg/2 mL, 0.5 mg/2 mL, 1 mg/2 mL; aerosol powder: 90 mcg or 180 mcg) which would need to be specified on a prescription. These strengths do not overlap with the strength of Pulmicort. • Setting of Use: Pulmotech MAA will be prepared by a nuclear pharmacy as the product is a diagnostic

			radiopharmaceutical product and is limited to specialized handling, preparation, and dispensing. The setting of use of these two products in the medication use process differ.
6.	Pulmosal	71	Orthographic: The suffixes (tech vs. sal) of the name pair look different when scripted. Phonetic: The third syllables (tech vs. sal) of the name pair sound different when spoken. Setting of Use: Pulmosal is an inhalation solution used in conjunction with a nebulizer. Pulmotech MAA will be prepared by a nuclear pharmacy as the product is a diagnostic radiopharmaceutical product and is limited to specialized handling, preparation, and dispensing. The setting of use of these two products in the medication use process differ.

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 (%)
7.	Polymox	64
8.	Amphotec	58
9.	Pilostat	57
10.	Promacot	56
11.	Percocet	56

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: Pulmotech MAA Established name: kit for the preparation of technetium 99m albumin aggregated injection Dosage form: for injection Strength(s): 2 mg per vial (albumin aggregated) Usual Dose: Adults: (average 70 kg): 37 to 148 MBq (1 to 4 mCi); Pediatrics: 0.925 to 1.85 MBq/Kg (25 to 50 mcCi/kg)	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
12.	Pulmozyme	68	Orthographic: The suffixes (tech vs. zyme) of the name pair look different when scripted. Phonetic: The third syllables (tech vs. zyme) of the name pair sound different when spoken. Setting of Use: Pulmozyme is an inhalation solution used in conjunction with a nebulizer. Pulmotech MAA will be prepared by a nuclear pharmacy as the product is a diagnostic radiopharmaceutical product and is limited to specialized handling, preparation, and dispensing. The setting of use of these two products in the medication use process differ.
13.	Choletec	64	This name pair has sufficient orthographic and phonetic differences.
14.	Tolmetin	64	This name pair has sufficient orthographic and phonetic differences.
15.	Phosphotec	63	This name pair has sufficient orthographic and phonetic differences.
16.	Dermotic	62	This name pair has sufficient orthographic and phonetic differences.
17.	Cool Bottoms	62	This name pair has sufficient orthographic and phonetic differences.
18.	Prilosec	60	This name pair has sufficient orthographic and phonetic differences.
19.	Purtect	60	This name pair has sufficient orthographic and phonetic differences.
20.	Polmon	58	Orthographic: The lengths of the names differ by 3 letters. The suffixes (tech vs. n) of the name pair look different when scripted.

No.	Proposed name: Pulmotech MAA Established name: kit for the preparation of technetium 99m albumin aggregated injection Dosage form: for injection Strength(s): 2 mg per vial (albumin aggregated) Usual Dose: Adults: (average 70 kg): 37 to 148 MBq (1 to 4 mCi); Pediatrics: 0.925 to 1.85 MBq/Kg (25 to 50 mcCi/kg)	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
			Phonetic: Pulmotech contains an extra syllable. The last syllables sound different (tech vs. mon). Polmon is an oral solution given every 4-6 hours. Pulmotech MAA will be prepared by a nuclear pharmacy as the product is a diagnostic radiopharmaceutical product and is limited to specialized handling, preparation, and dispensing. The setting of use of these two products in the medication use process differ.
21.	Sulmeprim	58	This name pair has sufficient orthographic and phonetic differences.
22.	Ultec	57	This name pair has sufficient orthographic and phonetic differences.
23.	Pneumomist	57	This name pair has sufficient orthographic and phonetic differences.
24.	(b) (4) ***	56	A modifier for a proposed proprietary name for BLA 761059 found acceptable (OSE # 2018-25169630).
25.	Sipuleucel-T	56	This name pair has sufficient orthographic and phonetic differences.
26.	Topotecan	56	This name pair has sufficient orthographic and phonetic differences.
27.	Phlemex	56	This name pair has sufficient orthographic and phonetic differences.
28.	Phenoptic	56	This name pair has sufficient orthographic and phonetic differences.
29.	Pseudocot	56	This name pair has sufficient orthographic and phonetic differences.
30.	Pseudocot-T	56	This name pair has sufficient orthographic and phonetic differences.

