

Public Assessment Report

Scientific discussion

Apremilast STADA Arzneimittel AG **(apremilast)**

SE/H/2366/01-02/DC

This module reflects the scientific discussion for the approval of Apremilast STADA Arzneimittel AG. The procedure was finalised on 2024-09-25. For information on changes after this date please refer to the module ‘Update’.

I. INTRODUCTION

Based on the review of the quality, safety and efficacy data, a marketing authorisation has been granted for Apremilast STADA Arzneimittel AG, 30 mg, 10 mg + 20 mg + 30 mg, Film-coated tablet.

The active substance is apremilast. A comprehensive description of the indication and posology is given in the SmPC.

For recommendations to the marketing authorisation not falling under Article 21a/22a/22 of Directive 2001/83/EC and conditions to the marketing authorisation pursuant to Article 21a/22a/ 22 of Directive 2001/83/EC to the marketing authorisation, please see section VI.

The application for Apremilast STADA Arzneimittel AG, 30 mg, 10 mg + 20 mg + 30 mg, film-coated tablet, is a generic application submitted according to Article 10(1) of Directive 2001/83/EC. The applicant applies through the Decentralised Procedure with Sweden acting as reference member state (RMS) and the following as concerned member states (CMS):
SE/H/2366/01-02/DC: DE

The reference medicinal product chosen for the purposes of establishing the expiry of the data protection period is Otezla, 30 mg, film-coated tablet authorised in the EU since 2015, with Amgen Europe BV. as marketing authorisation holder.

The reference product used in the bioequivalence study is Otezla, 30 mg, film-coated tablet from DK with Amgen Europe BV. as marketing authorisation holder.

Potential similarity with orphan medicinal products

According to the application form and a check of the Community Register of orphan medicinal products there is no medicinal product designated as an orphan medicinal product for a condition relating to the indication proposed in this application.

II. QUALITY ASPECTS

II.1 Drug Substance

The structure of the drug substance has been adequately proven and its physico-chemical properties are sufficiently described.

The manufacture of the drug substance has been adequately described and satisfactory specifications have been provided for starting materials, reagents and solvents.

The drug substance specification includes relevant tests and the limits for impurities and degradation products have been justified. The analytical methods applied are suitably described and validated.

Stability studies confirm the retest period.

II.2 Medicinal Product

The medicinal product is formulated using excipients listed in section 6.1 in the Summary of Product Characteristics.

The manufacturing process has been sufficiently described and critical steps identified.

The tests and limits in the specification are considered appropriate to control the quality of the finished product in relation to its intended purpose.

Stability studies have been performed and data presented support the shelf life and special precautions for storage claimed in the Summary of Product Characteristics, sections 6.3 and 6.4.

III. NON-CLINICAL ASPECTS

Pharmacology/Pharmacokinetics/Toxicology

Pharmacodynamic, pharmacokinetic and toxicological properties of apremilast are well known. As apremilast is a widely used, well-known active substance, no further studies are required and the applicant provides none. Overview based on literature review is, thus, appropriate.

Environmental Risk Assessment (ERA)

Since Apremilast STADA Arzneimittel AG is a generic product, it will not lead to an increased exposure to the environment. An environmental risk assessment is therefore not deemed necessary.

There are no objections to approval of Apremilast STADA Arzneimittel AG from a non-clinical point of view.

IV. CLINICAL ASPECTS

Pharmacokinetics

To support the marketing authorisation application the applicant has conducted one bioequivalence study comparing Apremilast STADA Arzneimittel AG, 30 mg, film-coated tablet with the reference product Otezla, 30 mg, film-coated tablet.

Pharmacokinetic properties of the active substance

Absorption: Apremilast has an oral bioavailability of approximately 73%. Following an oral dose of apremilast maximal plasma concentrations occur at approximately 2.5 hours.

The pharmacokinetics of apremilast is not affected by food, and therefore there are no restrictions with respect to food in the SmPC of the originator.

Linearity: The pharmacokinetics of apremilast is linear within the dose range 10-100 mg.

Elimination: The terminal half-life is approximately 9 hours.

Study CT- 38006-20-0209 – 30 MG, FASTING

Methods

This was a single-dose, two-way crossover study conducted in 30 healthy volunteers, comparing Apremilast STADA Arzneimittel AG, 30 mg, film-coated tablet with Otezla, 30 mg, film-coated tablet under fasting conditions. Blood samples for concentration analysis were collected pre-dose and up to 36 hours post-dose. Plasma concentrations of apremilast were determined with an LC-MS/MS method. Analysis of variance (ANOVA) was performed on the ln-transformed data for AUC_{0-t} and C_{max}. The study was conducted between 2020-05-26 and 2020-07-13.

Results

The results from the pharmacokinetic and statistical analysis are presented in Table 1 below.

Table 1. Pharmacokinetic parameters (non-transformed values; arithmetic mean $\pm$ SD, $t_{\max}$ median, range) for apremilast, n=27.

Treatment	AUC_{0-t} ng*h/ml	C_{max} ng/ml	t_{max} h
Test	3907.59 ($\pm$1282.89)	429.22 ($\pm$103.44)	3.00 (0.67-5.00)
Reference	3480.30 ($\pm$1230.67)	384.93 ($\pm$104.60)	2.00 (1.00-5.00)
*Ratio (90% CI)	113.10 (108.52-117.87)	112.15 (105.40-119.33)	-
AUC _{0-t} area under the plasma concentration-time curve from time zero to t hours C _{max} maximum plasma concentration t _{max} time for maximum plasma concentration			

*calculated based on ln-transformed data

For AUC_{0-t} and C_{max} the 90% confidence interval for the ratio of the test and reference products fell within the conventional acceptance range of 80.00-125.00%.

