CENTER FOR DRUG EVALUATION AND RESEARCH

APPLICATION NUMBER:

022225Orig1s000

PROPRIETARY NAME REVIEW(S)

PROPRIETARY NAME MEMORANDUM

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:	July 21, 2015
Application Type and Number:	NDA 022225
Product Name and Strength:	Bridion (Sugammadex Sodium) Injection 200 mg/2 mL and 500 mg/5mL
Product Type:	Single Ingredient
Rx or OTC:	Rx
Applicant/Sponsor Name:	Organon
Submission Date:	June 19, 2015
Panorama #:	2015-756324
DMEPA Primary Reviewer:	James Schlick, RPh, MBA
DMEPA Team Leader:	Vicky Borders-Hemphill, PharmD

Contents

1 INTRODUCTION

This memorandum is to reassess the proposed proprietary name, Bridion. DMEPA previously found the name acceptable in OSE Review No. 2014-40699[1], dated December 19, 2014.

1.1 PRODUCT INFORMATION

- Intended Pronunciation: Bry-dee-on
- Active Ingredient: Sugammadex
- Indication of Use: Routine reversal of shallow or profound neuromuscular blockage induced by rocuronium or vecuronium and immediate reversal of neuromuscular blockade at 3 minutes after administration of rocuronium.
- Route of Administration: Intravenous
- Dosage Form: Injection Solution
- Strength: 100 mg/mL
- Dose and Frequency:
    - Routine shallow reversal: 2 mg/kg once
    - Routine profound reversal: 4 mg/kg once
    - Immediate reversal: 16 mg/kg once
- How Supplied: 500 mg/5 mL, 200 mg/2 mL
- Storage: USP controlled room temperature
- Container and Closure Systems: Single dose vials in a box of 10

1.2 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 Analgesia, Anesthesia, and Addiction Products (DAAAP) concurred with the findings of OPDP's assessment of the proposed name.

1.3 SAFETY ASSESSMENT

To reassess the proposed proprietary name, DMEPA searched the POCA database (see Section 3) and conducted a gap analysis to identify names approved since the previous OSE Proprietary Name Review #2014-40699 that have orthographic and phonetic

[1] Schlick, J. Proprietary Name Review for Bridion (NDA 022225). Silver Spring (MD): Food and Drug Administration, Center for Drug Evaluation and Research, Office of Surveillance and Epidemiology, Division of Medication Error Prevention and Analysis (US); 2014 DEC 19 42p. OSE RCM No. 2014-40699.

similarities to the proposed name Bridion. Our POCA search did not identify any new names that represent a potential source of drug name confusion.

We re- evaluated the previously identified names of concern considering any lessons learned from recent post-marketing experience, which may have altered our previous conclusion regarding the acceptability of the proposed proprietary name. Furthermore, DMEPA searched the USAN stem list to determine if the name contains any USAN stems as of the last USAN updates. The July 2, 2015 search of USAN stems did not find any USAN stems in the proposed proprietary name.

Lastly, we reviewed the product characteristics in the current proprietary name submission and compared them to the product characteristics in the previous proprietary name review. We determined that none of the product characteristics have changed since the last proprietary name review.

As a result, we maintain that the name, Bridion, is acceptable.

2 CONCLUSIONS

The proposed proprietary name is acceptable.

If you have further questions or need clarifications, please contact Lisa Skarupa, OSE project manager, at 301-796-2219.

2.1 COMMENTS TO THE APPLICANT

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

3 REFERENCES

1. Schlick, J. Proprietary Name Review for Bridion (NDA 022225). Silver Spring (MD): Food and Drug Administration, Center for Drug Evaluation and Research, Office of Surveillance and Epidemiology, Division of Medication Error Prevention and Analysis (US); 2014 DEC 19 42p. OSE RCM No. 2014-40699.

2. ***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.

3. ***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.

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

/s/

JAMES H SCHLICK
07/21/2015

BRENDA V BORDERS-HEMPHILL
07/22/2015

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:	December 19, 2014
Application Type and Number:	NDA 022225
Product Name and Strength:	Bridion (Sugammadex Sodium) Injection 200 mg/2 mL and 500 mg/5mL
Product Type:	Single
Rx or OTC:	Rx
Applicant/Sponsor Name:	Organon
Submission Date:	October 23, 2014
Panorama #:	2014-40699
DMEPA Primary Reviewer:	James Schlick, MBA, RPh
DMEPA Acting Team Leader:	Vicky Borders-Hemphill, PharmD

Contents

1 INTRODUCTION

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

1.1 REGULATORY HISTORY

DMEPA previously reviewed the proposed name, (b) (4), submitted to NDA 022225 on February 19, 2008, and found the name acceptable (refer to OSE review #2008-384 finalized on May 23, 2008). NDA 022225 received a Not Approvable letter on July 31, 2008. In Europe, the product was approved by the EMEA in 2008 with the proprietary name, Bridion***.

On December 20, 2011, approximately three years following Bridion's*** approval in the European market, the Applicant withdrew the proposed name (b) (4) from NDA 022225 and submitted the proposed name Bridion*** to IND 068029 on December 15, 2011.

DMEPA completed an evaluation of the proprietary name Bridion*** in IND 68029 Proprietary Name Review completed June 7, 2012. The name was determined to be unacceptable for two reasons: 1) orthographic similarity to and overlapping product characteristics with Bactrim (Sulfamethoxazole and Trimethoprim) and 2) similarity in spelling and pronunciation to the name Tridione (Trimethadione) 21 CFR 201.10(c)(5).

Six months later, the Applicant submitted a proprietary name request proposing the name (b) (4) (submitted to NDA 022225 on December 21, 2012). (b) (4) A few weeks following DMEPA's receipt of the (b) (4) submission on January 9, 2013, DMEPA communicated to the Applicant that the inclusion of (b) (4) was unacceptable. A few days later on January 14, 2013, the Applicant withdrew the proposed proprietary name (b) (4) from NDA 022225 and submitted a Request to Reconsider the proposed proprietary name, Bridion***.

On April 15, 2013, DMEPA issued a letter communicating that the request for reconsideration did not address the safety concerns described in the letter dated June 7, 2012 finding Bridion unacceptable. The reasons are described fully in NDA 022225 Proprietary Name Review Request for Reconsideration completed April 15, 2013 and center around outstanding concerns for confusion due to the similarity of the Bridion name with the following names: 1) Bactrim (Sulfamethoxazole and Trimethoprim) and 2) Tridione (Trimethadione).

Based on the DMEPA decision outlined in the April 15, 2013 letter, the Applicant submitted a formal dispute resolution request for the proposed proprietary name, Bridion, on June 27, 2014 under IND 068029/NDA 022225. The appeal decision determined that the name, Bridion, was acceptable at that time based upon orthographic differences of the name pair and the characteristics and use of the drug products.

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Thus, the Applicant re-submitted the proposed proprietary name, Bridion, on October 23, 2014 in response to their NDA re-submission package on October 22, 2014.

1.2 PRODUCT INFORMATION

The following product information is provided in the October 23, 2014 proprietary name submission.

- Intended Pronunciation: Bry-dee-on
- Active Ingredient: Sugammadex
- Indication of Use: Routine reversal of shallow or profound neuromuscular blockage induced by rocuronium or vecuronium and immediate reversal of neuromuscular blockade at 3 minutes after administration of rocuronium.
- Route of Administration: Intravenous
- Dosage Form: Injection Solution
- Strength: 100 mg/mL
- Dose and Frequency:
    - Routine shallow reversal: 2 mg/kg once
    - Routine profound reversal: 4 mg/kg once
    - Immediate reversal: 16 mg/kg once
- How Supplied: 500 mg/5 mL, 200 mg/2 mL
- Storage: USP controlled room temperature
- Container and Closure Systems: Single dose vials in a box of 10

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 Analgesia, Anesthesia, and Addiction Products (DAAAP) concurred with the findings of OPDP's assessment of the proposed name.

2.2 SAFETY ASSESSMENT

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

2.2.1 United States Adopted Names (USAN) Search

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

2.2.2 Components of the Proposed Proprietary Name

The Applicant did not provide a derivation or intended meaning for the proposed name, Bridion in their submission. 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

Ninety-eight 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. Seventy-three people interpreted the name, Bridion, correctly. In the voice prescription study, the first 'i' was misinterpreted as the letter 'y' and the second 'i' in the name was misinterpreted as the letter 'e'. 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, November 14, 2014 e-mail, the Division of Analgesia, Anesthesia, and Addiction Products (DAAAP) 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 ≥50% retrieved from our POCA search[2] organized as highly similar, moderately similar or low similarity for further evaluation.

Table 1. POCA Search Results	**Number of Names**
Highly similar name pair: combined match percentage score ≥70%	8
Moderately similar name pair: combined match percentage score ≥50% to ≤ 69%	405
Low similarity name pair: combined match percentage score ≤49%	0

[1]USAN stem search conducted on December 3, 2014.

[2] POCA search conducted on November 25, 2014.

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

Our analysis of the 413 names contained in Table 1 determined 413 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 Analgesia, Anesthesia, and Addiction Products (DAAAP) via e-mail on December 17, 2014. At that time we also requested additional information or concerns that could inform our review. Per e-mail correspondence from the (DAAAP) on December 19, 2014, they stated no additional concerns with the proposed proprietary name, Bridion.

3 CONCLUSIONS

The proposed proprietary name is acceptable.

If you have further questions or need clarifications, please contact Lisa Skarupa, OSE project manager, at 301-796-2219.

3.1 COMMENTS TO THE APPLICANT

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

If any of the proposed product characteristics as stated in your October 23, 2014 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.

Drugs@FDA

Drugs@FDA is an FDA Web site that contains most of the drug products approved in the United States since 1939. The majority of labels, approval letters, reviews, and other information are available for drug products approved from 1998 to the present. Drugs@FDA contains official information about FDA-approved *brand name* and *generic drugs*; *therapeutic biological products*, *prescription* and *over-the-counter* human drugs; and *discontinued drugs* (see Drugs @ FDA Glossary of Terms, available at http://www.fda.gov/Drugs/InformationOnDrugs/ucm079436.htm#ther_biological).

