11 December 2025
EMADOC-1700519818-2845417
Human Medicines Division

Assessment report for paediatric studies submitted according to Article 46 of the Regulation (EC) No 1901/2006

Bimzelx

Bimekizumab

Procedure no: EMA/PAM/0000295862

Note

Assessment report as adopted by the CHMP with all information of a commercially confidential nature deleted.

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Status of this report and steps taken for the assessment				
Current step[1]	**Description**	**Planned date**	**Actual Date**	**Need for discussion[2]**
☐	Start of procedure	13 October 2025	13 October 2025	☐
☐	CHMP Rapporteur Assessment Report	17 November 2025	17 November 2025	☐
☐	CHMP members comments	1 December 2025	n/a	☐
☐	Updated CHMP Rapporteur Assessment Report	4 December 2025	5 December 2025	☐
☒	CHMP adoption of conclusions:	11 December 2025	11 December 2025	☐

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1. Introduction

On 8 September 2025, the MAH submitted a completed paediatric study for Bimzelx, in accordance with Article 46 of Regulation (EC) No1901/2006, as amended.

This report covers the final study report for the paediatric study:

Study/Protocol Reference: PS0020

Study Title: a multi-centre, open-label, randomised study to assess the pharmacokinetics, safety, and efficacy of two doses of bimekizumab in adolescent study participants with moderate to severe plaque psoriasis

Phase of Development: Phase 2

Study Completion Date: 12 March 2025 (Last Study Participant Last Visit)

This study is included in the agreed Paediatric Investigation Plan (PIP) for bimekizumab for the treatment of psoriasis (PSO), EMEA-002189-PIP01-17-M03, as reflected in EMA decision P/0339/2022, dated 10 August 2022.

A short critical expert overview has also been provided.

2. Scientific discussion

2.1. Information on the development program

Study PS0020: *A multicentre, open-label, randomised study to assess the pharmacokinetics, safety, and efficacy of two doses of bimekizumab in adolescent study participants with moderate to severe plaque psoriasis* is included in the agreed PIP for bimekizumab for the treatment of psoriasis (PSO), EMEA-002189-PIP01-17-M03, as reflected in EMA decision P/0339/2022, dated 10 August 2022.

Bimzelx (bimekizumab) received a marketing authorisation valid throughout the EU on 20 August 2021.

The initial bimekizumab MAA dossier for the PSO indication was based on a clinical development program which included 3 adequate and well-controlled pivotal Phase 3 studies (PS0008, BE SURE; PS0009, BE VIVID; and PS0013, BE READY) to provide evidence of the efficacy and safety of bimekizumab through 52 weeks (PS0009) or 56 weeks (PS0008 and PS0013) in adults with moderate to severe plaque PSO ≥6 months, defined as Psoriasis Area and Severity Index (PASI) ≥12, body surface area affected by PSO ≥10%, and Investigator's Global Assessment (IGA) score ≥3 (on a 5-point scale).

Paediatric PSO program:

The bimekizumab paediatric PSO program is based on a clinical development principle of extrapolation, wherein efficacy established in adults is extrapolated to the paediatric population by demonstrating comparable systemic exposure to bimekizumab. The extrapolation is then confirmed in a clinical efficacy and safety study in paediatric participants.

The agreed PIP for bimekizumab for PSO includes the treatment of children (6 to 11 years) and adolescents (12 to <18 years) with moderate to severe chronic plaque PSO. A waiver was granted for the paediatric population aged 0 to <6 years.

During the initial PIP procedure, the Paediatric Committee of the EMA (PDCO) recommended that a phased approach be taken with development by first establishing the safety and confirming the PK and

dosing in adolescents, prior to evaluating younger patients. It was therefore agreed that a Phase 2, PK study in adolescents would be conducted using 2 doses of bimekizumab informed by modelling PK/Pharmacodynamic (PD) data from adult Phase 2 and 3 studies. The adolescent and adult PK data would then be used in a PK/PD model to aid dose selection in a subsequent Phase 3 efficacy and safety study in the broader paediatric population.

The now completed Phase 2 study for which the clinical study report (CSR) is provided with this submission (PS0020, PIP Study 2), was an open-label study designed to support the clinical development of bimekizumab in an adolescent PSO population and inform the bimekizumab dose and dosing regimen to be tested in the subsequent Phase 3 pivotal study. As agreed with the PDCO, no comparator (placebo or active control) was included in PS0020, and no statistical hypothesis testing was performed to support applying for a posology in the population studied.

The Phase 3 study (PS0021, PIP Study 3) is an ongoing, multicentre, randomised, parallel-group, double-blind, active-controlled study to evaluate the efficacy and safety of bimekizumab compared to active control (ustekinumab) in children and adolescents from 6 years to <18 years of age with moderate to severe plaque PSO. An Initial Treatment Period (ITP) of 16 weeks is being used to demonstrate the efficacy and safety of bimekizumab compared to ustekinumab, followed by a 32-week double-blinded Maintenance Treatment Period (MTP) to further evaluate efficacy and safety through Week 48. The study also includes a 104-week OLE Period (with bimekizumab treatment only) to collect maintenance and long-term information on efficacy and safety in children and adolescents with moderate to severe plaque PSO and a SFU Visit 20 weeks after the final dose of bimekizumab.

Paediatric Investigation Plan (PIP) in PSO:

The agreed Paediatric Investigation Plan (PIP) for bimekizumab for the treatment of psoriasis (PSO) contains 4 measures as reflected in EMA decision P/0339/2022, dated 10 August 2022 (EMEA-002189-PIP01-17-M03). Two of the measures, referred to as Study 1 and Study 4 in the agreed PIP, are already completed. An EMA compliance check (procedure number: EMEA-C1-002189-PIP01-17-M01) was completed on the non-clinical measure (Study 1, UCB study reference NCD2676) prior to submission of the initial Marketing Authorisation Application for Bimzelx as required under Article 23(1) of Regulation (EC) No 1901/2006.

The report for the extrapolation, modelling and simulation study in the PIP (Study 4, project reference UCB-4940-PMX-12, report CL0542) has not yet been checked for compliance since this has not been required for validation of an application for a change to the existing Marketing Authorisation since the measure was completed.

Study PS0020 (a clinical measure referred to as Study 2 in the PIP) evaluating bimekizumab in adolescents with moderate to severe plaque PSO has been completed in accordance with the agreed timeline and is further described below. The CSR is intended to be submitted to the EMA for a compliance check.

The last clinical measure included in the PIP (Study 3, UCB study reference PS0021) is subject to an agreed deferral and is currently ongoing.

2.2. Information on the pharmaceutical formulation used in the study

Pharmaceutical formulation: Bimekizumab 160mg/mL solution for injection in a 1mL pre-filled syringe (Dose A) and vial (Dose B).

All participants were randomly assigned to a specific intervention:

Table 1. Summary of IMP administered

ARM Name	Dose A	Dose B
Intervention name	Bimekizumab	Bimekizumab
Type	Biologic	Biologic
Dose presentation	PFS	vial
Unit dose strength(s)	160mg/mL	160mg/mL
Dosage level(s) [a]	Dose A, administered Q4W, based on weight at Baseline 320mg in participants ≥65kg and 160mg in participants <65kg	Dose B, administered Q4W, based on weight at Baseline 64mg in participants ≥65kg and 32mg in participants <65kg
Dose administration performed by	Health care professional, caregiver (after receiving training), or study participant (upon becoming 18 years of age and having received training)	Health care professional (in order to ensure accuracy as this dose was drawn up from a vial)
Route of administration	sc injection	sc injection
Use	Open-label	Open-label
IMP and NIMP	IMP	IMP
Sourcing	Provided centrally by the Sponsor	Provided centrally by the Sponsor
Packaging and labeling	IMP was provided in PFS. Each PFS was labeled as required per country requirement.	IMP was provided in vials. Each vial was labeled as required per country requirement.

IMP=investigational medicinal product; NIMP=non-investigational medicinal product; OLE=Open-label Extension; PFS=prefilled syringe; Q4W=every 4 weeks; sc=subcutaneous

Note: For both Dose A and Dose B, IMP administration was to occur at the site in the Initial Treatment Period and may have occurred at home or at the site in the OLE Period.

[a] Dose modifications were allowed during the OLE Period

2.3. Clinical aspects

2.3.1. Introduction

The MAH submitted a final report for:

Study PS0020:

A multicentre, open-label, randomised study to assess the pharmacokinetics, safety, and efficacy of two doses of bimekizumab in adolescent study participants with moderate to severe plaque psoriasis.

- EudraCT number: 2020-001724-34
- EU Trial number: 2023-509832-24-00

2.3.2. Clinical study

Study PS0020

A multicentre, open-label, randomised study to assess the pharmacokinetics, safety, and efficacy of two doses of bimekizumab in adolescent study participants with moderate to severe plaque psoriasis.

Description

A Phase 2, multicentre study consisting of a 20-week, open-label, Initial Treatment Period (ITP) with eligible participants randomised to 1 of 2 bimekizumab dose groups (Dose A: 320mg every 4 weeks [Q4W] in participants ≥65kg and 160mg Q4W in participants <65kg; Dose B: 64mg Q4W in participants ≥65kg and 32mg Q4W in participants <65kg) followed by a 104-week Open-label Extension (OLE) Period and a Safety Follow-up (SFU) visit 20 weeks after the final dose of bimekizumab.

Study period: The total duration of the study (from first study participant consent to last study participant last visit) was approximately 4 years.

Study initiation date (first study participant consent): 06 April 2021

Study completion date (last study participant last visit/date of last observation from last study participant): 12 March 2025

Methods

The study included 4 periods: Screening Period (up to 5 weeks), Initial Treatment Period (20 weeks), OLE Period (104 weeks), and the Safety Follow-up (SFU) Period (20 weeks after the final dose of bimekizumab).

After the Screening Period of up to 5 weeks, eligible participants were randomised to 1 of the 2 dose groups. The randomisation was stratified by weight category. During the Initial Treatment Period, participants received 5 doses of open-label bimekizumab (at Weeks 0 [Baseline], 4, 8, 12, and 16).

Two doses were selected, and both doses were expected to be efficacious based on E-R predictions.

- Dose A (320mg Q4W in participants ≥65kg and 160mg Q4W in participants <65kg) was predicted to provide the same systemic bimekizumab exposure as the 320mg Q4W adult dose, and
- Dose B (64mg Q4W in participants ≥65kg and 32mg Q4W in participants <65kg) was aimed at providing a lower systemic bimekizumab exposure.

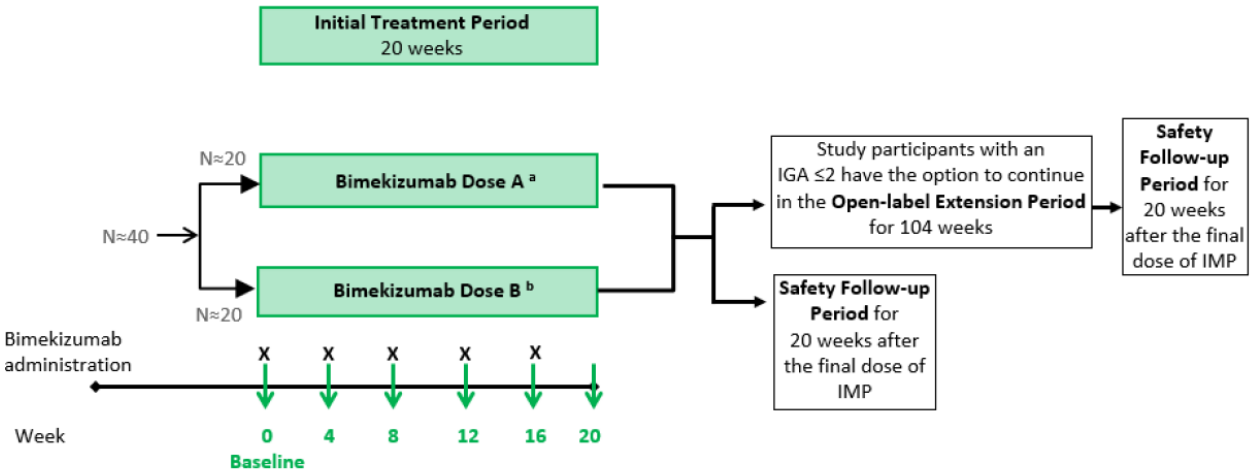
Weight categorised dosing during the Initial Treatment Period was based on the participant's weight at Baseline.