Appendix F: Low Similarity Names (e.g., combined POCA score is ≤54%) – 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
31.	Palmitate	69	Name identified in RxNorm database. Product is deactivated and no generic equivalents are available.
32.	Pulmadil	68	International product marketed in various countries.
33.	Humotet	64	International product marketed in Ireland.
34.	Coltec Ec	64	International product marketed in UK.
35.	Pramotic	64	Name identified in RxNorm database. Product is deactivated and no generic equivalents are available.
36.	Piloptic	63	Name identified in RxNorm database. Product is deactivated and no generic equivalents are available.
37.	Piloptic-1	63	Name identified in RxNorm database. Product is deactivated and no generic equivalents are available.
38.	Piloptic-1/2	63	Name identified in RxNorm database. Product is deactivated and no generic equivalents are available.
39.	Piloptic-2	63	Name identified in RxNorm database. Product is deactivated and no generic equivalents are available.
40.	Piloptic-3	63	Name identified in RxNorm database. Product is deactivated and no generic equivalents are available.
41.	Piloptic-4	63	Name identified in RxNorm database. Product is deactivated and no generic equivalents are available.
42.	Piloptic-6	63	Name identified in RxNorm database. Product is deactivated and no generic equivalents are available.
43.	Pulmicort Ls	62	Name identified in RxNorm database. Unable to find product characteristics in commonly used drug databases.
44.	Palmate	62	Name identified in RxNorm database. Unable to find product characteristics in commonly used drug databases.
45.	Palmatine	62	Name identified in RxNorm database. Unable to find product characteristics in commonly used drug databases.
46.	Numotac	61	International product marketed in Netherlands and UK.
47.	Palm Acid	61	Name identified in RxNorm database. Unable to find product characteristics in commonly used drug databases.
48.	Ppg 12 Buteth 16	60	Product is not a drug. It is synthetic polymers used in cosmetics.

No.	Name	POCA Score (%)	Failure preventions
49.	Ppg-26-Buteth-26	60	Product is not a drug. It is synthetic polymers used in cosmetics.
50.	Pulmari-Gp	60	Name identified in RxNorm database. Product is deactivated and no generic equivalents are available.
51.	Paldesic	60	International product marketed in UK.
52.	Sulmet	58	Veterinary product.
53.	Platet	58	Name identified in RxNorm database. Unable to find product characteristics in commonly used drug databases.
54.	Plemex	58	International product marketed in Philippines and Hong Kong.
55.	Polymycin	58	Name identified in RxNorm database. Unable to find product characteristics in commonly used drug databases. Not available as a stand alone product.
56.			(b) (4)
57.	Promacet	57	Name identified in RxNorm database. Product is deactivated and no generic equivalents are available.
58.	Pseudocot-C	56	Name identified in RxNorm database. Product is deactivated and no generic equivalents are available.
59.	Polytine Cs	56	Name identified in RxNorm database. Product is deactivated and no generic equivalents are available.
60.	Pluset	56	Veterinary product.
61.	Polygesic	56	Name identified in RxNorm database. Product is deactivated and no generic equivalents are available.
62.	Poly Pact	55	Name identified in RxNorm database. Unable to find product characteristics in commonly used drug databases.

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

No.	Name	POCA Score (%)
63.	Multe-Pak-4	62
64.	Multe-Pak-5	62

[e] 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 (%)
65.	Dolotic	59
66.	Timoptic	58
67.	Malotic	58
68.	(b) (4) ***	58
69.	Solosec	57
70.	Aloetouch	56
71.	Socalm Patch	56
72.	Lomocot	56
73.	Monocete	56
74.	Sulpho-Lac	56
75.	Cromoptic	56
76.	Dolomite	56
77.	(b) (4) ***	56
78.	Tulobuterol	55
79.	Tolnaftate	55

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/s/

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