RxNorm

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

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

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

Division of Medication Errors Prevention and Analysis proprietary name consultation requests

This is a list of proposed and pending names that is generated by the Division of Medication Error Prevention and Analysis from the Access database/tracking system.

APPENDICES

Appendix A

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

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

a. Preliminary Assessment: We consider inclusion of USAN stems or other characteristics that when incorporated into a proprietary name may cause or contribute to medication errors (i.e., dosing interval, dosage form/route of administration, medical or product name abbreviations, names that include or suggest the composition of the drug product, etc.) See prescreening checklist below in Table 2*. DMEPA defines a medication error as any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the health care professional, patient, or consumer. [3]

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

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

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

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

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

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

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

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

   Three separate studies are conducted within the Centers of the FDA for the proposed proprietary name to determine the degree of confusion of the proposed proprietary name with marketed U.S. drug names (proprietary and established) due to similarity in visual appearance with handwritten prescriptions or verbal pronunciation of the drug name. The studies employ healthcare professionals (pharmacists, physicians, and nurses), and attempts to simulate the prescription ordering process. The primary Safety Evaluator uses the results to identify orthographic or phonetic vulnerability of the proposed name to be misinterpreted by healthcare practitioners.

   In order to evaluate the potential for misinterpretation of the proposed proprietary name in handwriting and verbal communication of the name, inpatient medication orders and/or outpatient prescriptions are written, each consisting of a combination of marketed and unapproved drug products, including the proposed name. These orders are optically scanned and one prescription is delivered to a random sample of participating health professionals via e-mail. In addition, a verbal prescription is recorded on voice mail. The voice mail messages are then sent to a random sample of the participating health professionals for their interpretations and review. After receiving either the written or verbal prescription orders, the participants record their interpretations of the orders which are recorded electronically.

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

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

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

When provided, DMEPA considers external proprietary name studies conducted by or for the Applicant/Sponsor and incorporates the findings of these studies into the overall risk assessment.

The DMEPA primary reviewer assigned to evaluate the proposed proprietary name is responsible for considering the collective findings, and provides an overall risk assessment of the proposed proprietary name.

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

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

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

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

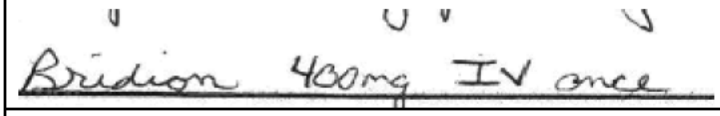
	Orthographic Checklist (Y/N to each question) • Do the names begin with different first letters? Note that even when names begin with different first letters, certain letters may be confused with each other when scripted. • Are the lengths of the names dissimilar* when scripted? *FDA considers the length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

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

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

Appendix B: Prescription Simulation Samples and Results

Figure 1. Bridion Study (Conducted on November 6, 2014)

Handwritten Requisition Medication Order	Verbal Prescription
Medication Order:  Outpatient Prescription: (b) (4)	Bridion 500 mg (b) (4) #1

FDA Prescription Simulation Responses (Aggregate 1 Rx Studies Report)

			258 People Received Study 98 People Responded	
Study Name: Bridion				
Total	**35**	**31**	**32**	**98**
INTERPRETATION	**OUTPATIENT**	**VOICE**	**INPATIENT**	**TOTAL**
BRADION	0	1	0	1
BRIDEON	0	12	0	12
BRIDION	35	7	30	72
BRIDION 400MG	0	0	1	1
BRIDON	0	0	1	1
BRIVEON	0	2	0	2
BRIVION	0	1	0	1
BRYDEION	0	1	0	1
BRYDEON	0	3	0	3
BRYDIAN	0	1	0	1
BRYDION	0	3	0	3

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

No.	**Proposed name: Bridion** **Established name: Sugammadex** **Dosage form: Injection Solution** **Strength(s): 200 mg/2 mL and 500 mg/5 mL** **Usual Dose: 2 mg/kg, 4 mg/kg or 16 mg/kg (depending on type of reversal) once after neuromuscular blockade**	**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.	(b) (4)	82	Alternate name for Bridion. The name (b) (4) was found unacceptable because it (b) (4) The Applicant withdrew the name and submitted Bridion.
2.	Baridium	74	The prefixes of this name pair have sufficient orthographic differences. Bridion has two letters in between the first two upstrokes vs. Baridium has three letters; The first and second syllables of this name pair sound different. Bridion has three syllables vs. Baridium has four syllables.
3.	Obredon***	74	The prefixes of this name pair have sufficient orthographic differences The first letter 'O' versus 'B' make the name pair appear differently when scripted. The first and second syllables of this name pair sound different.
4.	Brevicon	73	The prefixes and infixes of this name pair have sufficient orthographic differences. Bridion has an upstroke in the middle of the name vs. Brevicon does not have an upstroke in the middle of the name. The final syllables of this name pair sound different. The final syllable in Bridion starts with the sound "oh" vs. the final syllable in Brevicon starts with the sound "k"
5.	DOridEN	72	Product withdrawn, per FR notice.

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No.	Proposed name: Bridion Established name: Sugammadex Dosage form: Injection Solution Strength(s): 200 mg/2 mL and 500 mg/5 mL Usual Dose: 2 mg/kg, 4 mg/kg or 16 mg/kg (depending on type of reversal) once after neuromuscular blockade	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.
6.	(b) (4)	71	Name withdrawn under NDA 205474 due to the (b) (4) The name, Obredon, was submitted and found conditionally acceptable on November 12, 2014. See Obredon in Appendix C, #3.
7.	B-12 Resin	70	Unable to find product characteristics in commonly used drug databases
8.	TridionE	70	In the current medication use system, this similarity does not pose a risk for error because the settings of use (operative care versus Compassionate Use Program) do not overlap. In short: the two products cannot be confused with one another because we have no expectation that they would be ordered, dispensed, or administered in the same setting currently. Therefore, we have no expectation that the similarity of the Bridion name to Tridione could lead to errors.

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

No.	Proposed Name	POCA Score (%)
1.	Duration	68
2.	Prascion	68
3.	Bronitin	66
4.	Bromine	65
5.	PRANDIN	65 phonetic = 71
6.	Triban	65 phonetic = 70
7.	MIRADON	64 phonetic = 71
8.	Prodrin	64 phonetic = 71
9.	Brom Tann	62
10.	Iridium	62
11.	Privine	62 phonetic = 76
12.	Uridon	62
13.	Atridine	61
14.	Karidium	61
15.	BELDIN	60
16.	BRETHINE	60
17.	BRIELLYN	60
18.	ridiprin	60
19.	Uridine	59
20.	TridERM	58
21.	Triveen	58 phonetic = 70
22.	Bromatan	57
23.	(b) (4)	56
24.	Biotin	56
25.	Brofed	56

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No.	Proposed Name	POCA Score (%)
26.	Broncot	56
27.	BROVANA	56
28.	Busodium	56
29.	BYDUREON	56
30.	ridramin	56
31.	TridESILON	56
32.	PRE-PEN	55 phonetic = 70
33.	Barbidonna	54
34.	Barophen	54
35.	Baycadron	54
36.	BRICANYL	54
37.	brimonidine	54
38.	Bromfed	54
39.	Broncolin	54
40.	Bronkaid	54
41.	ridifed	54
42.	TridiL	54
43.	Beryllium	53
44.	BETADINE	52
45.	B-Fedrine	52
46.	Biolon	52
47.	(b) (4)	52
48.	Boron	52
49.	BranchAmin	52
50.	BRANCHAMIN 4%	52
51.	Bromaline	52
52.	BROMDEC	52
53.	Broncotron	52

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No.	Proposed Name	POCA Score (%)
54.	Coricidin	52
55.	rid-A-Pain	52
56.	Rubidium	52
57.	BidiL	51
58.	Bebulin	50
59.	BENYLIN	50
60.	Benzoin	50
61.	Betaine	50
62.	Bonine	50
63.	BREVICON 21-DAY	50
64.	BREVICON 28-DAY	50
65.	Bromadine-DM	50
66.	Bronkids	50
67.	Brontuss	50
68.	Bron-Tuss	50
69.	Plexion	50
70.	pyrithione	50
71.	Trionate	50
72.	VUSion	50

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

No.	**Proposed name: Bridion** **Established name: Sugammadex** **Dosage form: Injection Solution** **Strength(s): 200 mg/2 mL and 500 mg/5 mL** **Usual Dose: 2 mg/kg, 4 mg/kg or 16 mg/kg (depending on type of reversal) once after neuromuscular blockade**	**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.	Prodium	68 phonetic = 83	The prefixes of this name pair have sufficient orthographic differences The first syllables of this name pair sound different
2.	pyridium	65	The prefixes of this name pair have sufficient orthographic differences Bridion has three syllables vs. Pyridium has four syllables.
3.	Xuriden***	65	The prefixes and infixes of this name pair have sufficient orthographic differences The first and second syllables of this name pair sound different
4.	Viridium	64	The prefixes of this name pair have sufficient orthographic differences Bridion has three syllables vs. Viridium has four syllables.
5.	BEPADIN	62	The infixes of this name pair have sufficient orthographic differences The first and second syllables of this name pair sound different

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No.	Proposed name: Bridion Established name: Sugammadex Dosage form: Injection Solution Strength(s): 200 mg/2 mL and 500 mg/5 mL Usual Dose: 2 mg/kg, 4 mg/kg or 16 mg/kg (depending on type of reversal) once after neuromuscular blockade	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
6.	Eridium	62	The prefixes of this name pair have sufficient orthographic differences The first syllables of this name pair sound different and Bridion has three syllables vs. Eridium has four syllables
7.	PRIFTIN	62 phonetic = 70	The prefixes and infixes of this name pair have sufficient orthographic differences The first syllables of this name pair sound different and Bridion has three syllables vs. Priftin has two syllables
8.	Bupropion	60	The prefixes and infixes of this name pair have sufficient orthographic differences The first and second syllables of this name pair sound different. Bridion has three syllables vs. Buproprion has four syllables.
9.	PARAdionE	60	The prefixes of this name pair have sufficient orthographic differences The first syllables of this name pair sound different, and Bridion has three syllables vs. Paradione has four syllables