Participants who completed the Initial Treatment Period, tolerated the treatment, and achieved an IGA ≤2 at Week 20 may have continued bimekizumab treatment at the same dose level in the OLE Period. All available study PK data and clinical data (including selected efficacy and safety data) starting from when 25% of participants reached Week 16 were assessed periodically until all participants completed the Initial Treatment Period. The Phase 3 study (PS0021) dosing was determined from this information. Upon identification of the PS0021 dose, study participants in PS0020 may have switched to the PS0021 dose at the Investigator's discretion during the 104-week OLE Period. Participants who did not tolerate the IMP or who had an IGA ≥3 (on a scale from 0 to 4) at Week 20 were withdrawn

from the study. Each participant completed the SFU Period of 20 weeks following his/her final dose of bimekizumab (see study schematic below).

During the Initial Treatment Period, IMP was administered by a health care professional at the study site. In the OLE Period, Dose A and Dose B may have been administered at the study site or where possible at home. Home visits could have been conducted during the OLE Period upon agreement of the Investigator, study participant, and his/her caregiver.

Figure 1. Study schematic



Dose A: 320mg Q4W in participants ≥65kg and 160mg Q4W in participants <65kg
Dose B: 64mg Q4W in participants ≥65kg and 32mg Q4W in participants <65kg
Weight-categorized dosing during the Initial Treatment Period will be based on the participant's weight at Baseline.

IGA=Investigator's Global Assessment; IMP=investigational medicinal product; PK=pharmacokinetic(s); Q4W=every4 weeks
Note: All available study PK data and clinical data (including selected efficacy and safety data) starting from when 25% of participants reached Week 16 were assessed periodically until all participants completed the Initial Treatment Period. The Phase 3 study (PS0021) dosing was determined from this information. Upon identification of the PS0021 dose, study participants in PS0020 may have switched to the PS0021 dose at the Investigator's discretion during the 104-week Open-label Extension Period.
Note: Participants who did not tolerate the IMP or who had an IGA ≥3 (on a scale from 0 to 4) at Week 20 were withdrawn from the study.
[a] Dose A was predicted to provide the same systemic bimekizumab exposure as the 320mg Q4W adult dose.
[b] Dose B was aimed at providing a lower systemic bimekizumab exposure than Dose A.

Study participants

Male and female adolescents from 12 to <18 years of age with moderate to severe plaque PSO.

Planned number of study participants: At least 40 participants evaluable for the primary analysis (bimekizumab plasma concentrations), 20 participants in each dose group for at least 3 months prior to the Screening visit and:

- Body Surface Area (BSA) affected by PSO ≥10%
- IGA score ≥3 (on a scale from 0 to 4)
- PASI score ≥12 OR
- PASI score ≥10 plus at least 1 of the following:
  - Clinically relevant facial involvement
  - Clinically relevant genital involvement
  - Clinically relevant hand a foot involvement

Additionally, the participant must have been a candidate for systemic PSO therapy and/or photo/chemotherapy.

Reasons for exclusion included known hypersensitivity to any components of the IMP, primary failure to 1 or more interleukin (IL)-17 biologic response modifier, and participation in another study of an IMP (and/or an investigational device) within the previous 3 months or 5 half-lives (whichever was longer) prior to the Baseline Visit or currently participating in another study of IMP (and/or an investigational device).

Treatments

Both Dose A and Dose B had two weight bands.

Dose A: Bimekizumab was supplied in a prefilled syringe at a concentration of 160mg/mL for subcutaneous (sc) injection administered Q4W based on weight at Baseline:

- 320mg in participants ≥65kg and
- 160mg in participants <65kg.

Dose B: Bimekizumab was supplied in a vial at a concentration of 160mg/mL for sc injection administered Q4W, based on weight at Baseline:

- 64mg in participants ≥65kg and
- 32mg in participants <65kg.

OLE Period (104 weeks): Participants who completed the Initial Treatment Period, tolerated the treatment, and achieved an IGA ≤2 at Week 20 may have continued bimekizumab treatment at the same dose level in the OLE Period. Upon identification of the Phase 3, PS0021 dose, study participants in PS0020 may have switched to the PS0021 dose at the Investigator's discretion during the 104-week OLE Period. Participants who did not tolerate the IMP or who had an IGA ≥3 (on a scale from 0 to 4) at Week 20 were withdrawn from the study.

Table 2. Summary of IMP administered

ARM Name	Dose A	Dose B
Intervention name	Bimekizumab	Bimekizumab
Type	Biologic	Biologic
Dose presentation	PFS	vial
Unit dose strength(s)	160mg/mL	160mg/mL
Dosage level(s) [a]	Dose A, administered Q4W, based on weight at Baseline 320mg in participants ≥65kg and 160mg in participants <65kg	Dose B, administered Q4W, based on weight at Baseline 64mg in participants ≥65kg and 32mg in participants <65kg
Dose administration performed by	Health care professional, caregiver (after receiving training), or study participant (upon becoming 18 years of age and having received training)	Health care professional (in order to ensure accuracy as this dose was drawn up from a vial)
Route of administration	sc injection	sc injection
Use	Open-label	Open-label
IMP and NIMP	IMP	IMP
Sourcing	Provided centrally by the Sponsor	Provided centrally by the Sponsor
Packaging and labeling	IMP was provided in PFS. Each PFS was labeled as required per country requirement.	IMP was provided in vials. Each vial was labeled as required per country requirement.

IMP=investigational medicinal product; NIMP=non-investigational medicinal product; OLE=Open-label Extension; PFS=prefilled syringe; Q4W=every 4 weeks; sc=subcutaneous

Note: For both Dose A and Dose B, IMP administration was to occur at the site in the Initial Treatment Period and may have occurred at home or at the site in the OLE Period.

[a] Dose modifications were allowed during the OLE Period,

Objective(s)

To evaluate the pharmacokinetics (PK), safety, and efficacy of bimekizumab in adolescents with moderate to severe plaque PSO and compare the exposure-response (E-R) relationship to the adult PSO population to determine the optimal dosing of bimekizumab to be tested in paediatric participants from 6 to <18 years of age with moderate to severe plaque PSO in the subsequent Phase 3 efficacy and safety study (UCB protocol reference: PS0021).

Primary objective: To assess the PK of bimekizumab administered subcutaneously in adolescents with moderate to severe plaque PSO

Secondary objectives:

- To evaluate the safety of bimekizumab in adolescents with moderate to severe plaque PSO
- To evaluate the efficacy of bimekizumab in adolescents with moderate to severe plaque PSO
- To evaluate the immunogenicity of bimekizumab in adolescents with moderate to severe plaque PSO

- To evaluate the change in quality of life in adolescents with moderate to severe plaque PSO

Other objectives:

- To assess the efficacy of bimekizumab over time in adolescents with moderate to severe plaque PSO
- To assess the exposure (PK)-response relationship with selected clinical outcomes in adolescents with moderate to severe plaque PSO
- To assess the change in quality of life over time in adolescents with moderate to severe plaque PSO

Outcomes/endpoints

Primary endpoint: Bimekizumab plasma concentrations

Secondary endpoints:

Secondary	
• To evaluate the safety of bimekizumab in adolescents with moderate to severe plaque PSO	• TEAEs • Serious TEAEs • TEAEs leading to discontinuation of IMP • TEAEs leading to withdrawal from the study • Selected safety topics of interest (including infection [serious, opportunistic, fungal, and TB], IBD, and injection site reactions) with onset occurring from day of first dose through 20 weeks after final dose of IMP adjusted by duration of participant exposure to IMP • Change from Baseline in vital signs and physical examination findings • Change from Baseline in laboratory analyses (chemistry and hematology) • Growth assessment as assessed by the change in height and weight
• To evaluate the efficacy of bimekizumab in adolescents with moderate to severe plaque PSO	• PASI90 response at Week 16 • IGA 0/1 response (Clear [0]/Almost Clear [1] with at least 2-category improvement from Baseline) at Week 16 • PASI75 response at Week 4
• To evaluate the immunogenicity of bimekizumab in adolescents with moderate to severe plaque PSO	• Anti-bimekizumab antibody detection prior to and following IMP administration
• To evaluate the change in quality of life in adolescents with moderate to severe plaque PSO	• Change from Baseline in CDLQI response at Week 16

An independent external DMC periodically reviewed and monitored safety data from this study. An IBD Adjudication Committee and Neuropsychiatric Adjudication Committee also reviewed prespecified data from this study.

Other objectives:

Other	
• To assess the efficacy of bimekizumab over time in adolescents with moderate to severe plaque PSO	• PASI50 response over time • PASI75 response over time • PASI90 response over time • PASI100 response over time • Absolute and percent change from Baseline in PASI score over time • IGA 0/1 response (with at least 2-category improvement from Baseline) over time • IGA 0 response (with at least 2-category improvement from Baseline) over time • Scalp-specific IGA (scalp IGA) response (Clear or Almost Clear with at least 2-category improvement from Baseline for participants with scalp PSO at Baseline) over time
• To assess the exposure (PK)-response relationship with selected clinical outcomes in adolescents with moderate to severe plaque PSO	• The relationship between plasma bimekizumab exposure and, though not limited to, the following clinical outcomes: PASI score over time, PASI change from Baseline, IGA score over time, IGA change from Baseline
• To assess the change in quality of life over time in adolescents with moderate to severe plaque PSO	• Change from Baseline in CDLQI response over time • CDLQI 0/1 response over time

CDLQI=Children's Dermatology Life Quality Index; IBD=inflammatory bowel disease; IGA=Investigator's Global Assessment; IMP=investigational medicinal produce; PASI=Psoriasis Area and Severity Index; PK=pharmacokinetic(s); PSO=psoriasis; TB=tuberculosis; TEAEs=treatment-emergent adverse events

Sample size

The number of study participants, at least 40 total participants randomised 1:1 across the 2 dose arms, is considered to be sufficient to assess bimekizumab population PK and E-R in adolescents. The sample size is based on simulations from an adult PASI E-R model, adjusted for body weight differences in PK for adolescents (i.e., allometric scaling in clearance [CL/F] and V/F) and assuming the same efficacy response in adolescents as in adults (i.e., same parameter estimates for simulation were assumed). A total of 40 participants allocated evenly to 2 dose arms was found in the modelling and simulation to be sufficient for the estimation of PK/PD parameters with precision in a combined adult-adolescent analysis.

Randomisation and blinding (masking)

Participants were randomised 1:1 across the 2 dose groups. The study was open label.

Statistical Methods

A participant was considered evaluable if he/she received IMP and provided at least 1 sample for PK analysis.

Descriptive statistics were displayed to provide an overview of the study results. Summary statistics consisted of frequency tables for categorical variables. The number and percentage of study

participants in each category were presented. The denominator for percentages was based on the number of participants appropriate for the purpose of analysis. For continuous variables, summary statistics consisted of the number of available observations, arithmetic mean, standard deviation (SD), median, minimum, and maximum, unless stated otherwise.

Study participants with missing data were accounted for using the following approaches:

- All efficacy data collected later than 33 days – derived as 28 days allotted for the planned dosing interval plus 5 days allotted for the maximum allowable visit window during either study period – and all safety data that were collected later than 140 days after the last administration of study treatment were treated as missing and subject to imputation as applicable.
- For summaries of demographics and Baseline characteristics: percentages were based on all study participants in the relevant analysis set and a "Missing" category (corresponding to study participants with missing data for the variable being summarised) was included as the last row in the list of categories being summarized, if at least one dose group has a value missing.
- All summaries of PK concentrations were based on the observed values. No imputation of missing data was used.
- For efficacy and safety variables, summaries were typically based on the observed data for the variable being summarised. As the denominator may have been different from the number of study participants in the analysis set being considered, the denominator was displayed in the table. The general format for displaying this will be "n/Nsub (%)".
    - For secondary efficacy variables with binary responses (e.g., Psoriasis Area and Severity Index [PASI] 90 at Week 16, PASI75 at Week 4, and Investigator's Global Assessment [IGA] 0/1 at Week 16), study participants who had an intercurrent event had their efficacy response variable at the timepoint of the intercurrent event and all subsequent timepoints (whether the data were observed or not) were set to "nonresponse". An observed case (OC) analysis was performed as a sensitivity check.
    - For secondary continuous efficacy endpoints (Children's Dermatology Life Quality Index [CDLQI] [total score] change from Baseline at Week 16), the last observation carried forward (LOCF) was used for participants who had an intercurrent event. The OC method was also performed.
- For secondary efficacy variables of responses, 95% Clopper-Pearson confidence intervals (CIs) were provided for responder rates (PASI90 at Week 16, PASI75 at Week 4, and IGA0/1 at Week 16) in each dose group. For Change from Baseline in CDLQI response at Week 16, 95% CIs were provided for the mean change for each dose group.

