

**CENTER FOR DRUG EVALUATION AND  
RESEARCH**

*APPLICATION NUMBER:*

**208551Orig1s000**

**CLINICAL PHARMACOLOGY AND  
BIOPHARMACEUTICS REVIEW(S)**

**OFFICE OF CLINICAL PHARMACOLOGY REVIEW**

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|--------------------------|---|
| NDA                      | 208551, SDN 1   |
| Submission Date(s)       | June 25, 2015   |
| Brand Name               | TRIFERIC  |
| Generic Name             | Ferric pyrophosphate citrate  |
| Reviewer                 | Olanrewaju Okusanya, Pharm.D, MS  |
| Team Leader              | Gene Williams, Ph.D   |
| OCP Division             | DCP V   |
| OND Division             | DHP   |
| Sponsor                  | Rockwell Medical Inc.   |
| Relevant IND(s)          | 51290   |
| Submission Type; Code    | Original-1 (Type 3- New Dosage Form)  |
| Formulation; Strength(s) | Powder for dissolution; 272 mg Fe/ packet   |
| Indication               | The replacement of iron to maintain hemoglobin in adult patients with hemodialysis-dependent chronic kidney disease (HDD-CKD) |

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## 1 EXECUTIVE SUMMARY

TRIFERIC (Ferric pyrophosphate citrate) is a mixed ligand iron complex in which iron (III) is bound to citrate and pyrophosphate. TRIFERIC was approved for the replacement of iron to maintain hemoglobin in adult patients with hemodialysis-dependent chronic kidney disease (HDD-CKD). The approved dosage form was single-use ampules each containing 27.2 mg of iron (III) per 5mL. One ampule is added to 2.5 gallons of liquid bicarbonate and delivers 27.2 mg of iron per every 2.5 gallons of liquid bicarbonate concentrate, to deliver a final hemodialysate concentration of 2  $\mu$ M (110  $\mu$ g/L) of iron. The current submission is for a new packaging that will provide Triferic as an API powder in a packet for dilution. No clinical pharmacology information was included in this application, and no changes to clinical pharmacology related portions of the package insert are proposed. The applicant cross-referenced their previously approved application NDA 206317.

### 1.1 Recommendation

The application is approvable from a clinical pharmacology perspective.

### 1.2 Post-marketing Requirements and Commitments

No post-marketing requirements or commitments are recommended.

### 1.3 Summary of Important Clinical Pharmacology and Biopharmaceutics Findings

No clinical pharmacology information was included in this application, and no changes to clinical pharmacology related portions of the package insert are proposed. There are no clinical pharmacology and biopharmaceutics findings.

### Signatures

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Olanrewaju O. Okusanya, Pharm.D., MS  
Clinical Pharmacology Reviewer  
Division of Clinical Pharmacology V

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Gene Williams, Ph.D.  
Team Leader  
Division of Clinical Pharmacology V

Cc: DHP: CSO – **K Scott**; MTL – **K. Robie-Suh**; MO – **M Lu**  
DCP V: Reviewer - **O Okusanya**, TL – **G Williams**, DDD – **B Booth**; DD – **A Rahman**

## **2 QUESTION BASED REVIEW**

No QBR was conducted. The Applicant cross-referenced their previously-approved NDA 206317.

## **3 DETAILED LABELING RECOMMENDATIONS**

No changes to clinical pharmacology related portions of the package insert were proposed by the applicant. The reviewer has no labeling recommendations.

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**This is a representation of an electronic record that was signed electronically and this page is the manifestation of the electronic signature.**  
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/s/  
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OLANREWAJU OKUSANYA  
03/18/2016

GENE M WILLIAMS  
03/18/2016  
I concur with the recommendations