

**CENTER FOR DRUG EVALUATION AND  
RESEARCH**

*APPLICATION NUMBER:*

**212535Orig1s000**

**PROPRIETARY NAME REVIEW(S)**

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## **PROPRIETARY NAME REVIEW**

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

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

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<b>Date of This Review:</b>	September 5, 2019
<b>Application Type and Number:</b>	NDA 212535
<b>Product Name and Strength:</b>	Nouress (cysteine hydrochloride, USP) Injection, 500 mg/10 mL (50 mg/mL)
<b>Total Product Strength:</b>	50 mg/mL
<b>Product Type:</b>	Single Ingredient Product
<b>Rx or OTC:</b>	Prescription (Rx)
<b>Applicant/Sponsor Name:</b>	Avadel Legacy Pharmaceuticals, LLC
<b>Panorama #:</b>	2019-32766541
<b>DMEPA Safety Evaluator:</b>	Lissa C. Owens, PharmD
<b>DMEPA Team Leader:</b>	Idalia E. Rychlik, PharmD

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# 1 INTRODUCTION

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

## 1.1 REGULATORY HISTORY

Avadel previously submitted the proposed proprietary name, previous proposed name (b) (4) \*\*\* on March 18, 2019. However, we found the previous proposed name (b) (4) \*\*\* unacceptable due to similarity in spelling with the proprietary name, (b) (4) under NDA 212535 on June 12, 2019<sup>a</sup>.

Thus, Avadel submitted the name, Nouress, for review on June 27, 2019.

## 1.2 PRODUCT INFORMATION

The following product information is provided in the proprietary name submission received on June 27, 2019.

- Intended Pronunciation: nur-es
- Active Ingredient: cysteine hydrochloride, USP
- Indication of Use: For use as an additive to amino acids solutions to meet nutritional requirements of neonates requiring total parenteral nutrition (TPN)
- Route of Administration: Intravenous Infusion
- Dosage Form: Injection
- Strength: 500 mg/10 mL (50 mg/mL)
- Dose and Frequency: For addition to amino acids solutions intended for use in neonates, it is recommended that NOURESS be added to the amino acids solution to provide cysteine at (b) (4) % of the total amino acids being supplied. Hence, a neonate receiving amino acids solutions at (b) (4) g/kg/day should be provided (b) (4) mg/kg/day of cysteine or (b) (4) mL/kg/day of NOURESS (b) (4). A neonate receiving 3 g/kg/day of amino acids should be provided (b) (4) mL/kg/day of NOURESS (b) (4).

The amino acids admixture should then be aseptically diluted with appropriate caloric substrates calculated to supply the patient with adequate energy. The admixture should be refrigerated until ready for use and used within 24 hours of the time of mixing.

- How Supplied: 10 mL single dose vial (single and package of (b) (4) vials)
- Storage: Store at controlled room temperature 15°-30°C (59°-86°F) Do not freeze.

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<sup>a</sup> McMillan, T. Proprietary Name Review for (b) (4) (NDA 212535). Silver Spring (MD): FDA, CDER, OSE, DMEPA (US); 2019 JUN 12. Panorama No. 2019- 30148818

## **2 RESULTS**

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

### **2.1 MISBRANDING ASSESSMENT**

The Office of Prescription Drug Promotion (OPDP) determined that Nouress would not misbrand the proposed product. The Division of Medication Error Prevention and Analysis (DMEPA) and the Division of Gastroenterology and Inborn Errors Products (DGIEP) concurred with the findings of OPDP's assessment for Nouress.

### **2.2 SAFETY ASSESSMENT**

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

#### ***2.2.1 United States Adopted Names (USAN) Search***

There is no USAN stem present in the proposed proprietary name<sup>b</sup>

#### ***2.2.2 Components of the Proposed Proprietary Name***

Avadel did not provide a derivation or intended meaning for the proposed proprietary name, Nouress, 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 Comments from Other Review Disciplines at Initial Review***

In response to the OSE, July 12, 2019 e-mail, the Division of Gastroenterology and Inborn Errors Products (DGIEP) did not forward any comments or concerns relating to Nouress at the initial phase of the review.