A Baseline value for clinical variables was defined as the latest measurement on or prior to the first dosing day of investigational medicinal product (IMP), regardless of the time of the measurement, for the Initial Treatment Period and the Open-label Extension (OLE) Period. If Baseline plasma concentration was measured at a time after the first administration of study medication, then it should not have been eligible to be considered as a Baseline plasma concentration. When the time of first dose was derived, it should have been based on the first injection of IMP.

Changes made to the planned statistical analyses: from the initial study protocol to SAP Amendment 2-

- The addition of the COVID-19 impact analysis.

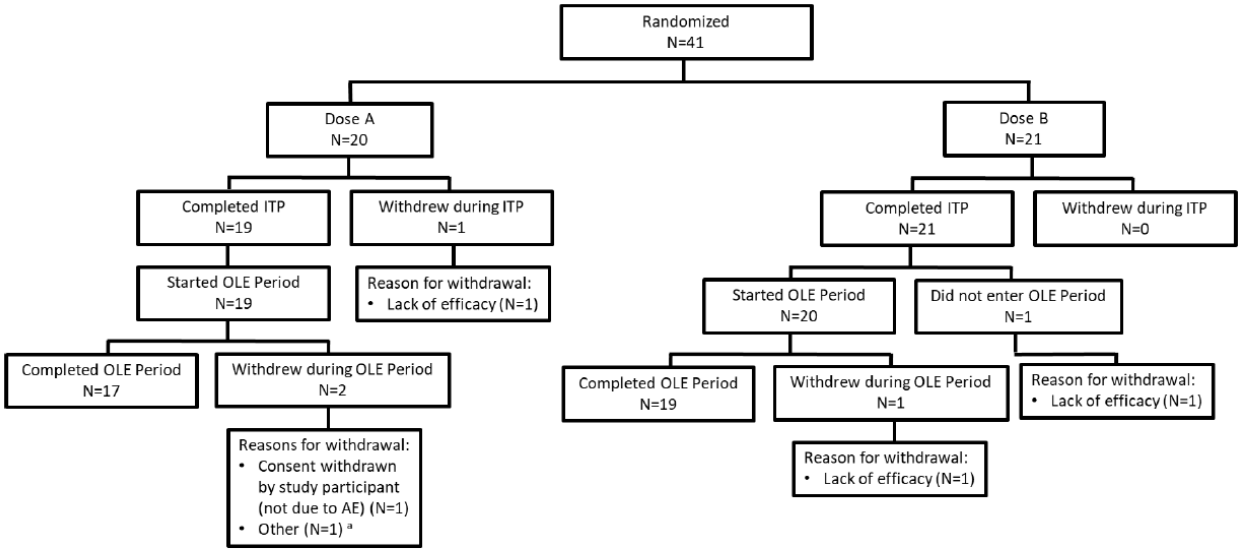
- The definitions of analysis sets were changed:
    - Immunogenicity analyses were based on SS or OLS, and participants were summarised as randomised.
    - PK variables were analysed for all participants in the PK-PPS and were summarised as randomised.
    - OLS analyses were based on the SS and as treated.
    - For summaries using both PK-PPS and OLS, participants were summarised as randomised.
- Multiple imputation was no longer applied to missing continuous data. Instead, the LOCF method was used to impute the missing value.
- The addition of shift tables for growth assessments for height and weight.

Results

Participant flow

A total of 41 study participants were randomised and started the Initial Treatment Period, including 20 study participants in Dose A and 21 study participants in Dose B. Overall, 17 study participants in Dose A completed study treatment and completed the study. A total of 19 study participants in Dose B completed study treatment, and 18 study participants completed the study.

Figure 2. Study participant disposition (SS)



AE=adverse event; ITP=Initial Treatment Period OLE=Open-label Extension; SS=Safety Set
[a] Participant withdrew due to moving abroad.

Recruitment

A total of 45 study participants signed the ICF and were screened for the study, 4 of whom were screen failures (Table 3 below). The most common reason for screen failure was ineligibility (3 study participants [6.7%]).

A total of 41 study participants were randomised and started the Initial Treatment Period, including 20 study participants in Dose A and 21 study participants in Dose B. The vast majority of study

participants (19 study participants [95.0%]) in Dose A completed the Initial Treatment Period; 1 study participant in Dose A withdrew from the study during the Initial Treatment Period due to lack of efficacy. All study participants in Dose B completed the Initial Treatment Period.

All 19 study participants in Dose A who completed the Initial Treatment Period started the OLE Period, of which 17 study participants completed the OLE Period. Two study participants (10.0%) withdrew from the study during the OLE Period; 1 study participant withdrew consent (not due to an AE) and 1 study participant discontinued for other reasons (participant moved abroad). Of note, 1 study participant attended all OLE Period visits and the SFU Visit but did not take all scheduled doses; this participant was considered to have completed the study.

Of the 21 study participants in Dose B who completed the Initial Treatment Period, 20 study participants started the OLE Period. A total of 19 study participants completed the OLE Period, including 1 study participant who completed the Initial Treatment Period and OLE Period but did not complete the SFU, and therefore, completed study treatment but did not complete the study, per the protocol. One study participant withdrew from the study during the OLE Period due to lack of efficacy.

Overall, 17 study participants (85.0%) in Dose A completed study treatment and completed the study. A total of 19 study participants (90.5%) in Dose B completed study treatment in the OLE Period, and 18 study participants completed the study (85.7%).

Table 3. Disposition and discontinuation reasons (RS)

Disposition	BKZ Dose A N=20 n (%)	BKZ Dose B N=21 n (%)	All Participants N=41 n (%)
Completed study	17 (85.0)	18 (85.7)	35 (85.4)
Completed all doses and visits excluding SFU	0	1 (4.8)	1 (2.4)
Discontinued	3 (15.0)	2 (9.5)	5 (12.2)
Primary reason for discontinuation			
Lack of efficacy	1 (5.0)	2 (9.5)	3 (7.3)
Withdrawal by participant	1 (5.0)	0	1 (2.4)
Other	1 (5.0)	0	1 (2.4)
Started Initial Treatment Period	20 (100)	21 (100)	41 (100)
Completed Initial Treatment Period	19 (95.0)	21 (100)	40 (97.6)
Discontinued IMP but did not withdraw from study during Initial Treatment Period	0	0	0
Withdrew from study during Initial Treatment Period	1 (5.0)	0	1 (2.4)
Primary reason for study withdrawal			
Lack of efficacy	1 (5.0)	0	1 (2.4)
Completed Initial Treatment Period but did not enter Open-label Extension Period	0	1 (4.8)	1 (2.4)
Primary reason for study withdrawal			
Lack of efficacy	0	1 (4.8)	1 (2.4)
Started OLE	19 (95.0)	20 (95.2)	39 (95.1)
Completed the OLE	17 (85.0)	19 (90.5)	36 (87.8)
Completed SFU after completing OLE	17 (85.0)	18 (85.7)	35 (85.4)
Discontinued IMP but did not withdraw from study during OLE	1 (5.0)	0	1 (2.4)
Withdrew from study during OLE	2 (10.0)	1 (4.8)	3 (7.3)
Primary reason for study withdrawal			
Lack of efficacy	0	1 (4.8)	1 (2.4)
Consent withdrawn by study participant (not due to AE)	1 (5.0)	0	1 (2.4)
Other	1 (5.0)	0	1 (2.4)
Completed SFU [a]	18 (90.0)	20 (95.2)	38 (92.7)

AE=adverse event; BKZ=bimekizumab; IGA=Investigator's Global Assessment; IMP=investigational medicinal product; OLE=Open-label Extension; Q4W=every 4 weeks; RS=Randomized Set; SFU=Safety Follow-up
Note: Dose A: BKZ 320mg Q4W in study participants ≥65kg and BKZ 160mg Q4W in study participants <65kg.
Note: Dose B: BKZ 64mg Q4W in study participants ≥65kg and BKZ 32mg Q4W in study participants <65kg.
Note: Weight-categorized dosing during the Initial Treatment Period was based on the study participant's weight at Baseline.
Note: Starting the Initial Treatment Period was defined as having received at least 1 dose of BKZ.
Note: Study participants who completed the Initial Treatment Period, tolerated the treatment, and achieved an IGA ≤2 at Week 20 may have been eligible to enroll in the OLE Period.
Note: Study participants were summarized according to the randomized treatment as allocated at Baseline.
Note: For study participants who did not enter the OLE Period, completion was defined as completion of the Screening Period, the Initial Treatment Period, and the SFU Visit.
Note: For participants who entered the OLE Period, completion was defined as completion of all periods of the study (ie, Screening Period, Initial Treatment Period, OLE Period, and the SFU Visit).
[a] Includes study participants who discontinued from the study.

Protocol deviations

Table 4. Important protocol deviations – Initial Treatment Period (RS)

Category	BKZ Dose A N=20 n (%)	BKZ Dose B N=21 n (%)	All Participants N=41 n (%)
Study participants with no important protocol deviations	20 (100)	20 (95.2)	40 (97.6)
Study participants with at least 1 important protocol deviation	0	1 (4.8)	1 (2.4)
Incorrect treatment or dose	0	1 (4.8)	1 (2.4)
Number of participants excluded from PK-PPS	0	1 (4.8)	1 (2.4)
Incorrect treatment or dose	0	1 (4.8)	1 (2.4)

BKZ=bimekizumab; PK-PPS=Pharmacokinetic Per-Protocol Set; Q4W=every 4 weeks; RS=Randomized Set
Note: Dose A: BKZ 320mg Q4W in participants ≥65kg and BKZ 160mg Q4W in participants <65kg.
Note: Dose B: BKZ 64mg Q4W in participants ≥65kg and BKZ 32mg Q4W in participants <65kg.
Note: Weight-categorized dosing during the Initial Treatment Period was based on the participant's weight at Baseline.
Note: Study participants with important protocol deviations that would affect the concentration were excluded from the PK-PPS.

No IPDs were reported during the OLE Period.

Baseline data

The mean age of all study participants was 14.8 years of age with a range of 12 to 17 years of age. The majority of study participants were female (58.5%), white (97.6%), and not Hispanic or Latino (97.6%). The mean body weight and mean BMI were 68.01kg and 24.55kg/m2, respectively. The proportion of study participants who were obese (≥95th BMI percentile) was higher for Dose B (33.3%) compared with Dose A (15.0%). The majority of study participants (85.4%) were from Poland.

Table 5. Demographics (RS), exert

Variable Statistic	BKZ Dose A N=20	BKZ Dose B N=21	All Participants N=41
Age (years)			
n	20	21	41
Mean (SD)	15.1 (1.9)	14.6 (2.0)	14.8 (1.9)
Median (min, max)	16.0 (12, 17)	15.0 (12,17)	15.0 (12, 17)
Age group [a], n (%)			
12 to <18 years	20 (100)	21 (100)	41 (100)
Gender, n (%)			
Male	9 (45.0)	8 (38.1)	17 (41.5)
Female	11 (55.0)	13 (61.9)	24 (58.5)
Region, n (%)			
North America	2 (10.0)	3 (14.3)	5 (12.2)
Europe	18 (90.0)	18 (85.7)	36 (87.8)
Weight (kg)			
n	20	21	41
Mean (SD)	65.74 (16.77)	70.17 (19.96)	68.01 (18.38)
Median (min, max)	62.00 (41.4, 107.3)	62.00 (43.0, 105.0)	62.00 (41.4, 107.3)
Weight Category, n (%)			
<65kg	12 (60.0)	12 (57.1)	24 (58.5)
≥65kg	8 (40.0)	9 (42.9)	17 (41.5)
Height (cm)			
n	20	21	41
Mean (SD)	166.87 (8.12)	165.97 (11.24)	166.41 (9.73)
Median (min, max)	165.00 (156.0, 184.0)	163.00 (152.0, 199.0)	163.00 (152.0, 199.0)
BMI (kg/m^2)			
n	20	21	41
Mean (SD)	23.56 (5.56)	25.49 (7.03)	24.55 (6.35)
Median (min, max)	22.40 (16.7, 38.1)	23.30 (17.0, 39.2)	22.80 (16.7, 39.2)
Weight percentile, n (%)			
$<5^{th}$	0	0	0
$\geq5^{th}$ to $<25^{th}$	2 (10.0)	1 (4.8)	3 (7.3)
$\geq25^{th}$ to $<50^{th}$	4 (20.0)	4 (19.0)	8 (19.5)
$\geq50^{th}$ to $<75^{th}$	2 (10.0)	2 (9.5)	4 (9.8)
$\geq75^{th}$ to $<95^{th}$	8 (40.0)	7 (33.3)	15 (36.6)
$\geq95^{th}$	4 (20.0)	7 (33.3)	11 (26.8)
BMI percentile, n (%)			
$<5^{th}$ (underweight)	1 (5.0)	1 (4.8)	2 (4.9)
$\geq5^{th}$ to $<85^{th}$ (normal or healthy weight)	10 (50.0)	10 (47.6)	20 (48.8)
$\geq85^{th}$ to $<90^{th}$ (overweight)	2 (10.0)	1 (4.8)	3 (7.3)
$\geq90^{th}$ to $<95^{th}$ (overweight)	4 (20.0)	2 (9.5)	6 (14.6)
$\geq95^{th}$ to $<97^{th}$ (obese)	0	3 (14.3)	3 (7.3)
$\geq97^{th}$ (obese)	3 (15.0)	4 (19.0)	7 (17.1)

