



NDA 213793

GENERAL ADVICE

Rhythm Pharmaceuticals, Inc.
Attention: Joanne Totosy de Zepetnek, PhD
VP Regulatory Affairs
222 Berkeley Street; Suite 1200
Boston, MA 02116-3748

Dear Dr. Totosy de Zepetnek:

Please refer to your new drug application (NDA) submitted under section 505(b) of the Federal Food, Drug, and Cosmetic Act for Imcivree (setmelanotide) injection.

We also refer to our approval letter dated November 25, 2020, which contained several errors in the attached labeling. The labeling has been updated as described below:

1. In the Prescribing Information, Contents, the section title for Section 8.2 – Lactation was missing. This information was added.
2. In the Prescribing Information, Section 14, the following items were corrected:
 - a) The third paragraph, last sentence, contained a typographical error (the sentence was missing the word “in”) and was revised: Six additional patients enrolled in the studies (4 in Study 1 and 2 in Study 2) who had not yet completed 1 year of treatment at the time of the cutoff were not included **in** the efficacy analyses.
 - b) The header for Study 1 was updated to include “or PCSK1” in Table 2, Table 3, Table 4, and Figure 1. The corrected tables and figure are listed below:

Table 2: Body Weight (kg) – Proportion of Patients Achieving at Least 10% Weight Loss from Baseline at 1 Year in Study 1 and Study 2

Parameter	Statistic	Study 1 (POMC or PCSK1) (N=10)	Study 2 (LEPR) (N=11)
Patients Achieving at Least 10% Weight Loss at Year 1	n (%)	8 (80.0%)	5 (45.5%)
	95% CI ¹	(44.4%, 97.5%)	(16.8%, 76.6%)
	P-value ²	<0.0001	0.0002

Note: The analysis set includes patients who received at least 1 dose of study drug and had at least 1 baseline assessment.

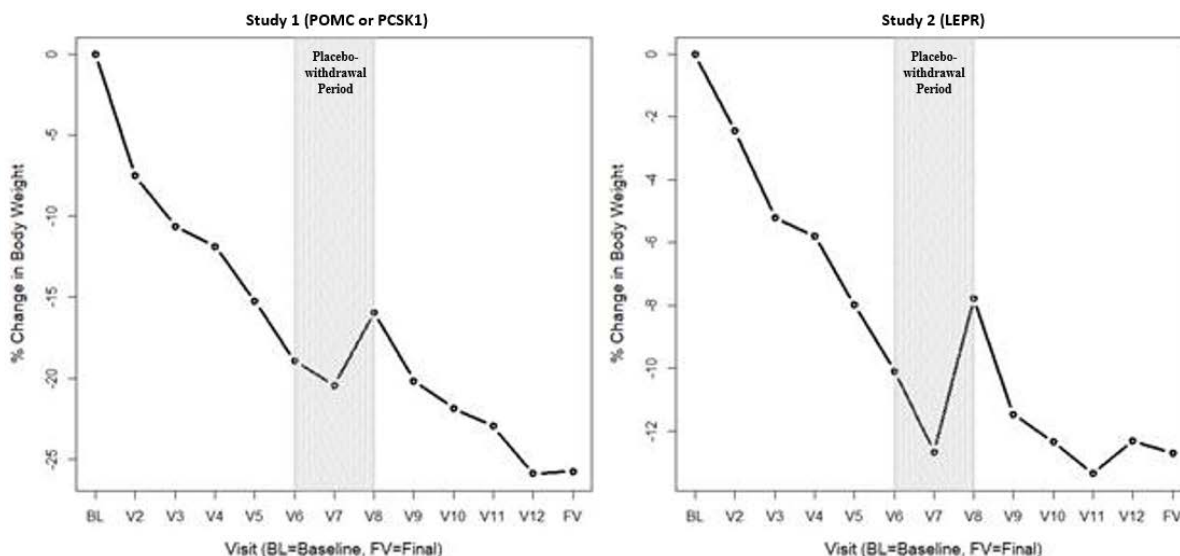
¹ From the Clopper-Pearson (exact) method