No.	Proposed name: Bridion Established name: Sugammadex Dosage form: Injection Solution Strength(s): 200 mg/2 mL and 500 mg/5 mL Usual Dose: 2 mg/kg, 4 mg/kg or 16 mg/kg (depending on type of reversal) once after neuromuscular blockade	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
10.	(b) (4)	58	The first and second syllables of this name pair sound different. Bridion has three syllables vs. (b) (4) (b) (4)
11.	Breonesin	58	The infixes and suffixes of this name pair have sufficient orthographic differences The first and second syllables of this name pair sound different. Bridion has three syllables vs. Breonesin has four syllables
12.	(b) (4)	58	The infixes and suffixes of this name pair have sufficient orthographic differences The third syllables of this name pair sound different

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No.	Proposed name: Bridion Established name: Sugammadex Dosage form: Injection Solution Strength(s): 200 mg/2 mL and 500 mg/5 mL Usual Dose: 2 mg/kg, 4 mg/kg or 16 mg/kg (depending on type of reversal) once after neuromuscular blockade	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
13.	Mobidin	58	The prefixes and infixes of this name pair have sufficient orthographic differences The first and second syllables of this name pair sound different
14.	BRILINTA	57	The suffixes of this name pair have sufficient orthographic differences The second and third syllables of this name pair sound different.
15.	DYRENIUM	57 phonetic = 70	The prefixes and infixes of this name pair have sufficient orthographic differences The first and second syllables of this name pair sound different. Bridion has three syllables vs. Dyrenium has four syllables.
16.	BICILLIN	56	The infixes of this name pair have sufficient orthographic differences The first and second syllables of this name pair sound different
17.	Bran	56	Bridion contains three extra letters elongating the name. Bridion has an upstroke letter in the middle of the name where the name, Bran, does not. Bridion has three syllables vs. Bran has one syllable.
18.	bretylium	56	The infixes of this name pair have sufficient orthographic differences The second syllables of this name pair sound different. Bridion has three syllables vs. bretylium has four syllables.

No.	Proposed name: Bridion Established name: Sugammadex Dosage form: Injection Solution Strength(s): 200 mg/2 mL and 500 mg/5 mL Usual Dose: 2 mg/kg, 4 mg/kg or 16 mg/kg (depending on type of reversal) once after neuromuscular blockade	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
19.	BRISTAGEN	55	The infixes and suffixes of this name pair have sufficient orthographic differences The second and third syllables of this name pair sound different
20.	Buproban	55	The infixes of this name pair have sufficient orthographic differences The first and second syllables of this name pair sound different.
21.	BERUBIGEN	54	The suffixes of this name pair have sufficient orthographic differences The second and third syllables of this name pair sound different
22.	Budeprion	54	The infixes of this name pair have sufficient orthographic differences The first and second syllables of this name pair sound different. Bridion has three syllables vs. Budeprion has four syllables
23.	PRAMINE	54 phonetic = 71	The infixes of this name pair have sufficient orthographic differences The second syllables of this name pair sound different, and Bridion has three syllables vs. Pramine has two syllables.
24.	BANAN	53	The infixes of this name pair have sufficient orthographic differences The second syllables of this name pair sound different, and Bridion has three syllables vs. Banan has two syllables

No.	Proposed name: Bridion Established name: Sugammadex Dosage form: Injection Solution Strength(s): 200 mg/2 mL and 500 mg/5 mL Usual Dose: 2 mg/kg, 4 mg/kg or 16 mg/kg (depending on type of reversal) once after neuromuscular blockade	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
25.	BIAXIN	52	The infixes of this name pair have sufficient orthographic differences The first and second syllables of this name pair sound different
26.	(b) (4)	52	The infixes and suffixes of this name pair have sufficient orthographic differences The second and third syllables of this name pair sound different
27.	dioVAN	52	The infixes of this name pair have sufficient orthographic differences The first and second syllables of this name pair sound different.
28.	Barium	51	The infixes of this name pair have sufficient orthographic differences The first and second syllables of this name pair sound different
29.	Cerubidin	51	The prefixes and suffixes of this name pair have sufficient orthographic differences The first, second, and third syllables of this name pair sound different. Bridion has three syllables vs. Cerubidin has four syllables

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No.	Proposed name: Bridion Established name: Sugammadex Dosage form: Injection Solution Strength(s): 200 mg/2 mL and 500 mg/5 mL Usual Dose: 2 mg/kg, 4 mg/kg or 16 mg/kg (depending on type of reversal) once after neuromuscular blockade	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
30.	Predate-50	51 phonetic =71	The suffixes of this name pair have sufficient orthographic differences The third syllables of this name pair sound different, and Bridion has three syllables vs. Predate has two syllables.
31.	Tusscidin	51	The prefixes of this name pair have sufficient orthographic differences The first and second syllables of this name pair sound different
32.	BETALIN 12	50	The infixes of this name pair have sufficient orthographic differences The first and second syllables of this name pair sound different
33.	(b) (4)	50	The suffixes of this name pair have sufficient orthographic differences The second and third syllables of this name pair sound different
34.	BRETYLOL	50	The infixes and suffixes of this name pair have sufficient orthographic differences The second and third syllables of this name pair sound different

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

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

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

No.	Name	POCA Score (%)	Failure preventions
1.	bromide ion	68	Unable to find product characteristics in commonly used drug databases
2.	Tridane	67	Unable to find product characteristics in commonly used drug databases
3.	Jeridin	65	Unable to find product characteristics in commonly used drug databases
4.	Brulidine	64	Unable to find product characteristics in commonly used drug databases
5.	(b) (4)	64 phonetic = 77	Secondary name under NDA 202513. The name Gelnique was approved on January 27, 2009
6.	Predone	64 phonetic = 79	Unable to find product characteristics in commonly used drug databases. Prednisolone product marketed in India
7.	BORATE ion	63	Unable to find product characteristics in commonly used drug databases
8.	Brufen	63	Unable to find product characteristics in commonly used drug databases
9.	Piriton	63 phonetic = 70	Unable to find product characteristics in commonly used drug databases
10.	brivudine	62	Unable to find product characteristics in commonly used drug databases
11.	(b) (4)	62	Secondary name under NDA 204168. The name, Fetzima, was approved on July 25, 2013
12.	Iduridin	62	Unable to find product characteristics in commonly used drug databases
13.	Biperiden	60	Unable to find product characteristics in commonly used drug databases
14.	Frisium	60 phonetic = 72	Unable to find product characteristics in commonly used drug databases
15.	Geridium	60	Unable to find product characteristics in commonly used drug databases
16.	Tridrane	60	Unable to find product characteristics in commonly used drug databases

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No.	Name	POCA Score (%)	Failure preventions
17.	Brolene	59	Unable to find product characteristics in commonly used drug databases
18.	Barogan	58	Unable to find product characteristics in commonly used drug databases
19.	Brevidil	58	Unable to find product characteristics in commonly used drug databases
20.	pridinol	58	Unable to find product characteristics in commonly used drug databases
21.	(b) (4)	57	The name was found unacceptable in OSE Review# 2010-2307 dated January 25, 2011. The name Bethkis was approved under NDA 201820 on October 12, 2012
22.	Brondil	57	Unable to find product characteristics in commonly used drug databases
23.	(b) (4)	56	The manufacturer name of Tysabri in OSE Review# 2007-160, BLA 125104. The name Tysabri was approved under this BLA on November 23, 2004
24.	Brevidil M	56	Unable to find product characteristics in commonly used drug databases
25.	Bromaphen	56	Unable to find product characteristics in commonly used drug databases
26.	Lidifen	56	Unable to find product characteristics in commonly used drug databases
27.	Bovadine	55	Veterinary product for iodine
28.	Eprident	55	Unable to find product characteristics in commonly used drug databases
29.	Operidine	55	Unable to find product characteristics in commonly used drug databases
30.	Barmine	54	Unable to find product characteristics in commonly used drug databases
31.	(b) (4)	54	Secondary name for Evekeo under ANDA 200166. The name Evekeo was approved on August 9, 2012
32.	Britiazim	54	Unable to find product characteristics in commonly used drug databases
33.	budipine	54	Unable to find product characteristics in commonly used drug databases

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No.	Name	POCA Score (%)	Failure preventions
34.	MEridiA	54	Withdrawn from the Federal Register effective December 21, 2010
35.	nitrite ion	54	Unable to find product characteristics in commonly used drug databases
36.	Prefrin	54	Unable to find product characteristics in commonly used drug databases
37.	Tropium	54 phonetic = 71	Unable to find product characteristics in commonly used drug databases
38.	Bepridil	53	Unable to find product characteristics in commonly used drug databases
39.	Berman	52	Unable to find product characteristics in commonly used drug databases
40.	(b) (4)	52	The name was found unacceptable in OSE Review# 2012-1392. The name Adempas was approved under NDA 204819 on October 8, 2013
41.	Brom-A-Cot	52	Unable to find product characteristics in commonly used drug databases
42.	Chloride ion	52	Unable to find product characteristics in commonly used drug databases
43.	Fucidin	52	Unable to find product characteristics in commonly used drug databases
44.	Povidine	52	Unable to find product characteristics in commonly used drug databases
45.	ridenol	52	Unable to find product characteristics in commonly used drug databases
46.	Triolein	52	Unable to find product characteristics in commonly used drug databases
47.	Fluoride ion	51	Unable to find product characteristics in commonly used drug databases
48.	iodide ion	51	Unable to find product characteristics in commonly used drug databases
49.	Balagan	50	Unable to find product characteristics in commonly used drug databases
50.	barium cation	50	Unable to find product characteristics in commonly used drug databases