#### ***2.2.4 FDA Name Simulation Studies***

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

#### ***2.2.5 Phonetic and Orthographic Computer Analysis (POCA) Search Results***

Our POCA search<sup>c</sup> identified 84 names with a combined phonetic and orthographic score of  $\geq 55\%$  or an individual phonetic or orthographic score  $\geq 70\%$ . These names are included in Table 1 below.

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<sup>b</sup> USAN stem search conducted on August 12, 2019.

<sup>c</sup> POCA search conducted on August 12, 2019 in version 4.3.

### 2.2.6 Names Retrieved for Review Organized by Name Pair Similarity

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

Table 1. Names Retrieved for Review Organized by Name Pair Similarity	
Similarity Category	Number of Names
Highly similar name pair: combined match percentage score $\geq 70\%$	2
Moderately similar name pair: combined match percentage score $\geq 55\%$ to $\leq 69\%$	83
Low similarity name pair: combined match percentage score $\leq 54\%$	11

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

Our analysis of the 96 names contained in Table 1 determined none of the names will pose a risk for confusion with Nouress as described in Appendices C through H.

### 2.2.8 Communication of DMEPA's Analysis at Midpoint of Review

DMEPA communicated our findings to the Division of Gastroenterology and Inborn Errors Products (DGIEP) via e-mail on September 5, 2019. At that time, we also requested additional information or concerns that could inform our review. Per e-mail correspondence from the Division of Gastroenterology and Inborn Errors Products (DGIEP) on September 5, 2019, they stated no additional concerns with the proposed proprietary name, Nouress.

## 3 CONCLUSION

The proposed proprietary name, Nouress, is acceptable.

If you have further questions or need clarifications, please contact Alvis Dunson, OSE project manager, at 301-796-6400.

### 3.1 COMMENTS TO AVADEL LEGACY PHARMACEUTICALS, LLC

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

If any of the proposed product characteristics as stated in your submission, received on June 27, 2019, are altered prior to approval of the marketing application, the name must be resubmitted for review.

## 4 REFERENCES

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

USAN Stems List contains all the recognized USAN stems.

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

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

### *Drugs@FDA*

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

### *RxNorm*

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

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

Radiopharmaceuticals, contrast media, food, dietary supplements, and medical devices, such as bandages and crutches, are all out of scope for RxNorm

(<http://www.nlm.nih.gov/research/umls/rxnorm/overview.html>).

### *Division of Medication Errors Prevention and Analysis proprietary name consultation requests*

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

## APPENDICES

### Appendix A

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

1. **Misbranding Assessment:** For prescription drug products, OPDP assesses the name for misbranding concerns. For over-the-counter (OTC) drug products, the misbranding assessment of the proposed name is conducted by DNDP. OPDP or DNDP evaluates proposed proprietary names to determine if the name is false or misleading, such as by making misrepresentations with respect to safety or efficacy. For example, a fanciful proprietary name may misbrand a product by suggesting that it has some unique effectiveness or composition when it does not (21 CFR 201.10(c)(3)). OPDP or DNDP provides their opinion to DMEPA for consideration in the overall acceptability of the proposed proprietary name.
2. **Safety Assessment:** The safety assessment is conducted by DMEPA, and includes the following:
  - a. Preliminary Assessment: We consider inclusion of USAN stems or other characteristics that when incorporated into a proprietary name may cause or contribute to medication errors (i.e., dosing interval, dosage form/route of administration, medical or product name abbreviations, names that include or suggest the composition of the drug product, etc.) See prescreening checklist below in Table 2\*. DMEPA defines a medication error as any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the health care professional, patient, or consumer.<sup>d</sup>

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<sup>d</sup> 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.
<b>Y/N</b>	<b>Is the proposed name obviously similar in spelling and pronunciation to other names?</b>
	Proprietary names should not be similar in spelling or pronunciation to proprietary names, established names, or ingredients of other products.
<b>Y/N</b>	<b>Are there inert or inactive ingredients referenced in the proprietary name?</b>
	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)).
<b>Y/N</b>	<b>Does the proprietary name include combinations of active ingredients?</b>
	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)).
<b>Y/N</b>	<b>Is there a United States Adopted Name (USAN) stem in the proprietary name?</b>
	Proprietary names should not incorporate a USAN stem in the position that USAN designates for the stem.
<b>Y/N</b>	<b>Is this proprietary name used for another product that does not share at least one common active ingredient?</b>
	Drug products that do not contain at least one common active ingredient should not use the same (root) proprietary name.
<b>Y/N</b>	<b>Is this a proprietary name of a discontinued product?</b>
	Proprietary names should not use the proprietary name of a discontinued product if that discontinued drug product does not contain the same active ingredients.

