

Public Assessment Report

Scientific discussion

Nintedanib Onkogen 100 mg and 150 mg, soft capsules (nintedanib esilate)

NL/H/5781/001-002/DC

Date: 10 December 2025

This module reflects the scientific discussion for the approval of Nintedanib Onkogen 100 mg and 150 mg, soft capsules. The procedure was finalised on 26 September 2024. For information on changes after this date please refer to the 'steps taken after finalisation' at the end of this PAR.

List of abbreviations

ASMF	Active Substance Master File
CEP	Certificate of Suitability to the monographs of the European Pharmacopoeia
CHMP	Committee for Medicinal Products for Human Use
CMD(h)	Coordination group for Mutual recognition and Decentralised procedure for human medicinal products
CMS	Concerned Member State
EDMF	European Drug Master File
EDQM	European Directorate for the Quality of Medicines
EEA	European Economic Area
EMA	European Medicines Agency
ERA	Environmental Risk Assessment
ICH	International Conference of Harmonisation
MAH	Marketing Authorisation Holder
Ph.Eur.	European Pharmacopoeia
PL	Package Leaflet
RH	Relative Humidity
RMP	Risk Management Plan
RMS	Reference Member State
SmPC	Summary of Product Characteristics
SSc-ILD	Systemic Sclerosis associated Interstitial Lung Disease
TSE	Transmissible Spongiform Encephalopathy

I. INTRODUCTION

Based on the review of the quality, safety and efficacy data, the Member States have granted a marketing authorisation for Nintedanib Onkogen 100 mg and 150 mg, soft capsules from Onkogen Kft.

The product is indicated for:

- in adults for the treatment of idiopathic pulmonary fibrosis (IPF)
- in adults for the treatment of other chronic fibrosing interstitial lung diseases (ILDs) with a progressive phenotype
- in adults for the treatment of systemic sclerosis associated interstitial lung disease (SSc-ILD)

A comprehensive description of the up-to-date indications and posology is given in the SmPC.

The marketing authorisation has been granted pursuant to Article 10(1) of Directive 2001/83/EC, which concerns a generic application.

In this decentralised procedure, essential similarity is proven between the new product and the innovator product Ofev 100 mg and 150 mg, soft capsules, which has been registered in the EEA via a centralised procedure (EU/1/14/979) since 15 January 2015.

The concerned member state (CMS) involved in this procedure was Hungary. In a repeat use procedure finalised on 24 July 2025, Poland and Spain were added as concerned member states.

II. QUALITY ASPECTS

II.1 Introduction

Nintedanib Onkogen 100 mg and 150 mg are soft capsules. The two strengths can be distinguished by colour and size and are as follows:

Nintedanib Onkogen 100 mg

Peach, opaque and oblong soft capsules with a size of approximately of 15.3 x 6.1 mm, contains as active substance 100 mg of nintedanib, as 120,4 mg of nintedanib esilate.

Nintedanib 150 mg

Brown, opaque and oblong soft capsules with a size of approximately of 17.0 x 7.0 mm, contains as active substance 150 mg of nintedanib, as 180,6 mg of nintedanib esilate.

The excipients are:

Capsule fill - macrogol 400

Capsule shell - gelatine (E441), sorbitol (liquid, partially dehydrated) (E420), glycerol (E422), titanium dioxide (E171), ferric oxide red (E172) and ferric oxide yellow (E172).

The capsule content of the two capsule strengths is dose proportional.

The soft capsules are packed in polyethylene terephthalate/aluminium – polyamide/aluminium/polyvinyl chloride (PET/Alu - Polyamide/Alu/PVC) blisters.

II.2 Drug Substance

The drug substance is nintedanib esilate, an established substance not described in the European Pharmacopoeia (Ph.Eur.). The drug substance is a solid, bright and yellow powder and practically insoluble in water. Nintedanib is an achiral molecule and shows a Z-isomer. For this product, the same polymorphic form is consistently produced.

The Active Substance Master File (ASMF) procedure is used for the active substance. The main objective of the ASMF procedure, commonly known as the European Drug Master File (EDMF) procedure, is to allow valuable confidential intellectual property or 'know-how' of the manufacturer of the active substance (ASM) to be protected, while at the same time allowing the applicant or marketing authorisation holder (MAH) to take full responsibility for the medicinal product, the quality and quality control of the active substance. Competent Authorities/EMA thus have access to the complete information that is necessary to evaluate the suitability of the use of the active substance in the medicinal product.