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No.	Name	POCA Score (%)	Failure preventions
51.	Betadren	50	Unable to find product characteristics in commonly used drug databases
52.	Biorphen	50	Unable to find product characteristics in commonly used drug databases
53.	Bracco	50	Unable to find product characteristics in commonly used drug databases
54.	Brexidol	50	Unable to find product characteristics in commonly used drug databases
55.	Bromuphed	50	Unable to find product characteristics in commonly used drug databases
56.	(b) (4)	50	Secondary name for Zecuity under NDA 202278. The name Zecuity was approved under this NDA on January 17, 2013
57.	ferric cation	50	Unable to find product characteristics in commonly used drug databases
58.	PYRITidiUM	50	Unable to find product characteristics in commonly used drug databases
59.	Tilidine	50	Unable to find product characteristics in commonly used drug databases

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

No.	Name	POCA Score (%)
1.	DARICON	68
2.	Dristan	62
3.	Duradrin	62
4.	Radium	62
5.	RIMIFON	62
6.	CERADON	60
7.	Didone	60
8.	DROLBAN	60
9.	KERYDIN	60
10.	Triadine	60
11.	Triscon	60
12.	Muricin	59
13.	Otrivin	59
14.	Tritan	59
15.	CRINONE	58
16.	Dura Ron	58
17.	Imbrilon	58
18.	Privigen	58
19.	Puregon	58
20.	TREMIN	58
21.	Triacin	58
22.	Ubretid	58
23.	DARVON	57
24.	Modicon	57
25.	MODICON 21	57
26.	MODICON 28	57

No.	Name	POCA Score (%)
27.	VIRILON	57
28.	Aprodine	56
29.	dodicin	56
30.	Dryphen	56
31.	Duratan	56
32.	Ferrimin	56
33.	Ferrimin 150	56
34.	METRODIN	56
35.	(b) (4)	56
36.	PRELUDIN	56
37.	Pripsen	56
38.	Redoxon	56
39.	RIFADIN	56
40.	Trilone	56
41.	TRINALIN	56
42.	Triotann	56
43.	Viden	56
44.	D & C Red No. 27	55
45.	D&C RED NO. 21	55
46.	D&C RED NO. 28	55
47.	D&C red no. 30	55
48.	D&C Red No. 34	55
49.	D&C RED NO. 6	55
50.	D&C RED NO. 7	55
51.	D.C. Red No. 33	55
52.	D.C. Red No. 36	55
53.	DARVON-N	55
54.	DIDRONEL	55

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No.	Name	POCA Score (%)
55.	DURACLON	55
56.	PRINCIPEN	55
57.	PRINCIPEN '125'	55
58.	PRINCIPEN '250'	55
59.	PRINCIPEN '500'	55
60.	TRILAFON	55
61.	Aprindine	54
62.	Chorigon	54
63.	Corisin	54
64.	Dermabon	54
65.	DigiSan	54
66.	DIPRIVAN	54
67.	DRICORT	54
68.	Duvadilan	54
69.	Freezone	54
70.	Med-I-San	54
71.	PENBRITIN	54
72.	Predalone 50	54
73.	Prodip	54
74.	REMERON	54
75.	Rhodium	54
76.	RITALIN	54
77.	tiadilon	54
78.	Tretten	54
79.	TRILITRON	54
80.	Trimo San	54
81.	TROBICIN	54
82.	Uni Decon	54
83.	Uritin	54
84.	Verrugon	54

No.	Name	POCA Score (%)
85.	Claradin	53
86.	DEPACON	53
87.	desirudin	53
88.	DRALZINE	53
89.	DriTail	53
90.	Dromoran	53
91.	Duragen	53
92.	(b) (4)	53
93.	Peri-D.O.S.	53
94.	Prinize	53
95.	Proderm	53
96.	PROPINE	53
97.	(b) (4) ***	53
98.	tricaine	53
99.	TripTone	53
100.	Videne	53
101.	Vidone	53
102.	Aricin	52
103.	chrysin	52
104.	D-BIOTIN	52
105.	DECADRON	52
106.	Deprizine	52
107.	Desitin	52
108.	Dibrom	52
109.	Dimine	52
110.	diperodon	52
111.	Disadine	52
112.	DRISDOL	52

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No.	Name	POCA Score (%)
113.	Duraphen	52
114.	Duraphen 1000	52
115.	DURAQUIN	52
116.	Duraxin	52
117.	Eraldin	52
118.	FRAGMIN	52
119.	Froben	52
120.	IBRIN	52
121.	KADIAN	52
122.	Muripsin	52
123.	Oprisine	52
124.	ORFADIN	52
125.	Orgadin	52
126.	Otrivine	52
127.	Perisine	52
128.	PHRENILIN	52
129.	Predfoam	52
130.	Predicort-50	52
131.	PRELONE	52
132.	PRIMIDONE	52
133.	Pro Dine 5000C	52
134.	PROBALAN	52
135.	Progan	52
136.	Quibron	52
137.	Renown	52
138.	SARENIN	52
139.	Sebizon	52
140.	Triactin	52
141.	Tru-micin	52
142.	TRYPSIN	52

No.	Name	POCA Score (%)
143.	Uretron	52
144.	Urimin	52
145.	Viz-on	52
146.	CRIXIVAN	51
147.	Crixivan	51
148.	Dermatin	51
149.	Droncit	51
150.	Etrafon	51
151.	ETRAFON 2-10	51
152.	ETRAFON 2-25	51
153.	(b) (4)	51
154.	Formadon	51
155.	Hirudin	51
156.	Moditen	51
157.	Palladium	51
158.	Prepadine	51
159.	Prodrox	51
160.	Propan	51
161.	Ri-Tussin	51
162.	TRIAPRIN	51
163.	TriOxin	51
164.	Zaditen	51
165.	(b) (4)	50
166.	CERESIN	50
167.	CREON	50
168.	(b) (4)	50
169.	(b) (4)	50

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No.	Name	POCA Score (%)
170.	(b) (4)	50
171.	(b) (4)	50
172.	(b) (4)	50
173.	(b) (4)	50
174.	DARBID	50
175.	Dermoneen	50
176.	Dibromm	50
177.	Di-Bromm	50
178.	DITROPAN	50
179.	Doxidan	50
180.	Drize-R	50
181.	Duadacin	50
182.	Dura-Dumone	50
183.	Duromine	50
184.	Epidrin	50
185.	Ferocon	50
186.	(b) (4)	50
187.	Ibifon 600	50
188.	Ibren	50
189.	LOTRIMIN	50
190.	METRETON	50
191.	Micon 7	50
192.	Micon-80	50
193.	MINIRIN	50
194.	Mylicon	50
195.	narasin	50
196.	NAROPIN	50
197.	Nerisone	50
198.	Oradexon	50
199.	Paraffin	50

No.	Name	POCA Score (%)
200.	PAREDRINE	50
201.	Paroven	50
202.	PERCODAN	50
203.	Podocon	50
204.	Podocon-25	50
205.	Prazosin	50
206.	Predcor	50
207.	Predsol	50
208.	PREMARIN	50
209.	Premarin	50
210.	Pressimmune	50
211.	prifinium	50
212.	Prioderm	50
213.	PROCAN	50
214.	PROFEN	50
215.	Proline	50
216.	Propane	50
217.	Protid	50
218.	ProZinc	50
219.	Pyril Tann-12	50
220.	Radent	50
221.	Rapdone	50
222.	RAPLON	50
223.	Rhindecon	50
224.	Rimafen	50
225.	Riopan	50
226.	Rumagon	50
227.	Rutin	50
228.	Terocin	50
229.	Tobralcon	50

No.	Name	POCA Score (%)
230.	Treagan	50
231.	TRETINOIN	50
232.	Tricodene	50
233.	Tri-Dec	50
234.	(b) (4)	50
235.	Tri-Med	50
236.	Tri-Nefrin	50
237.	TROVAN	50
238.	VICODIN	50
239.	Vidopen	50
240.	(b) (4)	50

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/s/

JAMES H SCHLICK
12/19/2014

BRENDA V BORDERS-HEMPHILL
12/19/2014

Department of Health and Human Services
Public Health Service
Food and Drug Administration Center for
Drug Evaluation and Research Office of
Surveillance and Epidemiology
Office of Medication Error Prevention and Risk Management

Proprietary Name Dispute Resolution Memo

Date:	July 25, 2014
From:	Kellie Taylor, PharmD, MPH, Deputy Director Office of Medication Error Prevention and Risk Management
Drug Name(s):	Bridion (Sugammadex Sodium) Injection
Strength(s):	200 mg/2 mL and 500 mg/5 mL Application
Type/Number:	IND 068029/ NDA 022225
Applicant/Sponsor:	Organon
OSE RCM #:	2014-1220

*** This document contains proprietary and confidential information that should not be released to the public.***

1 INTRODUCTION

This memo summarizes the Office of Medication Error Prevention and Risk Management's (OMEPRM) position and response to a June 27, 2014 formal dispute resolution request from Merck Sharp & Dohme (MSD) Corporation on behalf of Organon. The dispute is in regard to the acceptability of the proposed proprietary name, Bridion, for IND 068029/ NDA 022225.

2 REGULATORY HISTORY

DMEPA previously reviewed the proposed name [redacted] (b) (4) submitted to NDA 022225 on February 19, 2008, and found the name acceptable (refer to OSE review #2008-384 finalized on May 23, 2008). NDA 022225 received a Not Approvable letter on July 31, 2008. In Europe, the product was approved by the EMEA in 2008 with the proprietary name, Bridion.

On December 20, 2011, approximately three years following Bridion's approval in the European market, the Applicant withdrew the proposed name [redacted] (b) (4) from NDA 022225 and submitted the proposed name Bridion to IND 068029 on December 15, 2011.

