



NDA 22561

**NDA APPROVAL**

EMD Serono, Inc.  
Attention: Tammy Sarnelli, MPA  
Head of Global Regulatory Affairs-Immunology and Neurology  
45A Middlesex Turnpike  
Billerica, MA 01821

Dear Ms. Sarnelli:

Please refer to your New Drug Application (NDA) dated May 30, 2018, received May 31, 2018, and your amendments, submitted under section 505(b)(1) Federal Food, Drug, and Cosmetic Act (FDCA) for Mavenclad (cladribine) tablets, 10 mg.

We also refer to your NDA originally submitted September 30, 2009; to our Complete Response letter dated February 28, 2011; and to your NDA withdrawal request dated August 19, 2011. Your NDA submission dated May 31, 2018, is considered a “resubmission after withdrawal” and responds to all of the items listed in our February 28, 2011, Complete Response letter.

This NDA provides for the use of Mavenclad (cladribine) tablets, 10 mg, for the treatment of relapsing forms of multiple sclerosis (MS), to include relapsing-remitting disease and active secondary progressive disease, in adults.

**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 text.

**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 <http://www.fda.gov/ForIndustry/DataStandards/StructuredProductLabeling/default.htm>. Content of labeling must be identical to the enclosed labeling (text for the Prescribing Information and Medication Guide) as well as 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*, available at <http://www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/Guidances/UCM072392.pdf>

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 carton and container labeling submitted on January 30, 2019, as soon as they are available, but no more than 30 days after they are printed. Please submit these labeling electronically according to the guidance for industry titled *Providing Regulatory Submissions in Electronic Format — Certain Human Pharmaceutical Product Applications and Related Submissions Using the eCTD Specifications (April 2018, Revision 5)*. For administrative purposes, designate this submission “**Final Printed Carton and Container Labeling for approved NDA 22561.**” Approval of this submission by FDA is not required before the labeling is used.

## **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 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.

We are waiving the pediatric study requirement for this application because there is evidence strongly suggesting that the drug product would be unsafe in all pediatric age groups. The long-term risk of malignancies in adult subjects treated with cladribine is an unacceptable risk in pediatric patients.

## **POSTMARKETING REQUIREMENTS UNDER 505(o)**

Section 505(o)(3) of the 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 assess a known serious risk of malignancy or assess a known serious risk of teratogenicity.

Furthermore, the new pharmacovigilance system that FDA is required to establish under section 505(k)(3) of the FDCA will not be sufficient to assess these serious risks.

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

- 3592-1 Conduct an observational study to assess the long-term risk of malignancy for Mavenclad compared to other therapies used in the treatment of adults with relapsing forms of multiple sclerosis. Describe and justify the choice of appropriate comparator population(s) and estimated background rate(s) relative to

cladribine-exposed patients; clearly define the primary comparator population. Design the study around a testable hypothesis to assess, with sufficient sample size and power, a clinically meaningful increase in malignancy risk above the comparator background rate(s), with a pre-specified statistical analysis method. Specify concise case definitions and validation algorithms. For the Mavenclad-exposed and comparator(s) cohorts, clearly define the study drug initiation period and any exclusion and inclusion criteria. Enroll patients over an initial 4-year period and follow for a minimum of 8 years from the time of enrollment.

The timetable you submitted on March 19, 2019, states that you will conduct this study according to the following schedule:

Draft Protocol Submission: 08/2019  
Final Protocol Submission: 09/2020  
Study Completion: 02/2033  
Final Report Submission: 02/2034

3592-2 Establish a worldwide Pregnancy Surveillance Program to collect and analyze information for a minimum of 10 years on pregnancy complications and birth outcomes in women exposed to Mavenclad during pregnancy. Provide a complete protocol which includes details regarding how you plan to encourage patients and providers to report pregnancy exposures (e.g., telephone contact number and/or website in prescribing information), measures to ensure complete data capture regarding pregnancy outcomes, and any adverse effects in offspring and plans for comprehensive data analysis and yearly reporting.

The timetable you submitted on March 21, 2019, states that you will conduct this study according to the following schedule:

Draft Protocol Submission: 08/2019  
Final Protocol Submission: 09/2020  
Annual Interim Report: 09/2021  
09/2022  
09/2023  
09/2024  
09/2025  
09/2026  
09/2027  
09/2028  
09/2029  
09/2030  
Study Completion: 02/2031  
Final Report Submission: 02/2032

Finally, we have determined that only a clinical trial (rather than a nonclinical or observational study) will be sufficient to identify an unexpected serious risk of a drug-drug interaction between Mavenclad and oral contraceptives.

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

- 3592-3      Conduct a clinical drug-drug interaction trial to evaluate the effect of cladribine on the pharmacokinetics (PK) of oral contraceptives. Include an evaluation of the effect on the components ethinyl estradiol (EE) and norelgestromin (NGMN).

The timetable you submitted on March 19, 2019, states that you will conduct this trial according to the following schedule:

Draft Protocol Submission: 06/2019  
Final Protocol Submission: 06/2020  
Trial Completion: 08/2023  
Final Report Submission: 08/2024

Submit clinical protocols to your IND 74634, with a cross-reference letter to this NDA. Submit nonclinical and chemistry, manufacturing, and controls protocols and all final reports 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).**

Submission of the protocols for required postmarketing observational studies to your IND is for purposes of administrative tracking only. These studies do not constitute clinical investigations pursuant to 21 CFR 312.3(b) and therefore are not subject to the IND requirements under 21 CFR part 312 or FDA's regulations under 21 CFR parts 50 (Protection of Human Subjects) and 56 (Institutional Review Boards).

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.

## **REQUESTED PHARMACOVIGILANCE**

We request that you perform postmarketing surveillance for malignancies, opportunistic infections, graft-versus-host disease with blood transfusion, liver injury, serious skin reactions, and acute cardiac failure after exposure to Mavenclad. We request that you provide expedited reports directly to the Division of Neurology Products. Include comprehensive summaries and analyses of these events quarterly as part of your required postmarketing safety reports [e.g., periodic safety update reports (PSURs)].

## **PROMOTIONAL MATERIALS**

You may request advisory comments on proposed introductory advertising and promotional labeling. To do so, submit, in triplicate, a cover letter requesting advisory comments, the proposed materials in draft or mock-up form with annotated references, and the Prescribing Information, Medication Guide, and Patient Package Insert (as applicable) to:

OPDP Regulatory Project Manager  
Food and Drug Administration  
Center for Drug Evaluation and Research  
Office of Prescription Drug Promotion  
5901-B Ammendale Road  
Beltsville, MD 20705-1266

Alternatively, you may submit a request for advisory comments electronically in eCTD format. For more information about submitting promotional materials in eCTD format, see the draft Guidance for Industry (available at:

<http://www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/Guidances/UCM443702.pdf> ).

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

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

Information and Instructions for completing the form can be found at

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

more information about submission of promotional materials to the Office of Prescription Drug Promotion (OPDP), see <http://www.fda.gov/AboutFDA/CentersOffices/CDER/ucm090142.htm>.

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