² Testing the null hypothesis: Proportion =5%

Table 3: Percent Change from Baseline in Weight at 1 Year in Studies 1 and 2 (Full Analysis Set)

Parameter	Statistic	Study 1 (POMC or PCSK1) (N=10)	Study 2 (LEPR) (N=11)
Baseline Body Weight (kg)	Mean (SD)	118.7 (37.5)	133.3 (26.0)
	Median	115.0	132.3
	Min, Max	55.9, 186.7	89.4, 170.4
1-Year Body Weight (kg)	Mean (SD)	89.8 (29.4)	119.2 (27.0)
	Median	84.1	120.3
	Min, Max	54.5, 150.5	81.7, 149.9
Percent Change from Baseline to 1 Year (%)	Mean (SD)	-23.1 (12.1)	-9.7 (8.8)
	Median	-26.7	-9.8
	Min, Max	-35.6, -1.2	-23.3, 0.1
	LS Mean ¹	-23.12	-9.65
	95% CI ¹	(-31.9, -14.4)	(-16.0, -3.3)
	P-value ²	0.0003	0.0074
Note: This analysis includes patients who received at least 1 dose of study drug, had at least 1 baseline assessment. ¹ ANCOVA model containing baseline body weight as a covariate ² Testing the null hypothesis: mean percent change=0			

Figure 1: Mean Percent Change in Body Weight from Baseline by Visit (Study 1 [N=9] and Study 2 [N=7])



BL=Baseline (day of first dose)

V2 to V3 = variable dose titration period (2 to 12 weeks)

V3 to V6 = 10-week open-label treatment period

V6 to V8 = 8-week placebo withdrawal period (4 weeks active, 4 weeks placebo)

V8 to V12 = 32-week open-label treatment period

FV = Final visit; time point for primary efficacy analysis

Note: This figure includes patients who had lost at least 5 kg (or 5% of body weight if baseline body weight was <100 kg) during the 10-week open-label period.

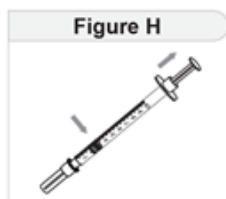
- c) In Table 4, the number of subjects listed under Study 2 was inaccurate based on the table title. The number of patients in Study 2 with available data was updated to 8. The footnote incorrectly stated the number of patients with missing hunger data. The footnote was updated to reflect three patients with missing hunger data at 1 year. The ranges for weekly hunger scores were rounded to the nearest integer. These values were updated to one decimal place, as they represent the weekly mean of daily hunger scores. The corrected table is listed below.

Table 4: Daily Hunger Scores – Change from Baseline at 1 Year in Subjects Aged ≥12 Years in Study 1 and Study 2 with Available Hunger Data

Parameter	Statistic	Hunger in 24 Hours	
		Study 1 (POMC or PCSK1) (N=8)	Study 2 (LEPR) (N=8)
Baseline Hunger Score	Median	7.9	7.0
	Min, Max	7.0, 9.1	5.0, 8.4
1-Year Hunger Score	Median	5.5	4.4
	Min, Max	2.5, 8.0	2.1, 8.0
Change from Baseline to 1 Year	Median	-2.0	-3.4
	Min, Max	-6.5, -0.1	-4.7, 1.0

Note: This analysis includes patients aged 12 years and older who received at least 1 dose of study drug and had available data. Three patients in Study 2 had missing hunger data at Week 52. Hunger score was captured in a daily diary and was averaged to calculate a weekly score for analysis. Hunger ranged from 0 to 10 on an 11-point scale where 0 = “not hungry at all” and 10 = “hungriest possible.”