DMEPA completed an evaluation of the proprietary name Bridion in IND 68029 Proprietary Name Review completed June 7, 2012. The name was determined to be unacceptable for two reasons: 1) orthographic similarity to and overlapping product characteristics with Bactrim (Sulfamethoxazole and Trimethoprim) and 2) similarity in spelling and pronunciation to the name Tridione (Trimethadione) 21 CFR 201.10(c)(5).

Six months later, the Applicant submitted a proprietary name request proposing the name [redacted] (b) (4) (submitted to NDA 022225 on December 21, 2012) [redacted] (b) (4) A few weeks following DMEPA's receipt of the [redacted] (b) (4) submission on January 9, 2013, DMEPA communicated to the Applicant that the inclusion of [redacted] (b) (4) was unacceptable. A few days later on January 14, 2013, the Applicant withdrew the proposed proprietary name [redacted] (b) (4) from NDA 022225 and submitted a Request to Reconsider the proposed proprietary name, Bridion.

On April 15, 2013, DMEPA issued a letter communicating that the request for reconsideration did not address the safety concerns described in the letter dated June 7, 2012 finding Bridion unacceptable. The reasons are described fully in NDA 022225 Proprietary Name Review Request for Reconsideration completed April 15, 2013 and center around outstanding concerns for confusion due to the similarity of the Bridion name with the following names: 1) Bactrim (Sulfamethoxazole and Trimethoprim) and 2) Tridione (Trimethadione).

3 METHODS AND MATERIALS

I reviewed the following materials:

- Merck Sharp & Dohme Corporation's (Merck) Request for Formal Dispute Resolution submitted on June 27, 2014. This request included a cover letter, and supporting information (Appendices 1 through 4).

- Name similarity scores for Bactrim and Bridion, and Tridione and Bridion

(FDA's Phonetic and Orthographic Computer Analysis system, accessed July 8, 2014).

- Product information for Bactrim and Tridione, available at drugs@fda (accessed July 8, 2014).

- NDA 005856 Annual reports for Tridione (trimethadione) (2010, 2011, 2012, 2013) describing the products distribution under AbbVie's Compassionate Use Program (initiated in 1998.

- Merck Sharp & Dohme Corporation's (Merck) Request for Reconsideration submitted on January 14, 2013. This submission included a cover letter, a study from (b) (4), and verbatim responses to the study questionnaire administered to participants.
- The safety concerns described in our previous review of the proposed proprietary name, Bridion (IND 068029 Proprietary Name Review completed June 7, 2012).
- The proprietary name reconsideration review of Bridion drafted by Drs. V. Borders-Hemphill and J. Wilkins Parker. (NDA 022225 Proprietary Name Review Request for Reconsideration completed April 14, 2013)

4 DISCUSSION

DMEPA previously found the proposed proprietary name, Bridion, unacceptable based on the potential for error resulting from:

1) orthographic similarity to and overlapping product characteristics with Bactrim (sulfamethoxazole and trimethoprim)

2) similarity in spelling and pronunciation to the Tridione (trimethadione)

The review team provided a detailed rationale of their concerns and the shortcomings of MSD's response within the written review. Fundamentally, DMEPA disagreed that MSD's Failure Modes and Effect Analysis (FMEA) adequately demonstrated that there is no potential for the Bridion name to be confused with Bactrim. DMEPA concluded that there is a risk of confusion because 1) the name Bactrim may be used in prescribing IV formulations of sulfamethazole/trimethoprim, 2) that handwritten orders remain an active mode of communication in the current medication use process, and 3) sulfamethazole/trimethoprim and the sugammadex may be used in the same setting of care. In my review of the materials cited in Section 3, I find no reason to disagree with DMEPA's thinking on these three points.

However, as part of my evaluation of this issue, I began by evaluating whether the names Bactrim and Bridion have visual similarity to one another in writing. Objectively, both names have 7 letters, begin with the letter 'b', bear a single upstroke in the 4th position, and have a similar shape which, taken together, creates some similarity But, the names have different letter strings in the infix and suffixes that on inspection appear to differentiate the names. Furthermore, for this name pair, our Phonetic and Orthographic Computer Analysis (POCA) system assigns a COMBINED match percentage of 40% (Phonetic 41%, Orthographic 38%) which suggests a relatively low level of similarity. Furthermore, review of our prescription studies (dated January 10, 2012 captured in Appendix C of IND 68029 Proprietary Name Review completed June

7, 2012) did not identify any responses that suggest that the proposed name or components of within the proposed name are likely to be misinterpreted, as Bactrim. Lastly, MSD contracted a third party consultant to conduct an independent evaluation of the similarity of the names Bactrim and Bridion (see [redacted] (b) (4) submitted to NDA 022225 on December 21, 2012). The independent review concluded that the names had sufficient orthographic differences to distinguish the names when scripted. Therefore, based on the collective data available related to the similarity of this pair, I conclude that the proposed name Bridion is not sufficiently similar to pose a risk for confusion and error with Bactrim.

With respect to Bridion's similarity to Tridione , DMEPA and MSD agree that these names are similar. Tridione is a product that is distributed by AbbVie under a Compassionate Use program, and the most recent annual report (2013) indicates that the product was distributed to a less than fifty patients and that AbbVie has no plans to enroll new patients. Although DMEPA considered the very limited use of the product, the concerns articulated in their review relates to a future consideration that the product may be more broadly distributed thus presenting a risk for confusion with Bridion. MSD contends that the limited use, coupled with differences in product characteristics should sufficiently satisfy our concerns between this similar name pair.

With regard to Tridione and Bridion, the names are highly similar, particularly with regard to the sound of the names (POCA COMIBINED match >70%). However, in the current medication use system, this similarity does not pose a risk for error because the settings of use (operative care versus Compassionate Use Program) do not overlap. In short: the two products cannot be confused with one another because we have no expectation that they would be ordered, dispensed, or administered in the same setting currently. Therefore, we have no expectation that the similarity of the Bridion name to Tridione could lead to errors.

Also, although future state consideration on Tridione distribution patterns are not material to the decision at hand, my own opinion is that there are some fundamental differences in the name spelling (particularly the prefix) and product characteristics (dosage, form, route, and setting of use) that would sufficiently reduce the potential for such confusion and error.

5 CONCLUSION AND RECOMMENDATION

I have completed our review of the information related to the proposed proprietary name, Bridion, and have concluded that the appeal should be granted. The collective data available related to the similarity of the name pairs, along with the characteristics and use of the drug products, indicates that the proposed name, Bridion, does not appear to pose a risk for medication errors with Bactrim or Tridione at this time. As a reminder, I would also advise that we communicate to Organon that they should submit a request for proprietary name review at the time of their resubmission addressing their Complete Response to their NDA in keeping with our current procedures for evaluation of proposed proprietary names.

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/s/

KELLIE A TAYLOR
07/25/2014

Department of Health and Human Services
Public Health Service
Food and Drug Administration
Center for Drug Evaluation and Research
Office of Surveillance and Epidemiology
Office of Medication Error Prevention and Risk Management

Proprietary Name Review

Date:	July 16, 2013
Reviewer:	Vicky Borders-Hemphill, Pharm.D. Division of Medication Error Prevention and Analysis
Team Leader:	Jamie Wilkins Parker, Pharm.D. Division of Medication Error prevention and Analysis
Division Director:	Carol Holquist, RPh. Division of Medication Error Prevention and Analysis
Drug Name(s):	(b) (4) (Sugammadex Sodium) Injection
Strength(s):	200 mg/2 mL and 500 mg/5 mL
Application Type/Number:	NDA 22225
Applicant/Sponsor:	Merck Sharp & Dohme Corp.
OSE RCM #:	2013-933

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/s/

JAMIE C WILKINS PARKER on behalf of BRENDA V BORDERS-HEMPHILL
07/16/2013

JAMIE C WILKINS PARKER
07/16/2013

CAROL A HOLQUIST
07/16/2013

Department of Health and Human Services
Public Health Service
Food and Drug Administration
Center for Drug Evaluation and Research
Office of Surveillance and Epidemiology
Office of Medication Error Prevention and Risk Management

Proprietary Name Reconsideration Integrated Cover Memo

Date:	April 15, 2013
From:	Kellie Taylor, PharmD, MPH, Deputy Director
To:	Carol Holquist, RPh, Director Division of Medication Error Prevention and Analysis
Drug Name(s):	Bridion (Sugammadex Sodium) Injection
Strength(s):	200 mg/2 mL and 500 mg/5 mL
Application Type/Number:	NDA 22225
Applicant/Sponsor:	Merck Sharp & Dohme Corporation
OSE RCM #:	2012-2988

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1 INTRODUCTION

This memo summarizes DMEPA's position and response to a January 14, 2013 request from Merck Sharp & Dohme (MSD) Corporation to reconsider the proposed proprietary name, Bridion, for NDA 022225.

2 REGULATORY HISTORY

DMEPA previously reviewed the proposed name, (b) (4), submitted to NDA 022225 on February 19, 2008, and found the name acceptable in OSE review #2008-384 on May 23, 2008. NDA 022225 received a Not Approvable letter on July 31, 2008. In Europe, the product was approved by the EMEA in 2008 with the proprietary name, Bridion.

Three years following Bridion's approval in the European market, the Applicant withdrew the proposed name (b) (4) from NDA 022225, on December 20, 2011 and submitted the proposed name Bridion to IND 68029 on December 15, 2011.

DMEPA completed an evaluation of the proprietary name Bridion in OSE review #2011-4588 dated June 7, 2012. The name was determined to be unacceptable for two reasons: 1) orthographic similarity to and overlapping product characteristics with Bactrim (Sulfamethoxazole and Trimethoprim) and 2) similarity in spelling and pronunciation to the name Tridione (Trimethadione) 21 CFR 201.10(c)(5).

Six months later, the Applicant submitted a proprietary name request proposing the name (b) (4) (submitted to NDA 022225 on December 21, 2012) (b) (4) A few weeks following DMEPA's receipt of the (b) (4) submission on January 9, 2013, DMEPA communicated to the Applicant that the inclusion of (b) (4) (b) (4) was unacceptable. A few days later on January 14, 2013, the Applicant withdrew the proposed proprietary name (b) (4) from NDA 022225 and submitted a Request to Reconsider the proposed proprietary name, Bridion.