- b. Phonetic and Orthographic Computer Analysis (POCA): Following the preliminary screening of the proposed proprietary name, DMEPA staff evaluates the proposed name against potentially similar names. In order to identify names with potential similarity to the proposed proprietary name, DMEPA enters the proposed proprietary name in POCA and queries the name against the following drug reference databases, Drugs@fda, CernerRxNorm, and names in the review pipeline using a 55% threshold in POCA. DMEPA reviews the combined orthographic and phonetic matches and group the names into one of the following three categories:
- Highly similar pair: combined match percentage score  $\geq 70\%$ .
  - Moderately similar pair: combined match percentage score  $\geq 55\%$  to  $\leq 69\%$ .

- Low similarity: combined match percentage score  $\leq 54\%$ .

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

- For highly similar names, differences in product characteristics often cannot mitigate the risk of a medication error, including product differences such as strength and dose. Thus, proposed proprietary names that have a combined score of  $\geq 70$  percent are at risk for a look-alike sound-alike confusion which is an area of concern (See Table 3).
- Moderately similar names are further evaluated to identify the presence of attributes that are known to cause name confusion.
  - Name attributes: We note that the beginning of the drug name plays a significant role in contributing to confusion. Additionally, drug name pairs that start with the same first letter and contain a shared letter string of at least 3 letters in both names are major contributing factor in the confusion of drug names<sup>e</sup>. We evaluate all moderately similar names retrieved from POCA to identify the above attributes. These names are further evaluated to identify overlapping or similar strengths or doses.
  - Product attributes: Moderately similar names of products that have overlapping or similar strengths or doses represent an area for concern for FDA. The dose and strength information is often located in close proximity to the drug name itself on prescriptions and medication orders, and the information can be an important factor that either increases or decreases the potential for confusion between similarly named drug pairs. The ability of other product characteristics to mitigate confusion (e.g., route, frequency, dosage form) may be limited when the strength or dose overlaps. DMEPA reviews such names further, to determine whether sufficient differences exist to prevent confusion. (See Table 4).
- Names with low similarity that have no overlap or similarity in strength and dose are generally acceptable (See Table 5) unless there are data to suggest that the name might be vulnerable to confusion (e.g., prescription simulation study suggests that the name is likely to be misinterpreted as a marketed product). In these instances, we would reassign

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<sup>e</sup> Shah, M, Merchant, L, Characteristics That May Help in the Identification of Potentially Confusing Proprietary Drug Names. Therapeutic Innovation & Regulatory Science, September 2016

a low similarity name to the moderate similarity category and review according to the moderately similar name pair checklist.

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

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

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

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

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

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

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

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

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

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

**Table 4: Moderately Similar Name Pair Checklist (i.e., combined score is  $\geq 55\%$  to  $\leq 69\%$ ).**

Step 1	<p>Review the DOSAGE AND ADMINISTRATION and HOW SUPPLIED/STORAGE AND HANDLING sections of the prescribing information (or for OTC drugs refer to the Drug Facts label) to determine if strengths and doses of the name pair overlap or are very similar. Different strengths and doses for products whose names are moderately similar may decrease the risk of confusion between the moderately similar name pairs. Name pairs that have overlapping or similar strengths or doses have a higher potential for confusion and should be evaluated further (see Step 2). Because the strength or dose could be used to express an order or prescription for a particular drug product, overlap in one or both of these components would be reason for further evaluation.</p> <p>For single strength products, also consider circumstances where the strength may not be expressed.</p> <p>For any i.e. drug products comprised of more than one active ingredient, consider whether the strength or dose may be expressed using only one of the components.</p> <p>To determine whether the strengths or doses are similar to your proposed product, consider the following list of factors that may increase confusion:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Trailing or deleting zeros: 10 mg is similar in appearance to 100 mg which may potentiate confusion between a name pair with moderate similarity.</li> <li>• Similar sounding doses: 15 mg is similar in sound to 50 mg</li> </ul>
Step 2	<p>Answer the questions in the checklist below. Affirmative answers to some of these questions suggest that the pattern of orthographic or phonetic differences in the names may reduce the likelihood of confusion for moderately similar names <b><u>with</u></b> overlapping or similar strengths or doses.</p>