3. In the Instructions for Use document, Figure H image incorrectly showed the vial instead of syringe. The corrected Figure H is listed below:



- Fill the syringe with air.
 - Keep the protective needle cap on the syringe.
 - Pull back on the plunger until the end of the black rubber stopper stops at your dose. Fill the syringe with air equal to the amount of the medicine to be given (**Figure H**).
- Remove the protective needle cap from the syringe.
 - Remove the protective needle cap by pulling it straight off and away from your body.

This General Advice letter acknowledges the errors described above and incorporates the correction of the errors. The effective approval date will remain November 25, 2020, the date of the original approval letter.

If you have any questions, call Arati B. Kamath, Ph.D., Regulatory Project Manager, at (301) 796-3179.

Sincerely,

{See appended electronic signature page}

Ellis Unger, MD
Director
Office of Cardiology, Hematology, Endocrinology,
and Nephrology (OCHEN)
Center for Drug Evaluation and Research

ENCLOSURE

- Content of Labeling
 - Prescribing Information
 - Instructions for Use

This is a representation of an electronic record that was signed electronically. Following this are manifestations of any and all electronic signatures for this electronic record.

/s/

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NDA 213793

NDA APPROVAL

Rhythm Pharmaceuticals, Inc.
Attention: Joanne Totosy de Zepetnek, PhD
VP Regulatory Affairs
222 Berkeley Street; Suite 1200
Boston, MA 02116-3748

Dear Dr. Totosy de Zepetnek:

Please refer to your new drug application (NDA) dated and received March 27, 2020, and your amendments, submitted under section 505(b) of the Federal Food, Drug, and Cosmetic Act (FDCA) for Imcivree (setmelanotide) injection.

This new drug application provides for the use of Imcivree (setmelanotide) injection for chronic weight management in adult and pediatric patients 6 years of age and older with obesity due to proopiomelanocortin (POMC), proprotein convertase subtilisin/kexin type 1 (PCSK1), or leptin receptor (LEPR) deficiency confirmed by genetic testing demonstrating variants in *POMC*, *PCSK1*, or *LEPR* genes that are interpreted as pathogenic, likely pathogenic, or of uncertain significance (VUS).

APPROVAL & LABELING

We have completed our review of this application, as amended. It is approved, effective on the date of this letter, for use as recommended in the enclosed agreed-upon labeling.

WAIVER OF ½ PAGE LENGTH REQUIREMENT FOR HIGHLIGHTS

We are waiving the requirements of 21 CFR 201.57(d)(8) regarding the length of Highlights of Prescribing Information. This waiver applies to all future supplements containing revised labeling unless we notify you otherwise.

CONTENT OF LABELING

As soon as possible, but no later than 14 days from the date of this letter, submit the content of labeling [21 CFR 314.50(l)] in structured product labeling (SPL) format using the FDA automated drug registration and listing system (eLIST), as described at [FDA.gov](http://www.fda.gov).¹ Content of labeling must be identical to the enclosed labeling (text for the Prescribing Information, Patient Package Insert, and Instructions for Use) as well as

¹ <http://www.fda.gov/ForIndustry/DataStandards/StructuredProductLabeling/default.htm>

annual reportable changes not included in the enclosed labeling. Information on submitting SPL files using eLIST may be found in the guidance for industry *SPL Standard for Content of Labeling Technical Qs and As*.²

The SPL will be accessible via publicly available labeling repositories.

CARTON AND CONTAINER LABELING

Submit final printed carton and container labeling that are identical to the enclosed carton and container labeling as soon as they are available, but no more than 30 days after they are printed. Please submit this labeling electronically according to the guidance for industry *Providing Regulatory Submissions in Electronic Format — Certain Human Pharmaceutical Product Applications and Related Submissions Using the eCTD Specifications*. For administrative purposes, designate this submission “**Final Printed Carton and Container Labeling for approved NDA 213793.**” Approval of this submission by FDA is not required before the labeling is used.