BKZ=bimekizumab; BMI=body mass index; CTIS=Clinical Trials Information System; EudraCT=European Union Drug Regulating Authorities Clinical Trials; max=maximum; min=minimum; Q4W=every 4 weeks; RS=Randomized Set; SD=standard deviation
Note: Age=Year of informed consent signed – year of birth.
Note: Dose A: BKZ 320mg Q4W in participants ≥65kg and BKZ 160mg Q4W in participants <65kg.
Note: Dose B: BKZ 64mg Q4W in participants ≥65kg and BKZ 32mg Q4W in participants <65kg.
Note: Weight-categorized dosing during the Initial Treatment Period was based on the participant's weight at Baseline.
Note: BMI was derived as BMI (kg/m^2) = weight (kg) / [[height (cm)/100]**2].
Note: Participants were summarized according to randomized treatment as allocated at Baseline.
[a] EudraCT/CTIS age categories.

Baseline disease characteristics

The baseline disease characteristics were reflective of a population with moderate to severe plaque PSO. Baseline characteristics were consistent with the study inclusion criteria: BSA affected by PSO ≥10%, PASI score ≥10, and IGA score ≥3 (Table 6 below). Overall, the mean percent BSA was 23.1%, the mean PASI score was 17.49, and all study participants had an IGA score ≥3. The mean baseline CDLQI score was 6.3, indicating a low impact of skin disease on quality of life.

The following baseline characteristics were slightly higher for study participants receiving Dose B compared with Dose A: baseline BSA (23.4 vs 22.8, respectively), PASI (18.21 vs 16.74, respectively), and CDLQI (7.3 vs 5.2, respectively). All but 1 study participant in Dose A presented with scalp lesions, and the majority of study participants (61.0%) had a moderate scalp IGA score at Baseline.

Table 6. Baseline disease characteristics (RS), exert

Variable Statistic	BKZ Dose A N=20	BKZ Dose B N=21	All Participants N=41
Duration of PSO disease (years)			
n	20	21	41
Mean (SD)	4.95 (3.77)	5.76 (2.98)	5.37 (3.37)
Median (min, max)	3.71 (0.3, 12.5)	6.12 (0.6, 11.0)	5.74 (0.3, 12.5)
Duration of disease, n (%)			
<Median	11 (55.0)	9 (42.9)	20 (48.8)
≥Median	9 (45.0)	12 (57.1)	21 (51.2)
PSO present and active at screening, n (%)			
Yes	20 (100)	21 (100)	41 (100)
No	0	0	0
Physician's assessment of PSO severity, n (%)			
Mild	0	0	0
Moderate	17 (85.0)	17 (81.0)	34 (82.9)
Severe	3 (15.0)	4 (19.0)	7 (17.1)
Family history of PSO, n (%)			
Yes	12 (60.0)	12 (57.1)	24 (58.5)
No	8 (40.0)	9 (42.9)	17 (41.5)
Received any previous PSO therapy, n (%)			
Yes	19 (95.0)	21 (100)	40 (97.6)
Biologic agent	1 (5.0)	6 (28.6)	7 (17.1)
No	0	0	0
Missing [a]	1 (5.0)	0	1 (2.4)
History of PsA, n (%)			
Yes	2 (10.0)	0	2 (4.9)
No	18 (90.0)	21 (100)	39 (95.1)

BKZ=bimekizumab; BSA=body surface area; CDLQI=Children's Dermatology Life Quality Index; IGA=Investigator's Global Assessment; max=maximum; min=minimum; PASI=Psoriasis Area and Severity Index; PsA=psoriatic arthritis; PSO=psoriasis; Q4W=every 4 weeks; RS=Randomized Set; SD=standard deviation

Note: Dose A: BKZ 320mg Q4W in participants ≥65kg and BKZ 160mg Q4W in participants <65kg.

Note: Dose B: BKZ 64mg Q4W in participants ≥65kg and BKZ 32mg Q4W in participants <65kg.

Note: Weight-categorized dosing during the Initial Treatment Period was based on the participant's weight at Baseline.

Note: The denominator is the number of participants in the RS.

Note: Duration of PSO disease = [Date of randomization – Date of first PSO diagnosis]/365.25.

Note: Baseline scalp involvement was based on the number of participants achieving scalp IGA>0; participants missing scalp IGA were considered to be missing scalp involvement. If baseline scalp IGA >0, then scalp involvement was indicated as 'Yes'. Otherwise, scalp involvement was indicated as 'No'.

Note: The CDLQI data were collected either on paper via electronic data capture or digitally in the app and have been pooled for analysis.

Note: Participants were summarized according to randomized treatment as allocated at Baseline.

[a] One study participant had taken past PSO therapy but was recorded incorrectly in the database and hence put under the Missing category.

Number analysed

Primary analysis

The Pharmacokinetic Per-Protocol Set (PK-PPS) consisted of the same study participants as the RS and SS, except for 1 study participant in Dose B who was excluded from the PK-PPS, therefore, a total of 40 study participants were evaluable for the primary analysis (20 study participants in each dose group).

The enrolled set (ES) consisted of 45 study participants, including 20 study participants in Dose A, 21 study participants in Dose B, and 4 study participants who were not randomised (Table 7 below). The RS and SS consisted of the same study participants, including 20 study participants in Dose A and 21 study participants in Dose B.

The OLS consisted of 19 study participants in Dose A and 20 study participants in Dose B.

Table 7. Disposition of analysis sets (ES)

Analysis Set	BKZ Dose A N=20 n (%)	BKZ Dose B N=21 n (%)	Not Randomized N=4 n (%)	All Participants N=45 n (%)
ES	20 (100)	21 (100)	4 (100)	45 (100)
RS	20 (100)	21 (100)	0	41 (91.1)
SS	20 (100)	21 (100)	0	41 (91.1)
PK-PPS	20 (100)	20 (95.2)	0	40 (88.9)
OLS	19 (95.0)	20 (95.2)	0	39 (86.7)

BKZ=bimekizumab; ES=Enrolled Set; OLS=Open-label Set; PK-PPS=Pharmacokinetic Per-Protocol Set; Q4W=every 4 weeks; RS=Randomized Set; SS=Safety Set
Note: Dose A: BKZ 320mg Q4W in participants ≥65kg and BKZ 160mg Q4W in participants <65kg.
Note: Dose B: BKZ 64mg Q4W in participants ≥65kg and BKZ 32mg Q4W in participants <65kg.
Note: Weight-categorized dosing during the Initial Treatment Period was based on the participant's weight at Baseline.
Note: The All Participants group also includes participants who did not fulfill the enrollment criteria (ie, no treatment group was allocated and are Not Randomized).
Note: Participants are summarized according to randomized treatment as allocated at Baseline.

Pharmacokinetic results

The analysis of bimekizumab plasma concentrations was the primary endpoint for the study. The majority of randomised study participants were included in the PK-PPS (97.6%), with 1 participant in Dose B excluded from the PK-PPS, as described above.

Initial treatment period:

- At Week 1, the geometric mean bimekizumab plasma concentration was higher than the geometric mean bimekizumab plasma trough concentration at Week 4 for both Dose A and Dose B (Table 8). This finding is consistent with the known PK profile of bimekizumab in adults, where the Week 1 sample generally corresponded to the approximate time of Cmax.
- Geometric mean plasma bimekizumab trough concentrations increased with repeat dosing of bimekizumab and reached steady state between Week 16 and Week 20. Steady state trough concentrations were generally maintained after Week 20 and were within the expected concentration ranges at each visit.

- As expected, steady state trough concentrations for Dose A (bimekizumab 320mg Q4W in participants ≥65kg and bimekizumab 160mg Q4W in participants <65kg) were higher than the steady state trough concentrations for Dose B (bimekizumab 64mg Q4W in participants ≥65kg and bimekizumab 32mg Q4W in participants <65kg).
- The steady-state trough concentrations for Dose A were comparable to those observed in adults with moderate to severe PSO who received bimekizumab 320mg Q4W.

Table 8. Bimekizumab plasma concentrations (µg/mL) over time – Initial Treatment Period (PK-PPS)

Week	BKZ Dose A N=20		BKZ Dose B N=20	
	n	GeoMean (GeoCV%) [95% CI]	n	GeoMean (GeoCV%) [95% CI]
Baseline	19	BLQ	20	BLQ
Week 1	20	21.145 (33.510) [18.151, 24.633]	20	3.811 (30.424) [3.315, 4.380]
Week 4	20	11.718 (35.259) [9.983, 13.754]	19	1.986 (22.888) [1.781, 2.215]
Week 8	20	16.344 (39.386) [13.682, 19.522]	19	2.562 (91.934) [1.757, 3.736]
Week 12	19	19.312 (38.235) [16.162, 23.075]	20	2.600 (89.916) [1.813, 3.727]
Week 16	19	20.163 (41.323) [16.651, 24.416]	20	2.560 (99.017) [1.739, 3.769]
Week 20	19	21.579 (38.806) [18.015, 25.849]	19	2.689 (99.146) [1.805, 4.006]

BKZ=bimekizumab; BLQ=below the limit of quantification; CI=confidence interval; GeoCV=geometric coefficient of variation; GeoMean=geometric mean; LLOQ=lower limit of quantification; PK-PPS=Pharmacokinetic Per-Protocol Set; Q4W=every 4 weeks
Note: Dose A: BKZ 320mg Q4W in participants ≥65kg and BKZ 160mg Q4W in participants <65kg.
Note: Dose B: BKZ 64mg Q4W in participants ≥65kg and BKZ 32mg Q4W in participants <65kg.
Note: Weight-categorized dosing during the Initial Treatment Period was based on the participant's weight at Baseline.
Note: Values BLQ were replaced by a value of LLOQ/2=0.125µg/mL in calculations of GeoMean and CIs.
Note: GeoMean was only calculated if at least ⅔ of the concentrations were quantified at the respective time point.

Combined Initial Treatment Period and OLE Period

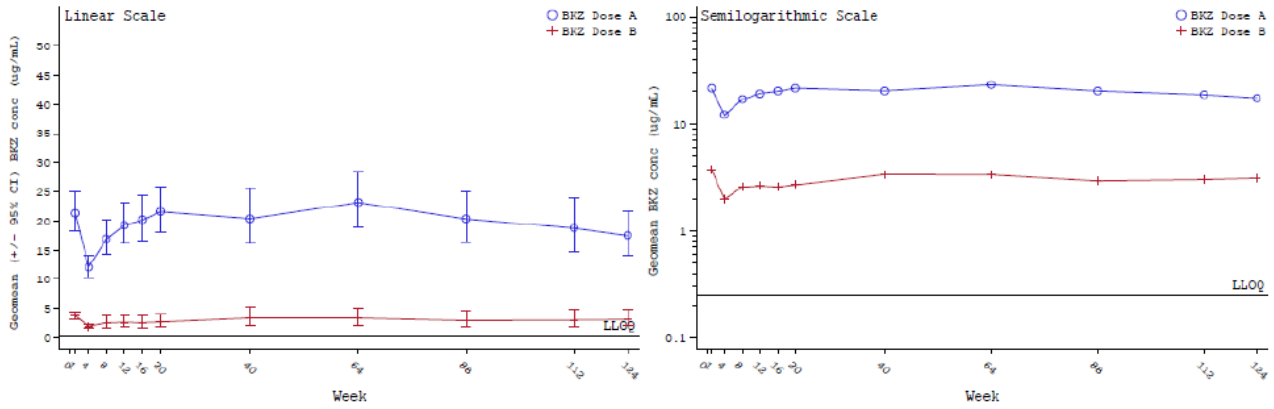
- Overall, steady state trough concentrations were generally maintained after Week 20 and were within the expected concentration ranges at each visit (Table 9 below).
- For Dose A, steady state trough concentrations at Week 124 in participants ≥65kg who received bimekizumab 320mg Q4W (20.821µg/mL) were slightly higher compared with participants <65kg who received bimekizumab 160mg Q4W (15.578µg/mL).
- In contrast to Dose A, trough concentrations in Dose B were slightly lower than expected and had a high geometric CV%, particularly among participants ≥65kg receiving bimekizumab 64mg Q4W (2.349µg/mL and 216.560% at Week 124) compared with participants <65kg receiving bimekizumab 32mg Q4W (3.707µg/mL and 43.506% at Week 124). This may be due to the potential impact of NAb positivity on PK, which cannot be ruled out.
- The geometric mean concentrations (geometric CV%) at for Dose A and Dose B for all periods is presented for the PK-PPS in the Table 9 below. A plot of geometric mean bimekizumab plasma concentrations over time is presented for the PK-PPS in the Figure 3 below.