Manufacturing process

The manufacturing process consists of two branches that converge at the level of the intermediate. The introduction of the starting materials in the first branch of the synthesis is followed by chemical transformation steps with one isolated intermediate. The introduction of the starting materials in the second branch of the synthesis is followed by chemical transformation steps respectively and one isolated intermediate. The formation of the intermediate is subsequently followed by a purification step, salt formation step and milling step. No class 1 organic solvents are used. Adequate specifications have been adopted for starting materials, solvents and reagents. The active substance has been adequately characterised and the manufacturing process is described in sufficient detail.

Quality control of drug substance

The active substance specification is considered adequate to control the quality and is acceptable in view of the route of synthesis and the various European guidelines. Batch analytical data demonstrating compliance with this specification have been provided for three batches.

Stability of drug substance

Stability data on the active substance have been provided for three production batches in accordance with applicable European guidelines. Based on the data submitted, a retest period could be granted of 60 months when stored under the stated conditions.

II.3 Medicinal Product

Pharmaceutical development

The product is an established pharmaceutical form and its development is adequately described in accordance with the relevant European guidelines.

The development of the product has been described, the choice of excipients is justified and their functions explained. The choices of the packaging and manufacturing process are justified. The pharmaceutical development of the product has been adequately performed.

Manufacturing process

The soft capsules are manufactured using six major steps: gelatin mass preparation, fill suspension preparation, encapsulation, drying, visual inspection and packaging. The manufacturing process has been validated according to relevant European guidelines. Process validation data on the product have been presented for three production batches for each strength in accordance with the relevant European guidelines.

Control of excipients

The excipients, except for the iron oxides and a temporary excipient, comply with the Ph.Eur. requirements. These specifications are acceptable. Furthermore, the iron oxides comply with the purity criteria as laid down in EU Regulation 231/2012. In addition, the specification, analytical procedures, validation of analytical procedures and justification of specification of a temporary excipient are acceptable.

Quality control of drug product

The finished product specifications are adequate to control the relevant parameters for the dosage form. The specification includes tests for appearance, identification, leakage evidence, capsule hardness, dissolution, assay, uniformity of dosage units, related substances, capsule water content and microbiological control. Limits in the specification have been justified and are considered appropriate for adequate quality control of the product. An adequate nitrosamines risk evaluation report has been provided. No risk for presence of nitrosamines in the drug product was identified.

Satisfactory validation data for the analytical methods have been provided.

Batch analytical data from three full scale batches for each strength from the proposed production site have been provided, demonstrating compliance with the specification.

Stability of drug product

Stability data on the product have been provided for three production batches for each strength stored at 25°C/60% RH (36 months), 30°C/65% RH (12 months) and 40°C/75% RH (6 months). The stability was tested in accordance with applicable European guidelines. Photostability studies were performed in accordance with ICH recommendations. All results stayed within the proposed acceptance criteria. On basis of the data submitted, a shelf life was granted of 36 months when not stored above 25°C and stored in the original package in order to protect from moisture.

Specific measures concerning the prevention of the transmission of animal spongiform encephalopathies

Scientific data and/or certificates of suitability issued by the EDQM for gelatine have been provided and compliance with the Note for Guidance on Minimising the Risk of Transmitting Animal Spongiform Encephalopathy Agents via medicinal products has been satisfactorily demonstrated.

II.4 Discussion on chemical, pharmaceutical and biological aspects

Based on the submitted dossier, the member states consider that Nintedanib Onkogen has a proven chemical-pharmaceutical quality. Sufficient controls have been laid down for the active substance and finished product.

No post-approval commitments were made.

III. NON-CLINICAL ASPECTS

III.1 Ecotoxicity/environmental risk assessment (ERA)

Since Nintedanib Onkogen is intended for generic substitution, this will not lead to an increased exposure to the environment. An environmental risk assessment was therefore not deemed necessary.

III.2 Discussion on the non-clinical aspects

This product is a generic formulation of Ofev which is available on the European market. Reference was made to the preclinical data obtained with the innovator product. A non-clinical overview on the pharmacology, pharmacokinetics and toxicology has been provided, which was based on up-to-date and adequate scientific literature. The overview justifies why there is no need to generate additional non-clinical pharmacology, pharmacokinetics and toxicology data. Therefore, the member states agreed that no further non-clinical studies are required.