DATING PERIOD

Based on the stability data submitted to date, the expiry dating period for Imcivree (setmelanotide) injection shall be 24 months from the date of manufacture when stored at 2 to 8 °C.

RARE PEDIATRIC DISEASE PRIORITY REVIEW VOUCHER

We also inform you that you have been granted a rare pediatric disease priority review voucher, as provided under section 529 of the FDCA. This priority review voucher (PRV) has been assigned a tracking number, PRV NDA 213793. All correspondences related to this voucher should refer to this tracking number.

This voucher entitles you to designate a single human drug application submitted under section 505(b)(1) of the FDCA or a single biologic application submitted under section 351 of the Public Health Service Act as qualifying for a priority review. Such an application would not have to meet any other requirements for a priority review. The list below describes the sponsor responsibilities and the parameters for using and transferring a rare pediatric disease priority review voucher.

- The sponsor who redeems the priority review voucher must notify FDA of its intent to submit an application with a priority review voucher at least 90 days before submission of the application, and must include the date the sponsor intends to submit the application. This notification should be prominently marked,

² We update guidances periodically. For the most recent version of a guidance, check the FDA Guidance Documents Database <https://www.fda.gov/RegulatoryInformation/Guidances/default.htm>.

“Notification of Intent to Submit an Application with a Rare Pediatric Disease Priority Review Voucher.”

- This priority review voucher may be transferred, including by sale, by you to another sponsor of a human drug or biologic application. There is no limit on the number of times that the priority review voucher may be transferred, but each person to whom the priority review voucher is transferred must notify FDA of the change in ownership of the voucher not later than 30 days after the transfer. If you retain and redeem this priority review voucher, you should refer to this letter as an official record of the voucher. If the priority review voucher is transferred, the sponsor to whom the priority review voucher has been transferred should include a copy of this letter (which will be posted on our Web site as are all approval letters) and proof that the priority review voucher was transferred.
- FDA may revoke the priority review voucher if the rare pediatric disease product for which the priority review voucher was awarded is not marketed in the U.S. within 1 year following the date of approval.
- The sponsor of an approved rare pediatric disease product application who is awarded a priority review voucher must submit a report to FDA no later than 5 years after approval that addresses, for each of the first 4 post-approval years:
 - the estimated population in the U.S. suffering from the rare pediatric disease for which the product was approved (both the entire population and the population aged 0 through 18 years),
 - the estimated demand in the U.S. for the product, and
 - the actual amount of product distributed in the U.S.
- You may also review the requirements related to this program by visiting FDA's Rare Pediatric Disease Priority Review Voucher Program web page.³

ADVISORY COMMITTEE

Your application for Imcivree was not referred to an FDA advisory committee because the application did not raise significant safety or efficacy issues in the intended population, and there were no controversial issues that would benefit from advisory committee discussion.

REQUIRED PEDIATRIC ASSESSMENTS

Under the Pediatric Research Equity Act (PREA) (21 U.S.C. 355c), all applications for new active ingredients (which includes new salts and new fixed combinations), new

³ <https://www.fda.gov/industry/developing-products-rare-diseases-conditions/rare-pediatric-disease-rpd-designation-and-voucher-programs>

indications, new dosage forms, new dosing regimens, or new routes of administration are required to contain an assessment of the safety and effectiveness of the product for the claimed indication in pediatric patients unless this requirement is waived, deferred, or inapplicable.

Because this drug product for this indication has an orphan drug designation, you are exempt from this requirement.

POSTMARKETING REQUIREMENTS UNDER 505(o)

Section 505(o)(3) of the Federal Food, Drug, and Cosmetic Act (FDCA) authorizes FDA to require holders of approved drug and biological product applications to conduct postmarketing studies and clinical trials for certain purposes, if FDA makes certain findings required by the statute.

We have determined that an analysis of spontaneous postmarketing adverse events reported under subsection 505(k)(1) of the FDCA will not be sufficient to identify an unexpected serious risk of carcinogenicity. Furthermore, the active postmarket risk identification and analysis system as available under section 505(k)(3) of the FDCA will not be sufficient to assess this serious risk.