3 METHODS AND MATERIALS

I reviewed the following materials:

- Merck Sharp & Dohme Corporation's (Merck) Request for Reconsideration submitted on January 14, 2013. This submission included a cover letter, a study from (b) (4) and verbatim responses to the study questionnaire administered to participants.
- The safety concerns described in our previous review of the proposed proprietary name, Bridion (OSE Review 2011-4588) dated June 7, 2012.
- The proprietary name reconsideration review of Bridion drafted by Drs. V. Borders-Hemphill and J. Wilkins Parker.

4 DISCUSSION

The team that reviewed the proprietary name reconsideration submission is not convinced that Merck Sharp & Dohme (MSD) Corporation addressed the concerns raised in OSE Review 2011-4588 (dated June 7, 2012) related to:

1) orthographic similarity to and overlapping product characteristics with Bactrim (Sulfamethoxazole and Trimethoprim)

2) similarity in spelling and pronunciation to the Tridione (Trimethadione) 21 CFR 201.10(c)(5).

The review team provides a detailed rationale of their concerns and the shortcomings of MSD's response within the written review. Fundamentally, the reviewers disagree that MSD's Failure Modes and Effect Analysis (FMEA) adequately demonstrates that there is no potential for the Bridion name to be confused with Bactrim, and thus the review team concludes that there is reason to expect wrong drug errors to occur if the Bridion name is to be approved. A number of weaknesses in MSD's FMEA were identified by the review team.

With respect to the Bactrim/Bridion FMEA the most notable shortcomings of the FMEA include:

a) the failure of the FMEA to consider that the Bactrim name may be used in prescribing and ordering sulfamethazole/trimethoprim IV formulations despite the fact that the Bactrim brand is no longer actively marketed

b) a mischaracterization of the expected ordering process for Bridion pertaining to a lack of hand-written orders (due to a misrepresentation of the verbal ordering process and an over-reliance on CPOE implementation as a means of mitigating the risk of confusion between Bactrim and Bridion in hand-written orders)

c) the FMEA failed to analyze the potential for Bactrim and Bridion to be used within the same settings of care (such as the operating room, emergency department, and intensive care unit) in spite of responses from the survey respondents indicating this would be expected use (described in detail on pg 6 of the review).

The review team documents these shortcomings within their review and refutes MSD's position using qualitative information garnered from MSD"s own survey responses, as well as scientific literature and expert policy recommendations. I find the review team's analysis is well-supported and provides sufficient reason to maintain our position regarding the identified risk of errors with Bridion and Bactrim.

With respect to the Tridione/Bridion FMEA, the most notable shortcomings of the FMEA include:

a) MSD fails to establish that these names are dissimilar in sound and spelling, as evidenced by their own survey responses citing similarity of the names (p 3)

b) MSD relies on historical sales data (or rather lack thereof) as a predictor of whether Tridione may be reintroduced to the market, when in fact the Tridione NDA remains active

c) MSD overestimates the role of different dosage forms/route of administration (solution/IV versus tablet/po) in preventing errors between two similarly named products, when in fact post-marketing reports of errors with other drug products refutes this position.

I find the review team's analysis is well-supported and provides sufficient reason to maintain our position regarding the identified risk of errors with Bridion and Tridione.

5 CONCLUSION AND RECOMMENDATION

I conclude the review team's analysis is well-supported and provides sufficient reason to maintain our position that the Bridion name is unacceptable for marketing. The review team has described a potential risk for error with the name Bridion due to similarity with Tridione and Bactrim, and their rationale is soundly supported by their Failure Modes and Effects Analysis (FMEA), which is well-informed by root-cause analysis of other name confusion errors, the scientific literature, MSD's own survey responses, and a thorough understanding of the expected clinical setting of use. The shortcomings in MSD's FMEA undermines the robustness of their findings, and fails to provide convincing reason for me to recommend that we find this name acceptable. Thus, I agree with review team, and recommend that we find the proposed name Bridion, unacceptable.

I acknowledge that the anticipated action date will arrive for NDA 022225 without an acceptable proprietary name in place. This does not preclude approval of the NDA, or subsequent marketing of the drug product if approved. Although this circumstance is regrettable, I would like to make it clear in the administrative record that MSD"s first proposed name in 2008 (b) (4) was found to be acceptable. MSD waited approximately 3 years before withdrawing (b) (4) from consideration and replacing the proposed name with Bridion. This delay occurred despite the fact that then Bridion product was approved by EMA in 2008, and presumably MSD could have pursued evaluation of Bridion under their IND with FDA if there interest was in securing a global trade mark at that time. Although our safety finding Bridion unacceptable would have in all probability been the same, in my view three years would have provided ample time to negotiate and secure a mutually acceptable proprietary name for this drug product.

I recommend that the following comments in Section 6 of this Memorandum be conveyed to MSD. The comments originate from this Memorandum and the supporting Request for Reconsideration Review.

6 COMMENTS TO THE APPLICANT

We have completed our review of the information submitted in support of the proposed proprietary name, Bridion, and have concluded that your response has not addressed the safety concerns described in the letter dated June 7, 2012. Therefore, we continue to find the use of the proposed proprietary name, Bridion, unacceptable for the reasons listed.

Bactrim concern

The Bactrim/Bridion Failure Modes and Effects Analysis (FMEA) included in your submission has several shortcomings that undermine your finding that Bridion would not lead to confusion with Bactrim if your proposed name were to be approved. The shortcomings identified in our evaluation of the FMEA include:

a) You did not consider that the Bactrim name continues to be used in prescribing and ordering sulfamethazole/trimethoprim IV formulations despite the fact that the Bactrim brand is no longer actively marketed. Sales data shows that an IV formulation of sulfamethoxazole and trimethoprim is presently sold by Teva Pharmaceuticals but has shown a steady, rapid decline in units prescribed since 2007 (source data: IMS Health). Literature indicates that the use of proprietary names of discontinued branded products continues long after market discontinuation, provided that generic formulations are available.[1] Hence, prescribers continue to order the intravenous formulation of sulfamethoxazole and trimethoprim as "Bactrim" although the brand is no longer marketed thus creating a risk for confusion between sulfamethoxazole/trimethoprim products and Bridion if it were to be approved. This is further supported by your survey responses where at least three pharmacists commented that "[Bactrim is] usually ordered by brand name and then filling it with generic", "[Prescribers] tend to use the brand name [for IV Bactrim]", and "Filling with generic but physicians are writing for Bactrim.

b) You mischaracterize the expected ordering process for Bridion pertaining to a lack of hand-written orders for neuromuscular reversal agents. Specifically, you misrepresent the verbal ordering process and over-rely on CPOE implementation as a means of mitigating the risk of confusion between Bactrim and Bridion in hand-written orders.

In your submission, you state that most hospitals and surgical centers have instituted electronic ordering system alleviating the need for handwritten orders. Published literature indicates hat many, but not all hospitals have Computerized Physician Order Entry (CPOE).[2] Furthermore, participants in your study also affirm that institutions continue to use written medication orders, as well as have written order protocols for CPOE downtimes or malfunction of CPOE systems."

With respect to verbal ordering of medicines, in the case of urgent or emergency use, it is standard hospital policy for verbal orders to be transcribed onto the patient's medical record post administration. According to Joint Commission Standards and as recommended by the National Coordinating Council for Medication Error Reporting and Prevention (NCCMERP), all verbal orders should be reduced immediately to writing and signed by the individual receiving the order and be documented in the patient's medical record, reviewed, and

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[1] Tu C, Taylor K, and Chai G. Use of proprietary names by prescribers for discontinued brand drug products with existing generic equivalents. *Drug Information Journal. 2012;46(6):677-682.*

[2] Jha A., DesRoches C., Campbell E., Donelan K.,Rao S., Ferris T., Shields A., Rosenbaum S., and D. Blumenthal, Use of Electronic Health Records in U.S. Hospitals**.** N Engl J Med 2009; 360:1628-1638, April 16, 2009

countersigned by the prescriber as soon as possible within a timeframe designated by the organization, law and regulation.[3,4]

c) You failed to analyze the potential for Bactrim and Bridion to be used within the same settings of care (such as the operating room, emergency department, and intensive care unit). Responses from your survey confirm that these settings should be included and expected for the use of your product. Additionally, medications may be ordered pre-operatively as substantiated by your survey responses, and thus a neuromuscular blockade reversal agent and an antibiotic may appear on an order form together.

Tridione concern

The Tridione/Bridion FMEA included in your submission also has several shortcomings that undermine your finding that Bridion would not lead to confusion with Tridione if your proposed name were to be approved. The shortcomings identified in our evaluation of the FMEA include:

a) You did not establish that these names are dissimilar in sound and spelling. In fact, the survey responses you collected and submitted describe the similarity of the names.

b) We are not convinced that historical sales data (or rather lack thereof) is a predictor of whether Tridione may be reintroduced to the market. The Tridione NDA remains active and the product may be reintroduced at any time.

c) Your FMEA overestimates the role of different dosage forms/route of administration (solution/IV versus tablet/po) in preventing errors between two similarly named products. Post-marketing reports of errors with other drug products refutes this assumption. There have been post-marketing cases of products with differing routes of administration being confused. One example of such confusion occurred with Cerebyx (an IV formulation) and Celebrex (an oral capsule). Another example of such confusion occurred with Advair (an oral inhalation product) and Advicor (a solid oral tablet). These post-marketing examples affirms that confusion may still occur between these products.

We note that you have not proposed an alternate proprietary name for review. If you intend to have a proprietary name for this product, we recommend that you submit a new request for a proposed proprietary name review. (See the Guidance for Industry, *Complete Submission for the Evaluation of Proprietary Names,* http://www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/Guidances/UCM075068.pdf and "PDUFA Reauthorization Performance Goals and Procedures Fiscal Years 2008 through 2012".)