IV. CLINICAL ASPECTS

IV.1 Introduction

Nintedanib is a well-known active substance with established efficacy and tolerability. A clinical overview has been provided, which is based on scientific literature. The member states agreed that no further clinical studies are required, besides one bioequivalence study, which is discussed below.

IV.2 Pharmacokinetics

The MAH conducted a bioequivalence study in which the pharmacokinetic profile of the test product Nintedanib Onkogen 150 mg, soft capsules (Onkogen Kft., Hungary) was compared with the pharmacokinetic profile of the reference product Ofev 150 mg, soft capsules (Boehringer Ingelheim International GmbH, Germany).

The choice of the reference product in the bioequivalence study has been justified by comparison of dissolution study results and composition. The formula and preparation of the bioequivalence batch was identical to the formula proposed for marketing.

Biowaiver

The following general requirements, according to the EMA Bioequivalence guideline are met for a waiver of the 100 mg strength:

- a. the 100 mg and 150 mg capsules are manufactured by the same manufacturing process,
- b. the qualitative composition of the 100 mg and 150 mg strengths is the same,
- c. the composition of the strengths are quantitatively proportional, i.e. the ratio between the amount of each excipient to the amount of active substance(s) is the same for all strengths (for immediate release products coating components, capsule shell, colour agents and flavours are not required to follow this rule),
- d. appropriate *in vitro* dissolution data should confirm the adequacy of waiving additional *in vivo* bioequivalence testing.

The dissolution was investigated according to the EMA Bioequivalence guideline (at pH 1.2, value). Similarity of *in vitro* dissolution has been demonstrated at all conditions. The calculated f_2 similarity factor values were within criteria (>50%). An f_2 value between 50 and 100% suggests that the two dissolution profiles are similar.

The lower limit of the 90% confidence interval of the expected- f_2 calculated by bootstrapping is applied for the comparison of the dissolution profiles in pH 4.5 and pH 6.8. The similarity of the dissolution profiles can be concluded. In addition, although similarity between the comparative dissolution profiles is observed with bootstrapping in pH 6.8, mathematical evaluation was not considered necessary due to the drug release of < 15% in 60 minutes. The conducted bootstrap methodology is acceptable according to the EMA guideline on the investigation of bioequivalence and the EMA Q&A 3.13.

Bioequivalence studies

Design

A single-dose, randomised, two-period, two-treatment, two-sequence, crossover, balanced, open label bioequivalence study was carried out under fed conditions in 120 healthy male subjects, aged 19-44 years old, both inclusive. Each subject received a single dose (150 mg) of one of the two nintedanib formulations. After an overnight fasting of at least 8 hours the subjects were served a standardised high-fat and high-calorie breakfast of 926 calories. The tablet was orally administered with 240 ml water 30 minutes after breakfast was served. There were two dosing periods, separated by a washout period of ten days.

Blood samples were collected pre-dose and at 0.5, 1, 1.5, 2, 2.5, 3, 3.33, 3.67, 4, 4.33, 4.67, 5, 5.33, 5.67, 6, 6.5, 7, 8, 10, 12, 16, 24, 36, 48 and 72 hours after administration of the products.

The design of the study is acceptable.

Nintedanib must be taken with reference to food intake. The capsules should be taken with food, swallowed whole with water, and should not be chewed. The capsule should not be opened or crushed. Therefore, a food interaction study is necessary. The bioequivalence study under fed conditions is in accordance with CPMP/EWP/QWP/1401/98 Note for Guidance on the investigation of bioavailability and bioequivalence.

Analytical/statistical methods

The analytical method has been adequately validated and is considered acceptable for analysis of the plasma samples. The methods used in this study for the pharmacokinetic calculations and statistical evaluation are considered acceptable.

Results

Out of the 120 subjects, one subject did not report for subsequent period of the study, five subjects were withdrawn due to protocol violation (were found positive for drugs of abuse), one subject withdrew for personal reasons and two subjects were withdrawn due to adverse events (vomiting). The remaining 111 subjects were eligible for pharmacokinetic analysis.

Table 1. Pharmacokinetic parameters (non-transformed values; arithmetic mean \pm SD, t_{max} (median, range)) of nintedanib, 150 mg under fed conditions.