	<p>Orthographic Checklist (Y/N to each question)</p> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>Considering variations in scripting of some letters (such as <i>z</i> and <i>f</i>), is there a different number or placement of upstroke/downstroke letters present in the names?</li> <li>Is there different number or placement of cross-stroke or dotted letters present in the names?</li> <li>Do the infixes of the name appear dissimilar when scripted?</li> <li>Do the suffixes of the names appear dissimilar when scripted?</li> </ul>	<p>Phonetic Checklist (Y/N to each question)</p> <ul style="list-style-type: none"> <li>Do the names have different number of syllables?</li> <li>Do the names have different syllabic stresses?</li> <li>Do the syllables have different phonologic processes, such as vowel reduction, assimilation, or deletion?</li> <li>Across a range of dialects, are the names consistently pronounced differently?</li> </ul>
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**Table 5: Low Similarity Name Pair Checklist (i.e., combined score is  $\leq 54\%$ ).**

Names with low similarity are generally acceptable unless there are data to suggest that the name might be vulnerable to confusion (e.g., prescription simulation study suggests that the name is likely to be misinterpreted as a marketed product). In these instances, we would reassign a low similarity name to the moderate similarity category and review according to the moderately similar name pair checklist.

## Appendix B: Prescription Simulation Samples and Results

**Figure 1. Nouress Study (Conducted on July 12, 2019)**

Handwritten Medication Order/Prescription	Verbal Prescription
<p data-bbox="191 394 430 426"><u>Medication Order:</u></p> <p data-bbox="191 447 1117 506">Nouress (b) (4) mg per gram of amino acids</p> <hr/> <p data-bbox="191 531 500 562"><u>Outpatient Prescription:</u></p> <p data-bbox="191 583 544 793">Nouress Bring to clinic #5 vials</p>	<p data-bbox="1157 394 1356 531">Nouress Bring to Clinic #5 vials</p>

**Study Name: Nouress**

As of Date 8/22/2019

218 People Received Study  
87 People Responded

Study Name: Nouress

	Total	23	44	20	
INTERPRETATION	OUTPATIENT	VOICE	INPATIENT	TOTAL	
DURESS	0	3	0	3	
<del>NERES</del>	0	1	0	1	
<del>NERVREST</del>	0	1	0	1	
<del>NEURAS</del>	0	1	0	1	
<del>NEURES</del>	0	2	0	2	
<del>NEURESS</del>	0	11	0	11	
<del>NEUREST</del>	0	1	0	1	
<del>NEUREZ</del>	0	1	0	1	
<del>NOLUESS</del>	0	0	1	1	
<del>NORESS</del>	0	1	0	1	
<del>NOREX</del>	0	1	0	1	
<del>NOUREN</del>	3	0	0	3	
NOURESS	20	0	9	29	
<del>NOVERESS</del>	0	0	1	1	
<del>NOVESS</del>	0	0	1	1	
<del>NOWESS</del>	0	0	7	7	
<del>NUERESS</del>	0	2	0	2	
<del>NURES</del>	0	5	0	5	
<del>NURESS</del>	0	13	1	14	
<del>NURIES</del>	0	1	0	1	



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

No.	<b>Proposed name:</b> Nouress <b>Established name:</b> cysteine hydrochloride, USP <b>Dosage form:</b> Injection <b>Strength(s):</b> 500 mg/10 mL (50 mg/mL) <b>Usual Dose:</b> <sup>(b)</sup> <sub>(4)</sub> % of the total amino acids being supplied	POCA Score (%)	<b>Orthographic and/or phonetic differences in the names sufficient to prevent confusion</b>  <b>Other prevention of failure mode expected to minimize the risk of confusion between these two names.</b>
1.	Nouress***	100	Name is the subject of this review
2.	Nourish	78	Product is a medical food.