Table 9. Bimekizumab plasma concentrations (µg/mL) over time – All Periods (Participants in both the OLS and PK-PPS)

Week	BKZ Dose A N=19		BKZ Dose B N=19	
	n	GeoMean (GeoCV%) [95% CI]	n	GeoMean (GeoCV%) [95% CI]
Week 20	19	21.579 (38.806) [18.015, 25.849]	19	2.689 (99.146) [1.805, 4.006]
Week 40	18	20.404 (48.700) [16.221, 25.665]	19	3.354 (115.576) [2.151, 5.228]
Week 124	15	17.495 (40.714) [14.084, 21.732]	18	3.104 (107.492) [2.008, 4.800]

BKZ=bimekizumab; CI=confidence interval; GeoCV=geometric coefficient of variation; GeoMean=geometric mean; LLOQ=lower limit of quantification; OLS=Open-label Set; PK-PPS=Pharmacokinetic Per-Protocol Set; Q4W=every 4 weeks
Note: Dose A: BKZ 320mg Q4W in participants ≥65kg and BKZ 160mg Q4W in participants <65kg.
Note: Dose B: BKZ 64mg Q4W in participants ≥65kg and BKZ 32mg Q4W in participants <65kg.
Note: Weight-categorized dosing during the Initial Treatment Period was based on the participant's weight at Baseline because only 3 participants switched dose during the OLE Period in Dose A (n=1 from 160mg to 320mg) and Dose B (n=2, from 32mg to 64mg).
Note: GeoMean was only calculated if at least 2/3 of the concentrations were quantified at the respective time point and n≥3.

Figure 3. Geometric mean bimekizumab plasma concentration over time – All Periods (Participants in both the OLS and PK-PPS)



BKZ=bimekizumab; BLQ=below the limit of quantification; CI=confidence interval; CV=coefficient of variation; GeoCV=geometric coefficient of variation; GeoMean=geometric mean; LLOQ=lower limit of quantification; OLE=Open-label Extension; OLS=Open-label Set; PK-PPS=Pharmacokinetic Per-Protocol Set; Q4W=every 4 weeks
Note: Dose A: BKZ 320mg Q4W in participants ≥65kg and BKZ 160mg Q4W in participants <65kg.
Note: Dose B: BKZ 64mg Q4W in participants ≥65kg and BKZ 32mg Q4W in participants <65kg.
Note: Weight-categorized dosing during the Initial Treatment Period was based on the participant's weight at Baseline.
Note: Values BLQ were replaced by a value of LLOQ/2=0.125µg/mL in calculations of GeoMean and CIs.
Note: GeoMean was only calculated if at least 2/3 of the concentrations were quantified at the respective time point and n≥3.

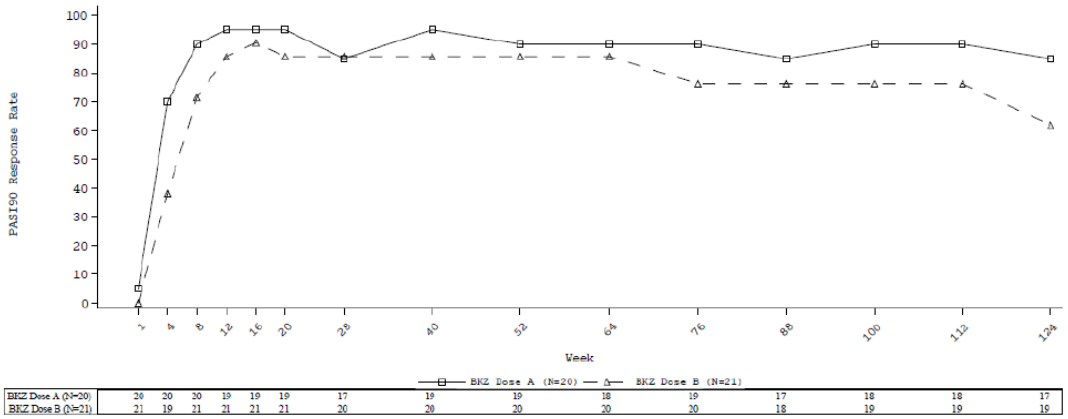
Efficacy results

Given PS0020 was an open-label study, efficacy was not the primary endpoint. As all participants were adolescents, data were not subdivided into age groups.

- The PASI90 response rate at Week 16 was similar for Dose A and Dose B (95.0% and 90.5%, respectively).
- The IGA 0/1 response (Clear [0]/Almost Clear [1] with at least 2-category improvement from Baseline) rate at Week 16 was similar for Dose A and Dose B (95.0% and 90.5%, respectively).

- The PASI75 response at Week 4 was substantially higher for Dose A compared with Dose B (80.0% vs 52.4%, respectively).
- CDLQI mean scores at Week 16 decreased from Baseline, indicating improved quality of life, in both Dose A and Dose B (-3.9 and -5.5, respectively). Of note, all participants had a relatively low Baseline CDLQI; however, Dose B had a slightly higher Baseline CDLQI compared with Dose A and thus, had slightly more room for improvement.
- Generally, response rates over time for efficacy endpoints (Psoriasis Area and Severity Index [PASI] and Investigator's Global Assessment [IGA] and CDLQI) had higher response for Dose A compared with Dose B at week 4. By Week 12- 16, the response rates were similar and through Week 124 generally sustained in both dose groups for the duration of the study, although at a slightly higher rate for Dose A compared with Dose B.

Figure 4. Line plot of PASI90 response over time by dose group (RS [NRI])



BKZ=bimekizumab; NRI=nonresponder imputation; PASI=Psoriasis Area and Severity Index; Q4W=every 4 weeks; RS=Randomized Set
Note: Dose A: BKZ 320mg Q4W in participants ≥65kg and BKZ 160mg Q4W in participants <65kg.
Note: Dose B: BKZ 64mg Q4W in participants ≥65kg and BKZ 32mg Q4W in participants <65kg.
Note: Weight-categorized dosing during the Initial Treatment Period was based on the participant's weight at Baseline.

Table 10. IGA 0/1 response rate over time

Visit Initial Treatment Period (RS [NRI, OC])	BKZ Dose A N=20	BKZ Dose B N=21
Week 4		
n (%)	17 (85.0)	9 (42.9)
n/Nsub (%)	17/20 (85.0)	9/20 (45.0)
Week 16		
n (%)	19 (95.0)	19 (90.5)
n/Nsub (%)	19/19 (100)	19/21 (90.5)
OLE Period (OLS [NRI, OC])	**BKZ Dose A N=19**	**BKZ Dose B N=20**
Week 52		
n (%)	18 (94.7)	19 (95.0)
n/Nsub (%)	18/19 (94.7)	19/20 (95.0)
Week 124		
n (%)	17 (89.5)	15 (75.0)
n/Nsub (%)	14/14 (100)	13/17 (76.5)

BKZ=bimekizumab; IGA=Investigator's Global Assessment; NRI=nonresponder imputation; OC=observed case; OLE=Open-label Extension; OLS=Open-label Set; Q4W=every 4 weeks; RS=Randomized Set
Note: Dose A: BKZ 320mg Q4W in participants ≥65kg and BKZ 160mg Q4W in participants <65kg.
Note: Dose B: BKZ 64mg Q4W in participants ≥65kg and BKZ 32mg Q4W in participants <65kg.
Note: Weight-categorized dosing during the Initial Treatment Period was based on the participant's weight at Baseline.
Note: Participants with missing data at a given week were counted as nonresponders in the n (%) row and denominator is the column header N.
Note: In the n/Nsub (%) row, Nsub represents the number of participants with a non-missing measurement for IGA 0/1 at the given week, and percentages were calculated accordingly.
Note: IGA response is defined as IGA score of clear [0] or almost clear [1] with at least a 2-category improvement from Baseline at visit timepoint. Only participants with a Baseline score of at least 2 are included.
Note: If participant data was collected more than 33 days (dosing interval of 28 days + visit window of 5 days) after the treatment discontinuation date, it was considered as missing in the OC summary.

Subgroup analyses

Subgroup analyses were conducted for the secondary efficacy endpoints across the subgroups of weight category (≥65kg and <65kg) and sex (male and female).

- The PASI90 and IGA 0/1 response rates at Week 16, and the PASI75 response rate at Week 4 were lower in participants who were ≥65kg compared with those who were <65kg. Of note, the PASI75 response rate at Week 4 was substantially lower for participants ≥65kg in Dose B compared with participants <65kg in Dose B. There were no relevant differences in the mean change from Baseline in CDLQI response for participants who were ≥65kg and those who were <65kg.
- There were no relevant differences in PASI90, IGA 0/1, and PASI75 response rates and change from Baseline in CDLQI between male and female participants.

Safety results

There were no meaningful differences noted between Dose A and Dose B and no safety signals were identified in the study. While no TEAEs of candidiasis were reported in this adolescent population, the safety observations were otherwise consistent with the known bimekizumab safety profile.

Adverse events

- During the Combined Initial Treatment Period and OLE Period, the incidence of TEAEs was 82.9% (34 study participants) and similar in Dose A and Dose B (17 study participants [85.0%] and 17 study participants [81.0%], respectively). When the TEAE incidence was corrected for duration of exposure, the resulting EAIR was 85.73/100 participant-years.
- During the combined Initial Treatment Period and OLE Period, the incidence of serious TEAEs was low (5 study participants [12.2%]) and similar between Dose A and Dose B (2 study participants [10.0%] and 3 study participants [14.3%], respectively).
- During the combined Initial Treatment Period and OLE Period, 1 study participant (5.0%) in Dose A reported 3 TEAEs (platelet count decreased, white blood cell count decreased, and neutrophil count decreased) leading to discontinuation of IMP. All 3 TEAEs were considered mild or moderate in intensity, related to IMP (as determined by the Investigator), and were resolving.
- No study participants withdrew from the study due to TEAEs.
- During the combined Initial Treatment Period and OLE Period, the majority of TEAEs were mild or moderate in intensity. No severe TEAEs were reported during the Initial Treatment Period. Two severe TEAEs were reported during the OLE Period for Dose B; the PTs were urinary tract infection and epilepsy, also reported as a serious TEAE.
- During the combined Initial Treatment Period and OLE Period, the incidence of IMP-related TEAEs (as determined by the Investigator) was 36.6% (15 study participants) and similar between Dose A and Dose B (8 study participants [40.0%] and 7 study participants [33.3%], respectively). The IMP-related TEAEs, by PT, reported by >1 study participant were nasopharyngitis and urinary tract infection (3 study participants [7.3%] each); and injection site erythema, conjunctivitis, upper respiratory tract infection (2 study participants [4.9%] each). All other IMP-related TEAEs, by PT, were reported by 1 study participant.
- No deaths occurred during the study.