Treatment N=111	AUC _{0-t} (ng.h/ml)	AUC _{0-∞} (ng.h/ml)	C _{max} (ng/ml)	t _{max} (h)
Test	324.63 \pm 133.84	341 \pm 142.19	39.04 \pm 14.62	4.33 (1.50 – 6.00)
Reference	329.84 \pm 131.08	346.87 \pm 142.35	39.54 \pm 14	4.33 (1.50 – 7.00)
*Ratio (90% CI)	0.97 (0.93 – 1.01)	-	0.98 (0.94 – 1.02)	-
AUC _{0-∞}	Area under the plasma concentration-time curve from time zero to infinity			
AUC _{0-t}	Area under the plasma concentration-time curve from time zero to the last measurable plasma concentration			
C _{max}	Maximum plasma concentration			
t _{max}	Time after administration when maximum plasma concentration occurs			
CI	Confidence interval			

**ln-transformed values*

Conclusion on bioequivalence study:

The 90% confidence intervals calculated for AUC_{0-t}, AUC_{0-∞} and C_{max} are within the bioequivalence acceptance range of 0.80 – 1.25. Based on the submitted bioequivalence study Nintedanib Onkogen 150 mg is considered bioequivalent with Ofev 150 mg.

The results of the study with 150 mg formulation can be extrapolated to the other strength 100 mg, according to conditions in Guideline on the Investigation of Bioequivalence CPMP/EWP/QWP/1401/98 Rev. 1/Corr*, section 4.1.6.

The MEB has been assured that the bioequivalence study has been conducted in accordance with acceptable standards of Good Clinical Practice (GCP, see Directive 2005/28/EC) and Good Laboratory Practice (GLP, see Directives 2004/9/EC and 2004/10/EC).

IV.3 Risk Management Plan

The MAH 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 Nintedanib Onkogen. At the time of approval, the most recent version of the RMP was version 0.2 dated 24 February 2023.

Table 2. Summary table of safety concerns as approved in RMP

Important identified risks	<ul style="list-style-type: none"> • Drug-induced liver injury (DILI) • Bleeding • Myocardial infarction
Important potential risks	<ul style="list-style-type: none"> • Venous thromboembolism • Arterial thromboembolism excluding myocardial infarction • Perforation • Hepatic failure
Missing information	<ul style="list-style-type: none"> • Treatment of SSc-ILD patients with pulmonary hypertension

The member states agreed that routine pharmacovigilance activities and routine risk minimisation measures are sufficient for the risks and areas of missing information.

IV.4 Discussion on the clinical aspects

For this authorisation, reference is made to the clinical studies and experience with the innovator product Ofev. No new clinical studies were conducted. The MAH demonstrated through a bioequivalence study that the pharmacokinetic profile of the product is similar to the pharmacokinetic profile of this reference product. Risk management is adequately addressed. This generic medicinal product can be used instead of the reference product.

V. USER CONSULTATION

The package leaflet (PL) has been evaluated via a user consultation study in accordance with the requirements of Articles 59(3) and 61(1) of Directive 2001/83/EC. The language used for the purpose of user testing the PL was English.

The test consisted of: a pilot test with four participants, followed by two rounds with ten participants each. The questions covered the following areas sufficiently: traceability, comprehensibility and applicability.

The results show that the PL meets the criteria for readability as set out in the Guideline on the readability of the label and package leaflet of medicinal products for human use.

VI. OVERALL CONCLUSION, BENEFIT/RISK ASSESSMENT AND RECOMMENDATION

Nintedanib Onkogen 100 mg and 150 mg, soft capsules have a proven chemical-pharmaceutical quality and are generic forms of Ofev 100 mg and 150 mg, soft capsules. Ofev is a well-known medicinal product with an established favourable efficacy and safety profile.

Bioequivalence has been shown to be in compliance with the requirements of European guidance documents.

The Board followed the advice of the assessors.

There was no discussion in the CMD(h). Agreement between member states was reached during a written procedure. The member states, on the basis of the data submitted, considered that essential similarity has been demonstrated for Nintedanib Onkogen with the reference product, and have therefore granted a marketing authorisation. The decentralised procedure was finalised with a positive outcome on 26 September 2024.

STEPS TAKEN AFTER THE FINALISATION OF THE INITIAL PROCEDURE - SUMMARY

Procedure number	Scope	Product Information affected	Date of end of procedure	Approval/ non approval	Summary/ Justification for refuse
NL/H/5781/001-2/E/001	Repeat use procedure – Poland and Spain added as CMS	No	24 July 2025	Approved	N.A.
NL/H/5781/001-2/IB/001	Change in test procedure for the finished product - Other changes to a test procedure (including replacement or addition)	No	25 September 2025	Approved	N.A.