Therefore, based on appropriate scientific data, FDA has determined that you are required to conduct the following study:

3973-1 Complete the ongoing 26-week carcinogenicity study of setmelanotide in transgenic Tg.rash2 mice

The timetable you submitted on November 23, 2020, states that you will conduct this study according to the following schedule:

Final Report Submission: January 2021

Finally, we have determined that only a clinical trial (rather than a nonclinical or observational study) will be sufficient to assess a signal of a serious risk of QT interval prolongation.

Therefore, based on appropriate scientific data, FDA has determined that you are required to conduct the following trial:

3973-2 Conduct a thorough QT trial to evaluate the effect of setmelanotide on the QTc interval. Design and conduct the trial in accordance with the ICH E14 guidance entitled, E14 Clinical Evaluation of QT/QTc Interval Prolongation and Proarrhythmic Potential for Non-Antiarrhythmic Drugs, and its Questions and Answers (R3).

The timetable you submitted on November 23, 2020, states that you will conduct this trial according to the following schedule:

Draft Protocol Submission: March 2021
Final Protocol Submission: October 2021
Trial Completion: June 2022
Final Report Submission: December 2022

FDA considers the term *final* to mean that the applicant has submitted a protocol, the FDA review team has sent comments to the applicant, and the protocol has been revised as needed to meet the goal of the study or clinical trial.⁴

Submit clinical protocol(s) to your IND 112595 with a cross-reference letter to this NDA. Submit nonclinical and chemistry, manufacturing, and controls protocols and all final report(s) to your NDA. Prominently identify the submission with the following wording in bold capital letters at the top of the first page of the submission, as appropriate:

Required Postmarketing Protocol Under 505(o), Required Postmarketing Final Report Under 505(o), Required Postmarketing Correspondence Under 505(o).

Section 505(o)(3)(E)(ii) of the FDCA requires you to report periodically on the status of any study or clinical trial required under this section. This section also requires you to periodically report to FDA on the status of any study or clinical trial otherwise undertaken to investigate a safety issue. Section 506B of the FDCA, as well as 21 CFR 314.81(b)(2)(vii) requires you to report annually on the status of any postmarketing commitments or required studies or clinical trials.

FDA will consider the submission of your annual report under section 506B and 21 CFR 314.81(b)(2)(vii) to satisfy the periodic reporting requirement under section 505(o)(3)(E)(ii) provided that you include the elements listed in 505(o) and 21 CFR 314.81(b)(2)(vii). We remind you that to comply with 505(o), your annual report must also include a report on the status of any study or clinical trial otherwise undertaken to investigate a safety issue. Failure to submit an annual report for studies or clinical trials required under 505(o) on the date required will be considered a violation of FDCA section 505(o)(3)(E)(ii) and could result in enforcement action.

POSTMARKETING COMMITMENTS SUBJECT TO REPORTING REQUIREMENTS UNDER SECTION 506B

We remind you of your postmarketing commitment:

⁴ See the guidance for Industry *Postmarketing Studies and Clinical Trials—Implementation of Section 505(o)(3) of the Federal Food, Drug, and Cosmetic Act (October 2019)*.

<https://www.fda.gov/RegulatoryInformation/Guidances/default.htm>.

- 3973-3 Conduct adequate analytical and clinical validation testing to establish an in-vitro diagnostic device developed to accurately and reliably detect patients with variants in the *POMC*, *PCSK1*, and *LEPR* genes that may benefit from setmelanotide therapy. The clinical validation should be supported by a clinical bridging study comparing the in-vitro diagnostic device and the clinical trial enrollment assays.