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[3] National Coordinating Council for Medication Error Reporting and Prevention (NCCMERP). Recommendations to Reduce Medication Errors Associated with Verbal Medication Orders and Prescriptions. http://www nccmerp.org/council/council2001-02-20 html. Accessed February 12, 2013.

[4] Joint Commission. CAMH Update 2, September 2012. Record of Care, Treatment, and Services. RC.01.02.01 Element of Performance #4, Standard RC.02.03.07, RC.02.01.03 Element of Performance #8

Department of Health and Human Services
Public Health Service
Food and Drug Administration
Center for Drug Evaluation and Research
Office of Surveillance and Epidemiology
Office of Medication Error Prevention and Risk Management

Proprietary Name Reconsideration Review

Date:	April 15, 2013
Reviewer:	Vicky Borders-Hemphill, Pharm.D. Division of Medication Error Prevention and Analysis
Team Leader:	Jamie Wilkins Parker, Pharm.D. Division of Medication Error prevention and Analysis
Drug Name(s):	Bridion (Sugammadex Sodium) Injection
Strength(s):	200 mg/2 mL and 500 mg/5 mL
Application Type/Number:	NDA 22225
Applicant/Sponsor:	Merck Sharp & Dohme Corporation
OSE RCM #:	2012-2988

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CONTENTS

1 INTRODUCTION

This review responds to a January 14, 2013 request from Merck Sharp & Dohme Corporation to reconsider the proposed proprietary name, Bridion, for NDA 022225.

2 REGULATORY HISTORY

DMEPA previously reviewed the proposed name, (b) (4), submitted to NDA 022225 on February 19, 2008, and found the name acceptable in OSE review #2008-384 on May 23, 2008. NDA 022225 received a Not Approvable letter on July 31, 2008. In Europe, the product was approved by the EMEA in 2008 with the proprietary name, Bridion. Then years later, the Applicant subsequently withdrew the proposed name (b) (4) from NDA 022225, on December 20, 2011 and submitted the proposed name Bridion to IND 68029 on December 15, 2011.

DMEPA evaluated the proprietary name Bridion in OSE review #2011-4588 dated June 7, 2012, and found it unacceptable due to orthographic similarity to and overlapping product characteristics with Bactrim (Sulfamethoxazole and Trimethoprim) and similarity in spelling and pronunciation to the Tridione (Trimethadione) 21 CFR 201.10(c)(5).

Six months later, the Applicant responded with a submission proposing the name (b) (4) submitted to NDA 022225 on December 21, 2012. DMEPA evaluated the name and found it to be unacceptable (b) (4) This was communicated to the Applicant in a matter of a few weeks during a teleconference on January 9, 2013. The Applicant withdrew the proposed proprietary name (b) (4) from NDA 022225 on January 14, 2013. This review responds to a January 14, 2013 request from Merck Sharp & Dohme Corporation to reconsider the proposed proprietary name, Bridion, for NDA 022225.

3 METHODS AND MATERIALS

DMEPA used Failure Mode and Effects Analysis (FMEA) in our review of Merck Sharp & Dohme Corporation's (Merck) request for reconsideration. We also considered the safety concerns described in our previous review of the proposed proprietary name, Bridion (OSE Review 2011-4588), as well as Merck's verbatim responses to the questionnaire administered to participants in their data-gathering efforts for their reconsideration request.

Merck's request for reconsideration was submitted via a study from (b) (4) in a numbered format. Therefore, to ensure each issue is individually addressed, DMEPA will respond numerically to each issue.

4 CONCLUSIONS

We have completed our review of the information submitted in support of the proposed proprietary name Bridion, and have concluded that the data is insufficient to support the use of the proposed name for this product. Therefore, we continue to find the use of the proposed proprietary name, Bridion, unacceptable.

If you have further questions or need clarifications, please contact Teena Thomas, OSE project manager, at 301-796-0549.

5 RECOMMENDED COMMENTS TO THE APPLICANT

We have completed our review of the information submitted in support of the proposed proprietary name, Bridion, and have concluded that your response has not alleviated the safety concerns described in the letter dated June 7, 2012. Therefore, we continue to find the use of the proposed proprietary name, Bridion, unacceptable for the reasons listed.

We present the following concerns regarding your findings to evaluate the potential for confusion between the proposed proprietary name, Bridion, and proprietary name, Tridione.

We maintain our objection to the proposed proprietary name, Bridion, based on 21 CFR 201.10(c)(5), which states "The labeling of a drug may be misleading by reason of designation of a drug or ingredient by a proprietary name that, because of similarity in spelling or pronunciation, may be confused with the proprietary name or the established name of a different drug or ingredient."

The proposed proprietary name, Bridion is similar in spelling and pronunciation to the proprietary name Tridione (Trimethadione). Bridion and Tridione share six letters in the same position, differing only by two letters, the initial letters "T" and "B" and the silent letter "e" on the end of Tridione. This similar spelling gives the names a similar appearance when scripted and makes the names indistinguishable in speech. Both names consist of three syllables. The first syllable ends with the sound "reh", both have the same middle syllable, "dee", and final syllable sound of "ohn".

When evaluating the questionnaire given to or used by respondents, it was noted that the pronunciation of the proposed proprietary name, Bridion, and proprietary name, Tridione, were provided to respondents in the instructions. Therefore, pronunciation bias may have been introduced and the respondent's self-interpretation (and therefore best reflection of real-world practice) of the written name may not have been taken into consideration during the FMEA evaluation of these products. The pronunciations for Bridion and Tridione were not consistently presented to respondents by those administering the questionnaire. The pronunciation for Bridion was provided to one respondent (anesthesiologist) as BRY-dee-on but for all other respondents as brih-dee-in or BRIH-dee-IN. The pronunciation for Tridione was provided to one respondent (same aforementioned anesthesiologist) as TREE-dee-own but for all other respondents as try-DYE-own or try-dye-own or Try-Die-Own. Pronunciation bias was also likely introduced to several respondents suggesting that brih-dee-in or BRIH-dee-IN will not be phonetically similar to try-DYE-own or try-dye-own or Try-Die-Own. This did not permit the respondent to self-interpret the pronunciation as in a real world scenario or permit them to provide analysis based upon a consistent pronunciation of all products. Furthermore, several respondents to your questionnaire provided comment on the similarity between the two names, Bridion and Tridione, with statements such as:

- "Almost identical in combo of letters", by a nurse respondent

- "Half the word is similar- it's kind of a little close", by an anesthesiologist respondent
- "Could look similar especially if bad HW" and "Potential to be mispronounced", by a Nurse Practitioner-Anesthesiology respondent
- "Names are similar", by an anesthesiologist respondent
- "The spelling is very similar. A sloppy T or sloppy B- some people are sloppy in their uptick, it's possible that you might confuse" by an anesthesiologist respondent

These comments further demonstrate the perspective that the names are similar to one another in spelling.

On page 7, (b) (4) confirmed that there are no recorded sales for Tridione for the past five years and that the product is not currently marketed (source: IMS Health) and you state that given the advancements in the treatment options for epilepsy this is unlikely to change. However, However,. this product has an active New Drug Application (NDA) on file with the Agency and may return to active marketing at any time under the name Tridione.

On page 17, you state that Tridione is uniquely available as an oral tablet while BRIDION is an IV bolus injection, making the products nearly impossible to confuse. However, we have found that products which have orthographic and phonetic similarities but differing routes of administration may still be confused. In particular, when each product has only one route of administration, the route of administration may be omitted from a prescription (or order), and therefore does not provide distinction for the product during order interpretation. There have been post-marketing cases of products with differing routes of administration being confused such as Cerebyx and Celebrex, affirming that confusion may still occur between these products.

We present the following concerns regarding your findings to evaluate the potential for confusion between the proposed proprietary name, Bridion, and proprietary name, Bactrim.

On page 9 of your Research Finding to Support the Use of Bridion, you state that based on the results of the FMEA, it is unlikely that the overlapping route of administration and weight based dosing will lead to confusion between BRIDION and Bactrim. However, FDA's Proprietary Name Risk Safety Assessment includes evaluating verbal and handwritten samples along with overlapping product characteristics placed in the context of simulated use. We found that Bridion and Bactrim have several orthographic similarities including same shape with similarities in length and upstrokes of the letters comprising the names when scripted. Both names have the same beginning letter (B) and similarly positioned upstrokes where the letter "d" may look orthographically similar to the letter string "ct" when scripted. Also, both names contain letter strings at the end of each word, where the letter string "ion" may look orthographically similar to the letter string "rim" when scripted. Several respondents' commented when asked about orthographic similarities between the names Bridion and Bactrim as follows:

- "Same length, A and R can look alike, N and M can look alike, R and D can look alike – very similar and both start with same letter
- "The names are fairly similar in layout of letters"
- "because both start with the letter B"
- "same amount of letters, both start with B, both have an I towards the end. If someone just scribbled..on the written word alone, I could see it being confused. Bridion wouldn't be handwritten unless it was going to be given in the recovery room"

On page 7, you conclude that although Bactrim is not presently available in the market as a liquid for IV infusion, an IV formulation of sulfamethoxazole and trimethoprim is presently sold by Teva Pharmaceuticals but has shown a steady, rapid decline in units prescribed since 2007 (source data: IMS Health). However, prescribers may order the intravenous formulation of sulfamethoxazole and trimethoprim as "Bactrim" although the brand is no longer marketed, regardless of quantity or reduction of market sales. This is supported by at least three pharmacists who participated your telephone survey conducted by (b) (4) as noted here:

- "[Bactrim is] usually ordered by brand name and then filling it with generic"
- "[Prescribers] tend to use the brand name [for IV Bactrim]"
- "Filling with generic but physicians are writing for Bactrim"

We are concerned that the product information provided to respondents (Appendix A in the January 14, 2013 submission) did not include information regarding the availability of the generic injectable formulation of sulfamethoxazole/trimethoprim. The provided product information states that Bactrim intravenous formulation is discontinued without the caveat that the generic formulation is still available for acquisition. This may have potentially misled respondents to believe that no injectable sulfamethoxazole/trimethoprim exists. This misunderstanding appears to have impacted ultimate respondent HFMEA scores as evidenced by questionnaire responses such as:

- "only if we are talking about the liquid form [of Bactrim]. Overlapping vial sizes (5ml). If they are both clear and both the same size then 3 otherwise for tablet it's 1"
- "[Score of]1 if different packaging 2 if similar packaging, packaging plays an impact"
- "If Bactrim is avail in IV and similar packaging and next to each other it is possible it could be interchanged"
- "One is only oral".