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

No.	Name	POCA Score (%)
3.	Fluress	61
4.	Nutr-E-Sol	61
5.	Nourianz***	61
6.	Ocupress	60
7.	Nora-Be	58
8.	Enpresse-21	57
9.	Enpresse-28	57
10.	Nucort	56
11.	Solurex	55
12.	Journee	55

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

No.	<b>Proposed name:</b> Nouress <b>Established name:</b> cysteine hydrochloride, USP <b>Dosage form:</b> Injection <b>Strength(s):</b> 500 mg/10 mL (50 mg/mL) <b>Usual Dose:</b> <sup>(b)</sup> <sub>(4)</sub> % of the total amino acids being supplied	POCA Score (%)	<b>Prevention of Failure Mode</b>  <b>In the conditions outlined below, the following combination of factors, are expected to minimize the risk of confusion between these two names</b>
13.	Norisc	68	This name pair has sufficient orthographic differences. Phonetically, the ending sounds of the second syllable (ress vs. risc) sound different.  Norisc is available in a cream and a wash/solution whereas Nouress is

No.	<b>Proposed name:</b> Nouress <b>Established name:</b> cysteine hydrochloride, USP <b>Dosage form:</b> Injection <b>Strength(s):</b> 500 mg/10 mL (50 mg/mL) <b>Usual Dose:</b> (b)(4)% of the total amino acids being supplied	<b>POCA Score (%)</b>	<b>Prevention of Failure Mode</b>  <b>In the conditions outlined below, the following combination of factors, are expected to minimize the risk of confusion between these two names</b>
			<p>available in a single injection dosage form. The dosage form of Norisc would be specified on a medication order/prescription.</p> <p>The dose of Norisc is to use as directed or apply to affected area which does not overlap with the dose of Nouress which is dependent on the total amount of amino acids being supplied and weight-based ( (b)(4) % of total amino acids).</p> <p>Nouress will be used as an additive in amino acid/TPN solutions, which in clinical practice is considered a high alert medication requiring special safeguards in various points of the medication use process to reduce the risk of error. Furthermore, additives for TPN solutions are typically ordered by the established name (e.g., cysteine) using a TPN prescription/order program and it is not anticipated that Nouress will be written on a medication order alone. Additionally, there are compatibility considerations with TPN solutions.</p>
14.	Neotuss	67	<p>Neotuss has an upstroke letter 't' in the infix which provides some orthographic differences. Phonetically, Neotuss has an additional syllable and the first (Ne vs. Nur) and second syllables (o vs. es) sound different.</p> <p>Nouress will be used as an additive in amino acid/TPN solutions, which in</p>

No.	<b>Proposed name:</b> Nouress <b>Established name:</b> cysteine hydrochloride, USP <b>Dosage form:</b> Injection <b>Strength(s):</b> 500 mg/10 mL (50 mg/mL) <b>Usual Dose:</b> (b)(4)% of the total amino acids being supplied	<b>POCA Score (%)</b>	<b>Prevention of Failure Mode</b>  <b>In the conditions outlined below, the following combination of factors, are expected to minimize the risk of confusion between these two names</b>
			clinical practice is considered a high alert medication requiring special safeguards in various points of the medication use process to reduce the risk of error. Furthermore, additives for TPN solutions are typically ordered by the established name (e.g., cysteine) using a TPN prescription/order program and it is not anticipated that Nouress will be written on a medication order alone. Additionally, there are compatibility considerations with TPN solutions.
15.	Norcet	64	<p>Orthographically, the suffixes (cet vs. ess) look different. Phonetically, the second syllables (cet vs. es) sound different.</p> <p>The dose of Norcet is 1 to 2 tablets or capsules every 4 to 6 hours as needed. The dose of Nouress is dependent on the total amount of amino acids being supplied and weight-based ((b)(4))% of total amino acids).</p> <p>Nouress will be used as an additive in amino acid/TPN solutions, which in clinical practice is considered a high alert medication requiring special safeguards in various points of the medication use process to reduce the risk of error. Furthermore, additives for TPN solutions are typically ordered by the established name (e.g., cysteine) using a TPN prescription/order program and it is not anticipated that Nouress will be written on a medication order alone. Additionally,</p>