The timetable you submitted on November 23, 2020, states that you will conduct this study according to the following schedule:

Final Report Submission: November 2020

Submit clinical protocols to your IND 112595 for this product. Submit nonclinical and chemistry, manufacturing, and controls protocols and all postmarketing final reports to this NDA. In addition, under 21 CFR 314.81(b)(2)(vii) and 314.81(b)(2)(viii) you should include a status summary of each commitment in your annual report to this NDA. The status summary should include expected summary completion and final report submission dates, any changes in plans since the last annual report, and, for clinical studies/trials, number of patients entered into each study/trial. All submissions, including supplements, relating to these postmarketing commitments should be prominently labeled "Postmarketing Commitment Protocol," "Postmarketing Commitment Final Report," or "Postmarketing Commitment Correspondence."

POSTMARKETING COMMITMENTS NOT SUBJECT TO THE REPORTING REQUIREMENTS UNDER SECTION 506B

We remind you of your postmarketing commitment:

- 3973-4 Improve the performance and repeatability of the setmelanotide confirmatory ADA assay to ensure that the confirmatory ADA assay can reliably test for the presence of ADA in clinical samples.

The timetable you submitted on November 23, 2020, states that you will conduct this study according to the following schedule:

Study Completion: July 2021
Final Report Submission: September 2021

Submit clinical protocols to your IND 112595 for this product. Submit nonclinical and chemistry, manufacturing, and controls protocols and all postmarketing final reports to this NDA. In addition, under 21 CFR 314.81(b)(2)(vii) and 314.81(b)(2)(viii) you should include a status summary of each commitment in your annual report to this NDA. The status summary should include expected summary completion and final report submission dates, any changes in plans since the last annual report, and, for clinical studies/trials, number of patients entered into each study/trial. All submissions, including

supplements, relating to these postmarketing commitments should be prominently labeled “**Postmarketing Commitment Protocol**,” “**Postmarketing Commitment Final Report**,” or “**Postmarketing Commitment Correspondence**.”

PROMOTIONAL MATERIALS

You may request advisory comments on proposed introductory advertising and promotional labeling. For information about submitting promotional materials, see the final guidance for industry *Providing Regulatory Submissions in Electronic and Non-Electronic Format—Promotional Labeling and Advertising Materials for Human Prescription Drugs*.⁵

As required under 21 CFR 314.81(b)(3)(i), you must submit final promotional materials, and the Prescribing Information, at the time of initial dissemination or publication, accompanied by a Form FDA 2253. Form FDA 2253 is available at FDA.gov.⁶ Information and Instructions for completing the form can be found at FDA.gov.⁷

REPORTING REQUIREMENTS

We remind you that you must comply with reporting requirements for an approved NDA (21 CFR 314.80 and 314.81).

POST-APPROVAL FEEDBACK MEETING

New molecular entities and new biological products qualify for a post-approval feedback meeting. Such meetings are used to discuss the quality of the application and to evaluate the communication process during drug development and marketing application review. The purpose is to learn from successful aspects of the review process and to identify areas that could benefit from improvement. If you would like to have such a meeting with us, call the Regulatory Project Manager for this application.

⁵ For the most recent version of a guidance, check the FDA guidance web page at <https://www.fda.gov/media/128163/download>.

⁶ <http://www.fda.gov/downloads/AboutFDA/ReportsManualsForms/Forms/UCM083570.pdf>

⁷ <http://www.fda.gov/downloads/AboutFDA/ReportsManualsForms/Forms/UCM375154.pdf>

If you have any questions, call Arati Kamath, Regulatory Project Manager, at (301) 796-3159.

Sincerely,

{See appended electronic signature page}

Ellis Unger, MD

Director

Office of Cardiology, Hematology, Endocrinology,
and Nephrology (OCHEN)

Center for Drug Evaluation and Research

ENCLOSURES:

- Content of Labeling
 - Prescribing Information
 - Patient Package Insert
 - Instructions for Use
- Carton and Container Labeling

This is a representation of an electronic record that was signed electronically. Following this are manifestations of any and all electronic signatures for this electronic record.

/s/

ELLIS F UNGER
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