These responses demonstrate that some respondents did not envision an intravenous formulation as being available, or would have scored differently if it was confirmed that it is, and as such, these answers were analyzed with the lower score. Also, on page 9, you state that Bactrim is only available as an oral tablet while BRIDION is an IV bolus injection, making the products nearly impossible to confuse. We determined that

although the brand is no longer marketed as an intravenous dosage form and regardless of quantity or reduction in market sales of the generic formulation of intravenous sulfamethoxazole/trimethoprim, this product may continue to be ordered verbally and in writing as "Bactrim". Several survey respondents also affirm that the generic form of the medication, although available, continues to be ordered with the brand name as evidenced by responses such as "Filling with generic but physicians are writing for Bactrim".

On page 9, you state that most hospitals and surgical centers have instituted electronic ordering system alleviating the need for handwritten orders. We have found that many, but not all have Computerized Physician Order Entry (CPOE). According to Jha A. et al, during the year 2008, fewer than 2% of U.S. acute care general medical and surgical hospitals that were members of the American Hospital Association had a comprehensive electronic records system, and about 17% had implemented CPOE for medications across all clinical units.[5] Although, hospital adoption of CPOE for medication orders showed an increase of 167% between 2008 and 2012, continued progress in this area is needed.[6] Furthermore, participants in your study also affirm that institutions continue to use written medication orders, as well as have written order protocols for CPOE downtimes or malfunction of CPOE systems. The following response presents a scenario in which a handwritten order for a reversal agent may be presented to the pharmacy:

- "They could write a prescription, scan, and then fax it to pharmacy. If they need it immediately and are administering it themselves, they will call from the OR. Anesthesia will document on his medication administration record that the product was needed. If the nurse was going to pick up the medication, they would write up a script, scan it and send the nurse to pick it up at the pharmacy."
- This same pharmacist answered that she anticipated that "[Bridion] would be kept on the shelf [in the OR pharmacy satellite] and we would hand them the vial if they wanted".

Additionally, in the case of urgent or emergency use, it is standard hospital policy for verbal orders to be transcribed onto the patient's medical record post administration. According to Joint Commission Standards and as recommended by the National Coordinating Council for Medication Error Reporting and Prevention (NCCMERP), all verbal orders should be reduced immediately to writing and signed by the individual receiving the order and be documented in the patient's medical record, reviewed, and countersigned by the prescriber as soon as possible within a timeframe designated by the organization, law and regulation.[7,8] Lastly, medications may be ordered pre-operatively

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[5] Jha A., DesRoches C., Campbell E., Donelan K.,Rao S., Ferris T., Shields A., Rosenbaum S., and D. Blumenthal, Use of Electronic Health Records in U.S. Hospitals**.** N Engl J Med 2009; 360:1628-1638, April 16, 2009

[6] Charles D, King J, Furukawa MF, Patel V. "Hospital Adoption of Electronic Health Record Technology to Meet Meaningful Use Objectives: 2008-2012," ONC Data Brief, no. 10. Washington, DC: Office of the National Coordinator for Health Information Technology. March 2013.

[7] National Coordinating Council for Medication Error Reporting and Prevention (NCCMERP). Recommendations to Reduce Medication Errors Associated with Verbal Medication Orders and Prescriptions. http://www nccmerp.org/council/council2001-02-20 html. Accessed February 12, 2013.

(again substantiated in the survey responses) and thus a neuromuscular blockade reversal agent and an antibiotic may appear on an order form together.

On page 8, you state that based on the results of the FMEA, it is unlikely that BRIDION and Bactrim will be confused in handwriting, leading to medication errors because the products will not be stored together. You determined that BRIDION will be stored in automated medication dispensing machines (AMDM's) in the surgical operating room, locked cabinets in anesthesia workrooms and/or locked trays and kits prepared for the anesthesiologists and are not likely to be stored in the central pharmacy in the hospital or surgical center and that the predominant storage location for Bactrim is the central pharmacy of the hospital or surgical center and will not be available in the operating room or anesthesia workroom. However, we do not agree that the products will not be stored together throughout any portion of the medication use process. Neuromuscular blockade agents (and therefore their reversal agents) are not restricted for use in the OR, nor are intravenous antibiotics, such as Bactrim, restricted for use in non-OR settings. The storage and use of these products may overlap in multiple settings such as a central pharmacy storage unit, an OR satellite pharmacy or recovery room, an Emergency Room, or an ICU. Additionally, respondents in your questionnaire also affirm that antibiotics are frequently a part of a "case cart" for surgical cases, or admixed within a surgical workroom (as well as given in recovery rooms and ICU's). One pharmacist stated that "Bactrim is occasionally used for surgical patients, possibly given one dose in the OR and then from 2-6 hours post op". This further demonstrates that these products may be stored and/or used in the same locations at any point in the medication use process.

On page 11, you state that the results of the FMEA suggest that it is very unlikely that the clinical use of BRIDION and Bactrim will overlap, limiting the potential for misadministration of the two products due to the distinct timing of use. You supported this statement from comments provided by safety evaluators who reported that BRIDION should be administered once, at the end of the surgical procedure while the patient is still in the OR and that a neuromuscular reversal agent would never be administered before surgery. However, we considered the conditions of the clinical setting where either product is likely to be used. Although Bactrim is usually administered multiple times a day, it is feasible that both Bridion and Bactrim would be initiated at the end of, or as evidenced by survey responses, during a surgical case, in the recovery room, or in the ICU setting (questionnaire responses include "Overlap would be ICU, OR recovery room, or ER"). It is therefore not infeasible that a Bactrim order would be presented on the chart of or administered to a patient pre-operation or post-operation in recovery or during treatment in an intensive/critical care unit.

Taking into consideration all orthographic similarities, these names appear similar when scripted (see samples below).

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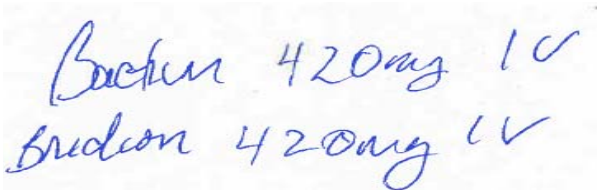
[8] Joint Commission. CAMH Update 2, September 2012. Record of Care, Treatment, and Services. RC.01.02.01 Element of Performance #4, Standard RC.02.03.07, RC.02.01.03 Element of Performance #8



Additionally, both Bridion and Bactrim are primarily used in the same settings of care (hospitals and clinics) and share several overlapping product characteristics. We note that on page 10 you state that overlapping dosage strengths is not a significant concern. However, most weight based orders must be written to specify the dose intended for the individual patient and are generally not allowed to be written as "mg/kg". Therefore, it is feasible that an order for either product would have an overlapping final calculated dose especially considering that both Bridion and Bactrim may be dosed using the 4 mg/kg and the 16 mg/kg dosing calculations along with the overlapping intravenous route of administration. These products may be ordered with an overlapping frequency of administration, as both Bridion and Bactrim may be appear on an order as a one time dose in operating room setting at the end of a surgical case. Although Bactrim is usually administered multiple times a day, it is feasible that both Bridion and Bactrim would be initiated at the end of a surgical case. There are several clinical conditions which require long term use of intravenous Bactrim (e.g. pneumocystis pneumonia for 21 days and toxoplasma encephalitis for 6 weeks) which may need to be resumed on schedule once the operation is completed. It is not unlikely that a Bactrim order would be presented on the chart of a patient in the operating room, pre-operation, or post-operation in recovery or upon return to intensive/critical care unit. These products will be stocked together on the shelf at room temperature, as they share similar dosage form (injection solution) and are both supplied as 5 mL single dose vials. Although Bridion is usually administered as a rapid bolus injection, instructions provided for Bridion state that it can be injected into the intravenous line of a running infusion with 5% dextrose which is a common intravenous solution used in the method of preparation for Bactrim.

Your FMEA results scored a low probability of harm if confusion occurred between these products, however, the risk is not negligible. A score of 2.9 equates very closely to a score of 3, which is "major patient outcome (potential for adverse event/lessening of bodily function". As previously discussed, if respondents were informed that an intravenous form of sulfamethoxazole/trimethoprim were available for acquisition, then this score may likely have been higher than currently calculated.

In summary, based on the information provided in support of the reconsideration of the proposed name Bridion, we do not agree that the proposed name lacks sufficient differences from Bactrim or Tridione.

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/s/

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04/15/2013

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04/15/2013

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Department of Health and Human Services

Public Health Service

Food and Drug Administration

Center for Drug Evaluation and Research

Office of Surveillance and Epidemiology

Date:	May 23, 2008
To:	Bob Rappaport, MD, Director Division of Anesthesia, Analgesia and Rheumatology Products
Thru:	Kellie Taylor, PharmD, MPH, Team Leader Denise Toyer, PharmD, Deputy Director Carol Holquist, RPh, Director Division of Medication Error Prevention
From:	Judy Park, PharmD, Safety Evaluator Division of Medication Error Prevention
Subject:	Proprietary Name and Labeling Review
Drug Name(s):	(b) (4) (Sugammadex Sodium) Injection 100 mg/mL
Application Type/Number:	NDA 22-225
Applicant:	Organon
OSE RCM #:	2008-384

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/s/

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5/23/2008 04:19:55 PM
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