Table 11. Summary of TEAEs – All Periods (SS)

Category	BKZ Dose A N=20 n (%) [#]	BKZ Dose B N=21 n (%) [#]	All Participants N=41 n (%) [#]
Any TEAEs	17 (85.0) [82]	17 (81.0) [75]	34 (82.9) [157]
Serious TEAEs	2 (10.0) [2]	3 (14.3) [4]	5 (12.2) [6]
TEAEs leading to withdrawal from the study	0	0	0
TEAEs leading to discontinuation of IMP	1 (5.0) [3]	0	1 (2.4) [3]
IMP-related TEAEs	8 (40.0) [19]	7 (33.3) [15]	15 (36.6) [34]
Severe TEAEs	0	2 (9.5) [2]	2 (4.9) [2]
All deaths (AEs leading to death)	0	0	0
Deaths (TEAEs leading to death)	0	0	0

AE=adverse event; BKZ=bimekizumab; IMP=investigational medicinal product; Q4W=every 4 weeks; SS=Safety Set; TEAE=treatment-emergent adverse event
Note: Dose A: BKZ 320mg Q4W in study participants ≥65kg and BKZ 160mg Q4W in study participants <65kg.
Note: Dose B: BKZ 64mg Q4W in study participants ≥65kg and BKZ 32mg Q4W in study participants <65kg.
Note: Weight-categorized dosing during the Initial Treatment Period was based on the study participant's weight at Baseline.
Note: n=number of study participants who reported at least 1 TEAE in that category.
Note: [#] is the number of individual occurrences of the TEAE in that category.
Note: This table only includes data from study participants who received at least 1 dose of BKZ.
Note: Includes all TEAEs reported from the first dose of BKZ up to 20 weeks after the last dose of BKZ.

For All Participants, TEAEs were most frequently reported in the SOCs of Infections and infestations (31 study participants [75.6%]) and the incidences were similar in both dose groups. The most commonly reported TEAEs by PT were nasopharyngitis (16 study participants [39.0%]), urinary tract infection (8 study participants [19.5%]), and upper respiratory tract infection (7 study participants [17.1%]), and the incidences of these TEAEs were similar in both dose groups.

Table 12. Incidence of TEAEs reported in ≥3 study participants per 100 participant-years – All Periods (SS)

MedDRA 23.1 SOC PT	BKZ Dose A N=20 100 participant-yrs=0.510 n (%) [#] Incidence (95% CI)	BKZ Dose B N=21 100 participant-yrs=0.530 n (%) [#] Incidence (95% CI)	All Participants N=41 100 participant-yrs=1.040 n (%) [#] Incidence (95% CI)
Any TEAE	17 (85.0) [82] 97.74 (56.94, 156.49)	17 (81.0) [75] 76.35 (44.47, 122.24)	34 (82.9) [157] 85.73 (59.37, 119.80)
Gastrointestinal disorders	2 (10.0) [4] 4.33 (0.52, 15.65)	4 (19.0) [4] 8.36 (2.28, 21.40)	6 (14.6) [8] 6.38 (2.34, 13.89)
Diarrhoea	1 (5.0) [1] 2.05 (0.05, 11.41)	2 (9.5) [2] 3.81 (0.46, 13.75)	3 (7.3) [3] 2.96 (0.61, 8.65)
Infections and infestations	15 (75.0) [44] 65.62 (36.73, 108.23)	16 (76.2) [39] 60.33 (34.49, 97.98)	31 (75.6) [83] 62.78 (42.66, 89.11)
Nasopharyngitis	9 (45.0) [17] 25.53 (11.68, 48.47)	7 (33.3) [12] 16.97 (6.82, 34.96)	16 (39.0) [29] 20.91 (11.95, 33.96)
Urinary tract infection	5 (25.0) [6] 11.58 (3.76, 27.01)	3 (14.3) [3] 6.03 (1.24, 17.61)	8 (19.5) [9] 8.60 (3.71, 16.95)
Upper respiratory tract infection	2 (10.0) [2] 4.13 (0.50, 14.93)	5 (23.8) [8] 11.03 (3.58, 25.73)	7 (17.1) [10] 7.47 (3.00, 15.39)
Pharyngitis	2 (10.0) [3] 4.26 (0.52, 15.41)	3 (14.3) [3] 6.18 (1.28, 18.07)	5 (12.2) [6] 5.24 (1.70, 12.23)
Conjunctivitis	2 (10.0) [4] 4.17 (0.50, 15.05)	1 (4.8) [2] 1.93 (0.05, 10.78)	3 (7.3) [6] 3.01 (0.62, 8.79)
Sinusitis	1 (5.0) [1] 1.99 (0.05, 11.06)	2 (9.5) [2] 3.93 (0.48, 14.20)	3 (7.3) [3] 2.96 (0.61, 8.66)
Musculoskeletal and connective tissue disorders	1 (5.0) [1] 2.06 (0.05, 11.48)	2 (9.5) [2] 3.88 (0.47, 14.02)	3 (7.3) [3] 3.00 (0.62, 8.76)
Arthralgia	1 (5.0) [1] 2.06 (0.05, 11.48)	2 (9.5) [2] 3.88 (0.47, 14.02)	3 (7.3) [3] 3.00 (0.62, 8.76)
Nervous system disorders	1 (5.0) [1] 2.06 (0.05, 11.49)	4 (19.0) [11] 8.60 (2.34, 22.03)	5 (12.2) [12] 5.27 (1.71, 12.29)
Epilepsy	0	3 (14.3) [3] 5.85 (1.21, 17.10)	3 (7.3) [3] 2.93 (0.61, 8.57)

BKZ=bimekizumab; CI=confidence interval; MedDRA=Medical Dictionary for Regulatory Activities; PT=Preferred Term; SOC=System Organ Class; SS=Safety Set; TEAE=treatment-emergent adverse event; yrs=years
Note: Dose A: BKZ 320mg Q4W in study participants ≥65kg and BKZ 160mg Q4W in study participants <65kg.
Note: Dose B: BKZ 64mg Q4W in study participants ≥65kg and BKZ 32mg Q4W in study participants <65kg.
Note: Weight-categorized dosing during the Initial Treatment Period was based on the study participant's weight at Baseline.
Note: n=number of study participants who reported at least 1 TEAE within the SOC/PT.
Note: [#] is the number of individual occurrences of the TEAE.
Note: Incidence=incidence of new cases per 100 participant-years and associated 95% CI.
Note: Includes all TEAEs reported from the first dose of BKZ up to 20 weeks after the last dose of BKZ.

Serious TEAEs

During the combined Initial Treatment Period and OLE Period, the incidence of serious TEAEs was low (5 study participants [12.2%]) and similar between Dose A and Dose B (2 study participants [10.0%] and 3 study participants [14.3%], respectively). The serious TEAE EAIR was 4.99/100 participants-years for All Participants; 4.10/100 participant-years in Dose A and 5.83/100 participant-years in Dose B.

Serious TEAEs were most frequently reported in the SOC of Nervous system disorders (3 study participants [7.3%]) and at a similar incidence for Dose A (1 study participant [5.0%]) and Dose B (2 study participants [9.5%]). None of the serious TEAEs were assessed as related to IMP (as determined by the Investigator). No serious infections were reported.

The following serious TEAEs, by PT, were experienced by 1 study participant (5.0%) each in Dose A:

- False positive tuberculosis test in the SOC of Investigations. The study participant was hospitalised for investigations after a positive IGRA test. The event was mild in intensity and resolved.
- Syncope in the SOC of Nervous system disorders. The study participant was hospitalised for investigations after fainting without losing consciousness. The event was mild in intensity and resolved. No treatment was provided, only lifestyle recommendations.

The following serious TEAEs, by PT, were experienced by 1 study participant (4.8%) each in Dose B:

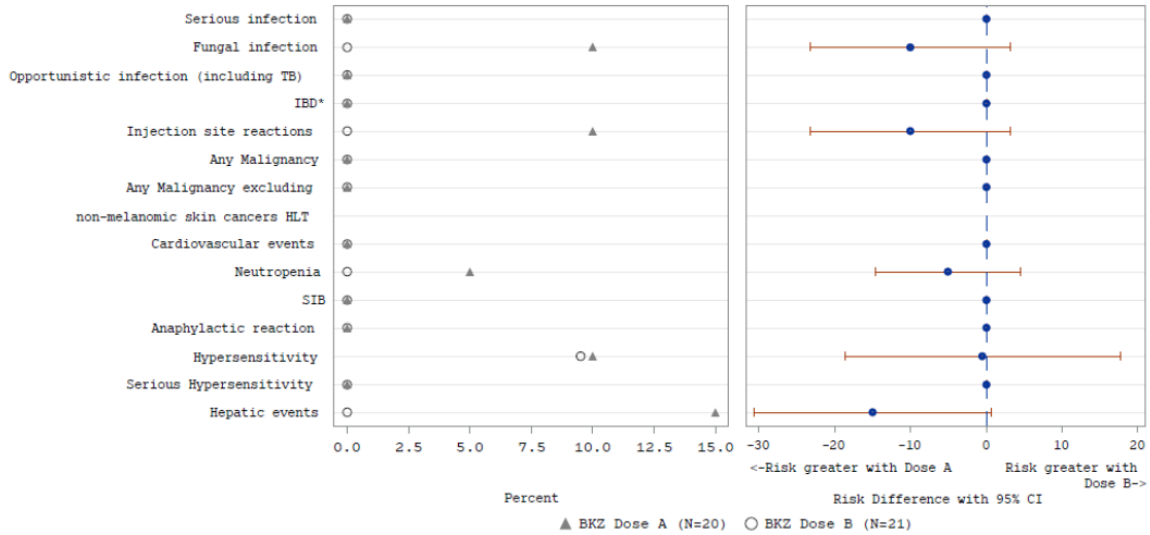
- Intentional product misuse in the SOC of Injury, poisoning and procedural complications and Generalised tonic clonic seizures in the SOC of Nervous system disorders were reported by the same study participant. Both events were moderate in intensity and resolved with sequelae. The study participant intentionally misused Benadryl which resulted in tonic-clonic seizure and a diagnosis of epilepsy. The study participant had a family history of epilepsy.
- Epilepsy in the SOC of Nervous system disorders. The event was severe in intensity and was resolving. The study participant was admitted to the hospital due to 3 episodes of loss of consciousness with convulsions and was diagnosed with generalised idiopathic epilepsy.
- Suicidal ideation in the SOC of Psychiatric disorders. The event, reported as suicidal thoughts without a plan, was moderate in intensity and was recovered. The event occurred within the context of cannabinoid withdrawal. The event was adjudicated as "non-suicidal" by the Neuropsychiatric Adjudication Committee and classified with event type suicidal ideation and no intent present. IMP was temporarily withdrawn; however, the study participant then continued on IMP and completed the study with no further suicidal ideation reported as a TEAE or via the monitoring scales.

Safety topics of interest and safety topics of special monitoring

Safety topics of interest and safety topics of special monitoring were prespecified and aligned with the conduct of the adult bimekizumab program. While no TEAEs of candidiasis were reported, the safety observations were otherwise consistent with the known bimekizumab safety profile and aligned with the patient population under investigation. During the combined Initial Treatment Period and OLE Period, the incidences of fungal infections, injection site reactions, neutropenia, hypersensitivity, and hepatic events were low and no meaningful differences were noted between Dose A and Dose B. There were no events of serious infection, opportunistic infection, IBD, malignant tumours, adjudicated SIB, cardiovascular events, serious hypersensitivity or anaphylactic reaction.

During the combined Initial Treatment Period and OLE Period in the SS, there was no evidence that the risk difference for Dose A vs Dose B was different from zero for fungal infection, injection site reactions, neutropenia, hypersensitivity, and hepatic events. There were no events of serious infection, opportunistic infection, IBD, malignant tumours, adjudicated SIB, cardiovascular events, serious hypersensitivity, or anaphylactic reaction in either group.

Figure 5. Incidence of safety topics of interest and safety topics of special monitoring and risk differences of BKZ Dose A vs BKZ Dose B – All Periods (SS)



BKZ=bimekizumab; CI=confidence interval; OLE=Open-label Extension; SS=Safety Set; TEAE=treatment-emergent adverse event
Note: Dose A: BKZ 320mg Q4W in study participants ≥65kg and BKZ 160mg Q4W in study participants <65kg.
Note: Dose B: BKZ 64mg Q4W in study participants ≥65kg and BKZ 32mg Q4W in study participants <65kg.
Note: Weight-categorized dosing during the Initial Treatment Period was based on the study participant's weight at Baseline.

Infections- There were no serious infections reported in the study. There were no opportunistic infections reported in the study. Two participants in Dose A had positive IGRA tests during the OLE Period; these were assessed and confirmed to be false positive tuberculosis tests. One of these 2 study participants was hospitalised for diagnostic procedure. There was no latent or active tuberculosis during the study. During the study, 2 study participants (4.9%) in total, both in Dose A, reported fungal infections. Both study participants reported an event of tinea pedis during the OLE Period. The events resolved under treatment and did not lead to study discontinuation. No events of candida were reported.