No.	<b>Proposed name:</b> Nouress <b>Established name:</b> cysteine hydrochloride, USP <b>Dosage form:</b> Injection <b>Strength(s):</b> 500 mg/10 mL (50 mg/mL) <b>Usual Dose:</b> (b)(4)% of the total amino acids being supplied	<b>POCA Score (%)</b>	<b>Prevention of Failure Mode</b>  <b>In the conditions outlined below, the following combination of factors, are expected to minimize the risk of confusion between these two names</b>
			there are compatibility considerations with TPN solutions.
16.	Nuversa	64	<p>This name pair has sufficient orthographic and phonetic differences</p> <p>Nuversa is a gel administered once intravaginally at bedtime (or use as directed). The dose of Nuversa does not overlap with that of Nouress (dependent on the total amount of amino acids being supplied and weight-based ((b)(4)% of total amino acids)).</p> <p>Nouress will be used as an additive in amino acid/TPN solutions, which in clinical practice is considered a high alert medication requiring special safeguards in various points of the medication use process to reduce the risk of error. Furthermore, additives for TPN solutions are typically ordered by the established name (e.g., cysteine) using a TPN prescription/order program and it is not anticipated that Nouress will be written on a medication order alone. Additionally, there are compatibility considerations with TPN solutions.</p>
17.	Neo-Rx	63	This name pair has sufficient orthographic and phonetic differences
18.	Zortress	62	This name pair has sufficient orthographic and phonetic differences
19.	Zulresso	62	This name pair has sufficient orthographic and phonetic differences
20.	Neoral	61	This name pair has sufficient orthographic and phonetic differences

No.	<b>Proposed name:</b> Nouress <b>Established name:</b> cysteine hydrochloride, USP <b>Dosage form:</b> Injection <b>Strength(s):</b> 500 mg/10 mL (50 mg/mL) <b>Usual Dose:</b> <sup>(b) (4)</sup> % of the total amino acids being supplied	POCA Score (%)	<b>Prevention of Failure Mode</b>  <b>In the conditions outlined below, the following combination of factors, are expected to minimize the risk of confusion between these two names</b>
21.	<sup>(b) (4)</sup> ***	61	This name pair has sufficient orthographic and phonetic differences
22.	Nitropress	60	This name pair has sufficient orthographic and phonetic differences
23.	Xerese	58	This name pair has sufficient orthographic and phonetic differences
24.	<sup>(b) (4)</sup> ***	57	This name pair has sufficient orthographic and phonetic differences
25.	Norvasc	57	This name pair has sufficient orthographic and phonetic differences
26.	Diurex	56	This name pair has sufficient orthographic and phonetic differences
27.	Nu-Iron	56	This name pair has sufficient orthographic and phonetic differences
28.	Nu-Iron 150	56	This name pair has sufficient orthographic and phonetic differences
29.	Norpace	56	This name pair has sufficient orthographic and phonetic differences
30.	Neuraceq	56	This name pair has sufficient orthographic and phonetic differences
31.	Ferrous	56	This name pair has sufficient orthographic and phonetic differences
32.	Minipress	56	This name pair has sufficient orthographic and phonetic differences
33.	Norgesic	54	This name pair has sufficient orthographic and phonetic differences

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

No.	Name	POCA Score (%)
34.	Ocufresh	53
35.	Myreth-4	51
36.	Isentress	50
37.	Norquest Fe	49
38.	Endotuss	49
39.	Notuss Pe	49