A biowaiver was sought for the additional strengths of 10 mg and 20 mg.

Discussion and overall conclusion

The bioequivalence study and its statistical evaluation were in accordance with accepted standards for bioequivalence testing, as stated in the Guideline on the investigation of bioequivalence (CPMP/EWP/QWP/1401/98 Rev. 1/Corr). The bioanalytical methods were adequately validated.

Based on the submitted bioequivalence study, Apremilast STADA Arzneimittel AG, 30 mg, film-coated tablet is considered bioequivalent with Otezla, 30 mg, film-coated tablet.

From a pharmacokinetic point of view, it is sufficient to establish bioequivalence with only one strength as the pharmacokinetics of apremilast is linear between 10 and 100 mg. For drugs with linear pharmacokinetics the bioequivalence study should in general be conducted at the highest strength. The highest strength has been studied which is in accordance with guideline recommendations. Thus, absence of studies with the additional strengths is acceptable from a pharmacokinetic point of view.

Pharmacodynamics/Clinical efficacy/Clinical safety

No new studies on pharmacodynamics, clinical efficacy or clinical safety have been submitted. Provided that bioequivalence with the originator product is demonstrated, additional data is not necessary.

Risk Management Plan

The Applicant has submitted a risk management plan, in accordance with the requirements of Directive 2001/83/EC as amended, describing the pharmacovigilance activities and interventions designed to identify, characterise, prevent or minimise risks relating to Apremilast STADA Arzneimittel AG.

Part II. Safety specification

The proposed Summary of safety concerns (RMP Part II: Module SVIII) is included below. It is aligned with the safety specification of the reference product and is (thus) considered appropriate.

Summary of safety concerns	
Important identified risks	• Serious events of hypersensitivity • Suicidality • Serious events of depression
Important potential risks	• Vasculitis • Malignancies • Serious events of anxiety and nervousness • Serious infections including opportunistic infections and transmission of infections through live vaccines • Major adverse cardiac event (MACE) and tachyarrhythmia • Prenatal embryo-fetal loss and delayed fetal development (reduced ossification and fetal weight) in pregnant women exposed to apremilast
Missing information	• Long-term safety

Part III. Pharmacovigilance Plan

Routine pharmacovigilance is suggested, and no additional pharmacovigilance activities are proposed by the applicant, which is endorsed.

Of note, according to the agreed RMP of the reference product *non-conditioned* event-specific follow-up questionnaires are used (or have been used) for some of the important identified/potential risks. Also, a category 3 post-authorisation surveillance study (PASS) to evaluate the long-term safety of apremilast is still ongoing. However, no follow-up questionnaire or surveillance study is mentioned in the RMP submitted in the application for Apremilast STADA Arzneimittel AG, which is considered acceptable for the generic applications.

Part V. Risk minimisation measures

The Applicant concludes that the safety information in the proposed product information is aligned to the reference medicinal product; no additional risk minimisation activities are proposed, which is endorsed.

Part VI. Summary of the RMP

The proposed RMP for Apremilast STADA and others is adequately summarised by the Applicant.

Conclusion of the RMP assessment

The submitted Risk Management Plan - version 1.1, dated 22 March 2024 - is considered acceptable.

The MAH shall perform the required pharmacovigilance activities and interventions detailed in the agreed RMP presented in Module 1.8.2 of the Marketing Authorisation and any agreed subsequent updates of the RMP.

An updated RMP should be submitted:

- At the request of the RMS;
- Whenever the risk management system is modified, especially as the result of new information being received that may lead to a significant change to the benefit/risk profile or as the result of an important (pharmacovigilance or risk minimisation) milestone being reached.

If the dates for submission of a PSUR and the update of a RMP coincide, they can be submitted at the same time, but via different procedures.

V. USER CONSULTATION

A user consultation with target patient groups on the package information leaflet (PL) has been performed on the basis of a bridging report making reference to Otezla film-coated tablets (content) and Pirfenidon film-coated tablets (layout).

The bridging report submitted by the applicant has been found acceptable.

VI. OVERALL CONCLUSION, BENEFIT/RISK ASSESSMENT AND RECOMMENDATION

The quality of the generic product Apremilast STADA Arzneimittel AG is found adequate. There are no objections to approval of Apremilast STADA Arzneimittel AG from a non-clinical and clinical point of view. Bioequivalence between the test and reference product has been adequately demonstrated. The product information is acceptable. The benefit/risk is considered positive, and the application is therefore recommended for approval.

List of recommendations not falling under Article 21a/22a/22 of Directive 2001/83/EC in case of a positive benefit risk assessment

N/A

List of conditions pursuant to Article 21a/22a or 22 of Directive 2001/83/EC

N/A

VII. APPROVAL

The decentralised procedure for Apremilast STADA Arzneimittel AG, 30 mg, 10 mg + 20 mg + 30 mg, Film-coated tablet was positively finalised on 2024-09-25.

Public Assessment Report – Update

Procedure number*	Scope	Product Information affected (Yes/No)	Date of end of procedure	Approval/non approval	Summary/Justification for refuse

*Only procedure qualifier, chronological number and grouping qualifier (when applicable)