Injection site reactions- During the study, 2 study participants (4.9%) in total, both in Dose A, reported injection site reactions. An event of injection site erythema was reported by 1 study participant during the Initial Treatment Period and by 1 study participant during the OLE Period. Both TEAEs were nonserious, mild in intensity, did not lead to IMP discontinuation, and resolved.

Neutropenia- During the study, 1 study participant (2.4%) in total experienced a TEAE of neutropenia reported as neutrophil count decreased. This study participant in Dose A experienced slight neutropenia since Week 12 which further decreased to CTCAE Grade 2 during the OLE Period (but never reached Grade 3). Despite the investigator's requests, the study participant did not have a hematological consultation. Neutrophil count decreased, as well as platelet count decreased (Grade 1) and White blood cell count decreased (Grade 2) led to discontinuation of IMP. One other study participant with low neutrophils (transient CTCAE Grade 3) in Dose B, had chronically low neutrophils since Screening, and at Week 64, had transient CTCAE Grade 3 markedly low neutrophils that was not associated with an infection.

Hypersensitivity reactions- During the study, 4 study participants (9.8%; EAIR: 4.01/100 participants-years) in total experienced a TEAE of hypersensitivity; 2 participants in Dose A (10.0%) and 2 participants in Dose B (9.5%). Three TEAEs were in the SOC of Skin and subcutaneous tissue disorders

(Dermatitis and eczema HLT), and the remaining event was the PT of rhinitis allergic. There were no serious hypersensitivity TEAEs reported in the study.

Hepatic events and PDILI- No study participants met the criteria for potential Hy's Law (ALT or AST ≥3xULN and total bilirubin ≥2xULN in the absence of ≥2xULN ALP). Liver function test elevations are discussed below under Clinical Laboratory values. During the study, 3 study participants (7.3%) in total, all in Dose A, reported a hepatic event. One study participant reported ALT increased, hepatic steatosis, and transaminases increased; 1 study participant reported ALT increased and AST increased; and 1 study participant reported steatohepatitis. With the exception of 1 event of ALT increased reported during the Initial Treatment Period, all other events were reported during the OLE Period. These hepatic TEAEs were nonserious, mild or moderate in intensity, and did not lead to study discontinuation.

Clinical laboratory evaluations

- There was no clinically meaningful pattern of change from Baseline observed in haematology or biochemistry values. During the study, 1 study participant in Dose A reported the TEAEs of anaemia and leukopenia related to haematology parameters (included in SOC Blood and lymphatic disorders). One additional study participant, also in Dose A, reported TEAEs of platelet count decreased, white blood cell count decreased, and neutrophil count decreased, leading to discontinuation of IMP.
- During the combined Initial Treatment Period and OLE Period, AST/ALT 3×ULN was observed in 3 study participants in Dose A. Two study participants have clear alternative aetiologies (hepatosteatosis), and the third participant has a plausible aetiology for the transient elevation (viral infection resulting in ALT elevation with subsequent decreases in neutrophils, leukocytes, and platelets). No cases of Hy's Law were reported during the study.

Other safety evaluations

- No clinically meaningful pattern of change from Baseline was observed in vital signs.
- Overall, height and weight of study participants increased, while BMI was relatively stable.
- Of note, study participants receiving bimekizumab 64mg Q4W had a higher mean BMI at Baseline and during the study compared with other participants.
- Across the study, C-SSRS responses indicating suicidal ideation and/or PHQ-9 scores indicating depression were infrequent, and no dose relationship was noted.

Immunogenicity

Overall ADAb and NAb status

- During the Initial Treatment Period, 50.0% and 28.6% of study participants in Dose A and Dose B, respectively, were ADAb positive following 16 weeks of bimekizumab treatment. Of the participants who were ADAb positive, 20.0% in Dose A and 83.3% in Dose B were also NAb positive. All NAb positive study participants were NAb positive for both IL-17AA and IL-17FF.
- During the combined Initial Treatment Period and OLE Period, 68.4% and 45.0% of study participants in Dose A and Dose B, respectively, developed ADAb following 124 weeks of bimekizumab treatment. Of the participants who were ADAb positive, 30.8% in Dose A and 88.9% in Dose B were also NAb positive. The majority of NAb positive study participants were NAb positive for both IL-17AA and IL-17FF.

- There was no ADAb positivity prior to the first bimekizumab dose in either dose group. After the first dose of bimekizumab, the incidence of treatment-emergent ADAb positivity increased over the 124-week study duration, with most ADAb positivity occurring by Week 20 (84.6% [11/13 participants] for Dose A and 88.9% [8/9 participants] for Dose B).
- No study participant had a first occurrence of ADAb positivity after Week 64.

Table 13. ADAb status overall and in each ADAb subcategory – Initial Treatment Period (SS)

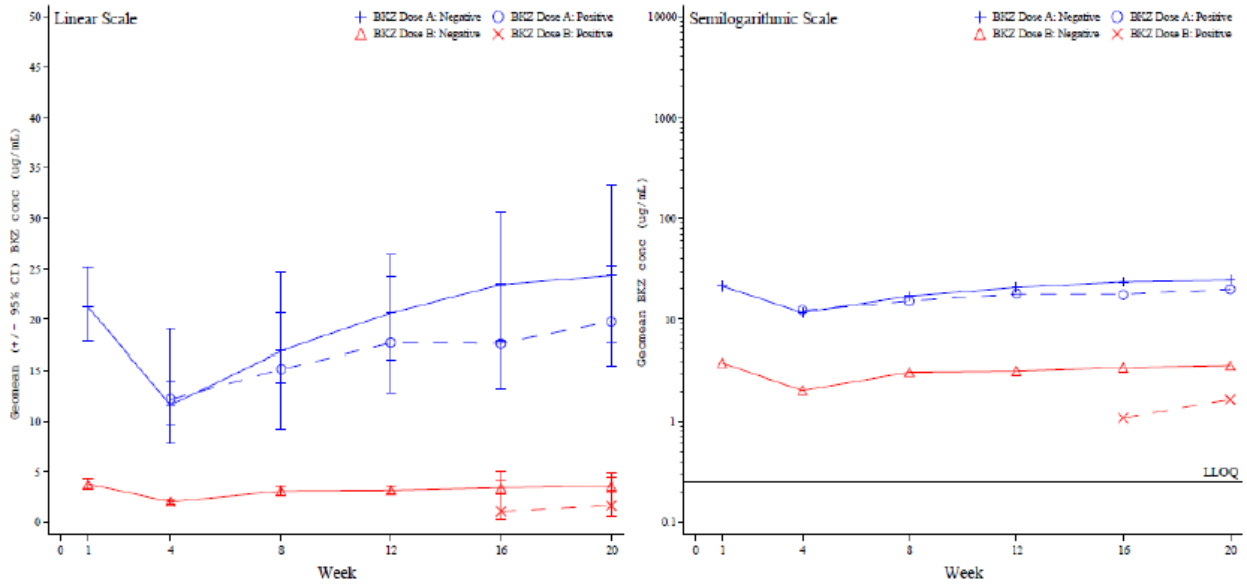
	BKZ Dose A N=20 n (%)	BKZ Dose B N=21 n (%)
Overall up to Week 16 [a]		
Positive	10 (50.0)	6 (28.6)
Negative	10 (50.0)	15 (71.4)
Total	20 (100)	21 (100)
Missing	0	0
Overall up to Week 20 [a]		
Positive	11 (55.0)	8 (38.1)
Negative	8 (40.0)	13 (61.9)
Total	19 (95.0)	21 (100)
Missing	1 (5.0)	0
Overall up to Week 16 – Efficacy subgroup analyses [b]		
Positive	5 (25.0)	2 (9.5)
Negative	15 (75.0)	19 (90.5)
Total	20 (100)	21 (100)
Missing	0	0
Incidence by ADAb subcategory [c]		
1 - Pre-ADAb negative – TE-ADAb negative	8 (40.0)	13 (61.9)
2 - Pre-ADAb negative – TE-ADAb positive	11 (55.0)	8 (38.1)
3 - Pre-ADAb positive – TE-reduced ADAb	0	0
4 - Pre-ADAb positive – TE-unaffected ADAb positive	0	0
5 - Pre-ADAb positive – TE-ADAb boosted positive	0	0
6 - ADAb inconclusive	0	0
7 - Total TE (combination of 2 and 5)	11 (55.0)	8 (38.1)
8 - Pre-ADAb positive (combination of 3, 4, and 5)	0	0
9 - Missing	1 (5.0)	0

Impact of immunogenicity on PK

- Overall, the impact of immunogenicity on PK and efficacy (as measure by PASI90 and IGA 0/1 up to Week 124) was not considered to be clinically meaningful.
  - Up to Week 20, geometric mean bimekizumab plasma concentrations in cumulative ADAb positive study participants were slightly lower than ADAb negative participants for both Dose A and Dose B (Figure 6 below). For Dose A, at Week 20, the geometric mean trough plasma concentrations were 19.778µg/mL and 24.328µg/mL in cumulative ADAb positive and ADAb negative participants, respectively. For Dose B, at

Week 20, the geometric mean trough plasma concentrations were 1.644µg/mL and 3.583µg/mL in cumulative ADAb positive and ADAb negative participants, respectively.

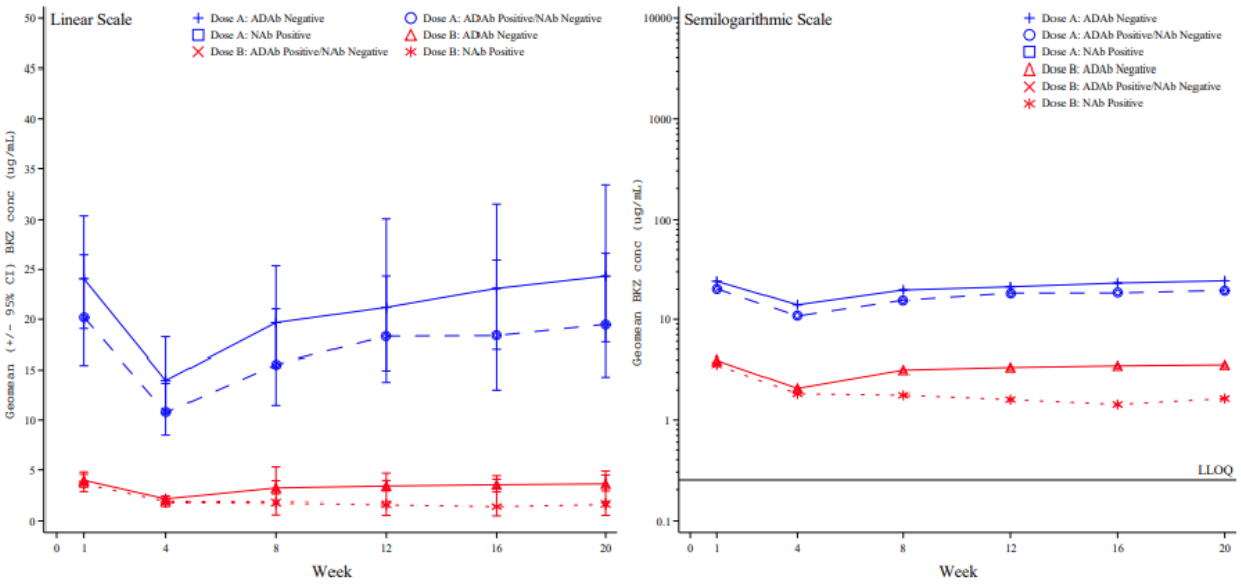
Figure 6. Geometric mean of bimekizumab plasma concentration over time by cumulative ADAb status – Initial Treatment Period (PK-PPS)



ADAb=antidrug antibody; BKZ=bimekizumab; BLQ=below the limit of quantification; CI=confidence interval; LLOQ=lower limit of quantification; PK-PPS=Pharmacokinetic Per-protocol Set; Q4W=every 4 weeks
Note: Dose A: BKZ 320mg Q4W in participants ≥65kg and BKZ 160mg Q4W in participants <65kg.
Note: Dose B: BKZ 64mg Q4W in participants ≥65kg and BKZ 32mg Q4W in participants <65kg.
Note: Weight-categorized dosing during the Initial Treatment Period was based on the participant's weight at Baseline.
Note: Values BLQ were replaced by the value of LLOQ/2=0.125µg/mL in the calculations of geometric mean.
Note: Geometric mean was only calculated if at least 2/3 of the concentrations were quantified at the respective timepoint.
Note: The ADAb status (positive or negative or missing) was considered in a cumulative manner at each timepoint. A study participant was counted positive from the first visit at which the study participant achieved a positive ADAb sample result to the end of the treatment period, regardless of any missing/inconclusive or negative ADAb sample result. If a study participant had only negative ADAb samples or only 1 missing/inconclusive sample with all negative ADAb samples up to that timepoint, the study participant was classified as negative. Otherwise, the study participant was classified in the missing ADAb category.