40.	Notuss-Nx	47
41.	(b) (4) ***	46
42.	Neurontin	46
43.	Elcys	46
44.	Warfarin	18

**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
45.	Norel SR	67	Product is discontinued with no generics available.
46.	Aureo S	66	Product is a veterinary drug product
47.	Norel SD	65	Product is discontinued with no generics available.
48.	Diurese	65	Product is discontinued with no generics available.
49.	Diupres	64	Product is discontinued with no generics available.
50.	Diupres-250	64	Product is discontinued with no generics available.
51.	Diupres-500	64	Product is discontinued with no generics available.
52.	Menorest 37.5	64	Foreign drug product not available in the US
53.	Menorest 50	64	Foreign drug product not available in the US
54.	Menorest 75	64	Foreign drug product not available in the US
55.	Unipres	63	Product is discontinued with no generics available.
56.	Neurosyn	62	Product is a veterinary drug product
57.	(b) (4) ***	62	Proposed proprietary name for IND (b) (4) withdrawn by the Applicant on August 2, 2019. No alternate name submitted at this time.
58.	Fluress	61	Product is discontinued with no generics available.
59.	Nariz	60	Product is discontinued with no generics available.
60.	Moduret	60	Foreign drug product not available in the US
61.	Metoros	60	Foreign drug product not available in the US
62.	Notuss	60	Product is discontinued with no generics available.
63.	Novrad	58	Product is discontinued with no generics available.
64.	Neovet	58	Product is a veterinary drug product
65.	Norestin	58	Foreign drug product not available in the US
66.	Marpres	58	Product is discontinued with no generics available.
67.	Mallopress	58	Foreign drug product not available in the US
68.	Neotrace-4	58	Product is discontinued with no generics available.
69.	Touro Ex	58	Product is discontinued with no generics available.
70.	Nasotuss	58	Product is discontinued with no generics available.
71.	Urese	58	Product is discontinued with no generics available.

No.	Name	POCA Score (%)	Failure preventions
72.	Norvaxs	57	Name identified in RxNorm database. Unable to find product characteristics in commonly used drug databases.
73.	Diuresal	56	Foreign drug product not available in the US
74.	Gynorest	56	Product is discontinued with no generics available.
75.	Xuret	55	Foreign drug product not available in the US
76.	(b) (4) ***	55	Product received a Refuse to File on August 9, 2019 and the proposed proprietary name was not evaluated under the NDA.
77.	Neosar	55	Product is a discontinued with no generics available.
78.	Nucotuss	54	Product is discontinued with no generics available.
79.	Nortuss Ex	54	Name identified in RxNorm database. Unable to find product characteristics in commonly used drug databases.
80.	Nutrestore	51	Product is discontinued with no generics available.
81.	Suppressor	50	Product is a veterinary drug product
82.	Nortuss-Nx	50	Name identified in RxNorm database. Unable to find product characteristics in commonly used drug databases.
83.	(b) (4) ***	50	Name identified in Names Entered by Safety Evaluator database. Unable to find product characteristics in internal databases.

**Appendix H:** Names not likely to be confused due to absence of attributes that are known to cause name confusion<sup>f</sup>.

No.	Name	POCA Score (%)
84.	Feoris	62
85.	Entre-S	61
86.	Metoros	60
87.	Anorex	58
88.	Anorex-Sr	58
89.	Denorex	58
90.	Soulus	58
91.	Tenoret	58
92.	Sanorex	57

<sup>f</sup> Shah, M, Merchant, L, Chan, I, and Taylor, K. Characteristics That May Help in the Identification of Potentially Confusing Proprietary Drug Names. Therapeutic Innovation & Regulatory Science, September 2016

No.	Name	POCA Score (%)
93.	Baros	56
94.	Mio-Rel	56
95.	Omnaris	56
96.	Surpass	56



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## PROPRIETARY NAME REVIEW

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

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

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<b>Date of This Review:</b>	June 12, 2019
<b>Application Type and Number:</b>	NDA 212535
<b>Product Name and Strength:</b>	(b) (4) (Cysteine Hydrochloride, USP) Injection, 500 mg/10 mL (50 mg/mL)
<b>Total Product Strength:</b>	50 mg/mL
<b>Product Type:</b>	Single Ingredient Product
<b>Rx or OTC:</b>	Prescription (Rx)
<b>Applicant/Sponsor Name:</b>	Avadel Legacy Pharmaceuticals, LLC (Avadel)
<b>Panorama #:</b>	2019- 30148818
<b>DMEPA Safety Evaluator:</b>	Teresa McMillan, PharmD
<b>DMEPA Team Leader:</b>	Idalia E. Rychlik, PharmD
<b>DMEPA Assoc. Director:</b>	Mishale Mistry, PharmD, MPH

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