– For Dose A, the impact of overall NAb status on bimekziumab plasma concentration up to Week 20 could not be assessed due to the low number of NAb positive study participants (n=2 of 11 ADAb-positive participants (Figure 7 below). For Dose B, up to Week 20, geometric mean bimekizumab plasma concentrations tended to be lower in overall NAb positive study participants (1.644µg/mL at Week 20; n=7) compared with overall ADAb negative study participants (3.583µg/mL at Week 20; n=12); however, interpretation of the results is limited due to the low number of participants in each subgroup. An impact of NAb positivity on bimekizumab plasma concentrations cannot be excluded.

Figure 7. Geometric mean of bimekizumab plasma concentration over time by overall NAb status up to Week 20 – Initial Treatment Period (PK-PPS)



ADAb=antidrug antibody; BKZ=bimekizumab; BLQ=below the limit of quantification; CI=confidence interval; IL=interleukin; LLOQ=lower limit of quantification; NAb=neutralizing antibodies; PK-PPS=Pharmacokinetic Per-protocol Set; Q4W=every 4 weeks
Note: Dose A: BKZ 320mg Q4W in participants ≥65kg and BKZ 160mg Q4W in participants <65kg.
Note: Dose B: BKZ 64mg Q4W in participants ≥65kg and BKZ 32mg Q4W in participants <65kg.
Note: Weight-categorized dosing during the Initial Treatment Period was based on the participant's weight at Baseline.
Note: Values BLQ were replaced by the value of LLOQ/2=0.125µg/mL in the calculations of geometric mean.
Note: Geometric mean was only calculated if at least 2/3 of the concentrations were quantified at the respective timepoint and n≥3.
Note: ADAb negative is defined as having all samples reported as negative or having only one missing/inconclusive sample. NAb positive is defined as one or more positive samples (IL-17AA positive, IL-17FF positive, or both) at Baseline or post-Baseline (regardless of missing samples). NAb negative is defined as no NAb positive samples for IL-17AA and IL-17FF at Baseline or post-Baseline. This group will also include subjects who have only 1 missing sample and all other available samples during the period of interest are negative.

Impact of ADAb/NAb status on efficacy

– For Dose A, the PASI90 and IGA0/1 response rates were similar in both ADAb and Nab positive participants compared to ADAb negative participants, indicating no impact of ADAb or NAb positivity on efficacy. For Dose B, the PASI90 and IGA0/1 response rates were similar in ADAb and NAb positive participants compared to ADAb negative participants over the first 52 weeks of treatment. After the first 52 weeks of treatment, an impact of NAb positivity on PASI90 and IGA0/1 response rates for Dose B cannot be excluded.

Impact of ADAb/NAb status on safety

- Overall, no notable trends were observed in ADAb or NAb positivity and safety, as assessed by TEAE incidence. However, it should be noted that the numbers of events for individual PTs were relatively low, and therefore, interpretation of these data should be made with caution.
- In ADAb positive study participants, the EAIR for TEAEs reported on or after the first ADAb positive result (67.93/100 participant-years) was not higher compared with the EAIR for TEAEs reported before the first ADAb positive result (170.91/100 participant-years) or the EAIR of TEAEs for study participants who were always ADAb negative (101.66/100 participant-years).
- In NAb positive study participants, the EAIR for TEAEs (68.09/100 participant-years) was not higher compared with the EAIR for TEAEs in NAb negative participants (74.33/100 participant-years) or the EAIR for TEAEs in ADAb negative study participants (101.66/100 participant-years).

- As discussed, no anaphylactic reactions were reported. Hypersensitivity TEAEs were most frequently reported in the HLT of Dermatitis and eczema during the study; none were reported in ADAb positive study participants. There was no impact from ADAb or NAb positivity identified on injection site reaction TEAEs.

2.3.3. Discussion on clinical aspects

In the open-label PS0020 study, the baseline disease characteristics were reflective of a population with moderate to severe plaque PSO.

PK

The steady-state concentrations of bimekizumab were achieved 16 to 20 weeks after the first dose and were generally maintained thereafter, aligning with the established PK profile in adults. As expected, Dose A provided the same systemic bimekizumab exposure as the 320mg Q4W adult dose, and Dose B provided a lower systemic bimekizumab exposure. In the Combined Initial Treatment Period and OLE Period for Dose A, steady state trough concentrations at Week 124 in participants ≥65kg who received bimekizumab 320mg Q4W (20.821µg/mL) were slightly higher compared with participants <65kg who received bimekizumab 160mg Q4W (15.578µg/mL). In contrast to Dose A, trough concentrations in Dose B were slightly lower than expected and had a high geometric CV%, particularly among participants ≥65kg receiving bimekizumab 64mg Q4W (2.349µg/mL and 216.560% at Week 124) compared with participants <65kg receiving bimekizumab 32mg Q4W (3.707µg/mL and 43.506% at Week 124). This may be due to the potential impact of NAb positivity on PK, which cannot be ruled out.

Report CL0542 is not included in this PAM assessment, this approach is accepted and the evaluation of dose selection for paediatric participants 6 to <18 years of age will take place in the intended extension of indication application.

Safety

While no TEAEs of candidiasis were reported, the safety observations were otherwise consistent with the known bimekizumab safety profile and aligned with the patient population under investigation. For All Participants, TEAEs were most frequently reported in the SOCs of Infections and infestations (31 study participants [75.6%]) and the incidences were similar in both dose groups. The most commonly reported TEAEs by PT were nasopharyngitis (16 study participants [39.0%]), urinary tract infection (8 study participants [19.5%]), and upper respiratory tract infection (7 study participants [17.1%]), and the incidences of these TEAEs were similar in both dose groups. These are consistent with known ADRs of bimekizumab.

During the combined ITP and OLE Period, the incidences of fungal infections, injection site reactions, neutropenia, hypersensitivity, and hepatic events were low and no meaningful differences were noted between Dose A and Dose B. There were no events of serious infection, opportunistic infection, IBD, malignant tumours, adjudicated suicidal ideation/behaviour (SIB), cardiovascular events, serious hypersensitivity or anaphylactic reaction. There were no notable trends observed in ADAb or NAb positivity and no clinically relevant impact identified on safety, as assessed by TEAE incidence.

Efficacy

In this open-label study, the efficacy of bimekizumab, as measured by PASI and IGA response, was comparable to or higher than what has been observed in adults. Differences between Dose A and Dose B across efficacy endpoints were observed at Week 4. Overall, efficacy was sustained through the end

of the study (Week 124), with a more sustained effect for Dose A. In addition, improvements to quality of life were observed in this patient population over 124 weeks, as measured by CDLQI.

Immunogenicity

Of note, aspects of the immunogenicity profile reported in PS0020 differs from reported outcomes in the adult population. The percentage of those participants who were ADAb positive and also NAb positive in Dose B, was higher than reported in the authorised adult populations during the combined Initial Treatment Period and OLE Period, of the participants who were ADAb positive, 30.8% in Dose A and 88.9% in Dose B were also NAb positive. In addition, a high percentage of subjects developed ADAb following 124 weeks of bimekizumab treatment in Dose A- during the combined Initial Treatment Period and OLE Period, 68.4% and 45.0% of study participants in Dose A and Dose B, respectively. Immunogenicity results in the adult population are described up to 52 weeks in the SmPC therefore no direct comparison can be made. The MAH is however advised to adequately characterise and compare potential differing immunogenicity profiles in the adolescent and paediatric populations compared to the adult populations in an intended extension of indication in these populations. In the context of PS0020, it is acknowledged that interpretation of the results is limited due to the low number of participants in each subgroup (anti-drug antibody [ADAb] or neutralising antibody [NAb] positivity). It is also noted that immunogenicity had no apparent impact on efficacy and safety outcomes however an impact of NAb positivity on bimekizumab plasma concentrations cannot be excluded.

Proposed updates to the SmPC

No updates to the product information are proposed as part of this procedure. The MAH has however proposed minor QRD related updates to the SmPC and patient leaflet to be submitted at the next regulatory opportunity. This is agreed.

Based on the primary PK and secondary safety, efficacy and immunogenicity results reported for PS0020, the proposed MAH approach to not update the PI is agreed. PK, safety and efficacy results are largely consistent with profiles in the adult populations. Potential differences in the immunogenicity profile could not be out-ruled however, and results are considered inconclusive and require further evaluation and clinical context, for the impact on the PK profile in particular.

The MAH is advised to adequately characterise and compare potential differing immunogenicity profiles in the adolescent and paediatric populations to the adult populations in an intended extension of indication in these populations. Given the ongoing double-blind, active-controlled, Phase 3 study (PS0021) and the MAH's intention to further update the PI upon the availability of data from the Phase 3 study, no further action is warranted as part of this procedure.

Upon request, the MAH has clarified the status of the PS0021 study as currently ongoing and is not yet fully recruited.

3. CHMP's overall conclusion and recommendation

This submission has been made to fulfil the legal obligation under Article 46 of Regulation (EC) No 1901/2006.

PS0020 was an open-label study designed to support the clinical development of bimekizumab in an adolescent PSO population and inform the bimekizumab dose and dosing regimen to be tested in the subsequent Phase 3 pivotal study.

Based on the primary PK and secondary safety, efficacy and immunogenicity results reported for PS0020, the proposed MAH approach to not include the results of study PS0020 in the PI is agreed. PK, safety and efficacy results are consistent with profiles in the adult populations. Potential differences in

the immunogenicity profile could not be out-ruled however, and results are considered inconclusive and require further evaluation and clinical context, for the impact on the PK profile in particular.

The proposed updated QRD wording in SmPC Section 4.2 more accurately reflects the current status of development for potential use in paediatric populations and minor editorial updates only could be accepted as representing PS0020 data. This decision is in the context that the PS0020 data is inconclusive in terms of long-term PK profile and immunogenicity effects and updates to the product information is not warranted at this timepoint. In addition, it is agreed that the intention to further update the product information with paediatric data upon the availability of data from the Phase 3 study, would provide more robust and clinically relevant paediatric data.

☒ **Fulfilled.**

No further action required, however further data are expected in the context of a variation/marketing extension prior any conclusion on final product information amendments is made.

4. Request for supplementary information

Based on the data submitted, the MAH should address the following questions as part of this procedure:

1. The MAH is requested to provide an update on the current status of the PS0021 study.

5. MAH responses to Request for supplementary information

Question 1

The MAH is requested to provide an update on the current status of the PS0021 study.

Summary of the MAH's response

The PS0021 study started on 25-Jun-2024 (first participant screened). This global study (including sites in Europe, the United States, Canada, and Japan) is currently ongoing but is not yet fully recruited.

Assessment of the MAH's response

The MAH has submitted a clarification on the status of Study PS0021. This is accepted.

Conclusion

Issue resolved.

Annex. Line listing of all the studies included in the development program

The studies should be listed by chronological date of completion:

Nonclinical studies

Product Name: Bimzelx Active substance: Bimekizumab

Study title	Study number	Date of completion	Date of submission of final study report
Enhanced study for effects on pre- and postnatal development in cynomolgus monkeys with a six months lactation /maturation phase	NCD2676	15-Apr-2019	15-Jul-2020 (final study report included in the initial marketing authorisation application)

Clinical studies

Product Name: Bimzelx Active substance: Bimekizumab

Study title	Study number	Date of completion	Date of submission of final study report
A multicenter, open-label, randomized study to assess the pharmacokinetics, safety, and efficacy of two doses of bimekizumab in adolescent study participants with moderate to severe plaque psoriasis	PS0020	12-Mar-2025	08-Sep-2025
A multicenter, randomized, parallel-group, double-blind, active-controlled study to evaluate the efficacy and safety of bimekizumab compared to ustekinumab	PS0021	By 30-Nov-2030 (per the agreed Paediatric Investigation Plan)	Within 6 months following the date of completion (Last study participant last visit)

in children and adolescents from 6 years to less than 18 years of age with moderate to severe plaque psoriasis			