



## Clinical trial results:

### A Multicenter, Phase 2A, Randomized, Investigator-Blind, Subject-Blind, Parallel-Group Study to Evaluate the Efficacy and Safety of Bimekizumab and Certolizumab Pegol in Subjects With Active Ankylosing Spondylitis

#### Summary

EudraCT number	2017-000957-37
Trial protocol	CZ DE GR NL
Global end of trial date	25 May 2020

#### Results information

Result version number	v1
This version publication date	10 June 2021
First version publication date	10 June 2021

#### Trial information

##### Trial identification

Sponsor protocol code	AS0013
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##### Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT03215277
WHO universal trial number (UTN)	-

Notes:

#### Sponsors

Sponsor organisation name	UCB Biopharma SRL
Sponsor organisation address	Allée de la Recherche 60, Brussels, Belgium, 1070
Public contact	Clin Trial Reg & Results Disclosure, UCB BIOSCIENCES GmbH, clinicaltrials@ucb.com
Scientific contact	Clin Trial Reg & Results Disclosure, UCB BIOSCIENCES GmbH, clinicaltrials@ucb.com

Notes:

#### Paediatric regulatory details

Is trial part of an agreed paediatric investigation plan (PIP)	No
Does article 45 of REGULATION (EC) No 1901/2006 apply to this trial?	No
Does article 46 of REGULATION (EC) No 1901/2006 apply to this trial?	No

Notes:

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**Results analysis stage**

Analysis stage	Final
Date of interim/final analysis	23 June 2020
Is this the analysis of the primary completion data?	Yes
Primary completion date	25 May 2020
Global end of trial reached?	Yes
Global end of trial date	25 May 2020
Was the trial ended prematurely?	No

Notes:

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**General information about the trial**

Main objective of the trial:

Evaluate the efficacy of bimekizumab compared to certolizumab pegol (CZP) in the treatment of subjects with active Ankylosing Spondylitis (AS)

Protection of trial subjects:

During the conduct of the study all participants were closely monitored.

Background therapy:

Background therapy as permitted in the protocol

Evidence for comparator:

Proof of concept study to compare the efficacy and safety of the already market-authorized tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ) Inhibitor CZP vs the investigational IL17 A/F inhibitor BKZ in the AS-indication.

Actual start date of recruitment	04 October 2017
Long term follow-up planned	No
Independent data monitoring committee (IDMC) involvement?	Yes

Notes:

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**Population of trial subjects****Subjects enrolled per country**

Country: Number of subjects enrolled	Czechia: 11
Country: Number of subjects enrolled	Germany: 10
Country: Number of subjects enrolled	Greece: 6
Country: Number of subjects enrolled	Moldova, Republic of: 7
Country: Number of subjects enrolled	Netherlands: 1
Country: Number of subjects enrolled	Poland: 31
Country: Number of subjects enrolled	Russian Federation: 9
Country: Number of subjects enrolled	United States: 1
Worldwide total number of subjects	76
EEA total number of subjects	59

Notes:

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**Subjects enrolled per age group**

In utero	0
Preterm newborn - gestational age < 37 wk	0

Newborns (0-27 days)	0
Infants and toddlers (28 days-23 months)	0
Children (2-11 years)	0
Adolescents (12-17 years)	0
Adults (18-64 years)	72
From 65 to 84 years	4
85 years and over	0

## Subject disposition

### Recruitment

Recruitment details:

The study started to enroll study participants in October 2017 and concluded in May 2020.

### Pre-assignment

Screening details:

The Participant Flow refers to the Randomized Set (RS).

### Period 1

Period 1 title	Overall Study (overall period)
Is this the baseline period?	Yes
Allocation method	Randomised - controlled
Blinding used	Double blind
Roles blinded	Subject, Investigator, Carer, Assessor

Blinding implementation details:

This is an investigator-blind and subject-blind study.

### Arms

Are arms mutually exclusive?	Yes
<b>Arm title</b>	Certolizumab pegol

Arm description:

Participants received certolizumab pegol (CZP) 400 milligrams (mg) subcutaneously (sc) every 2 weeks (Q2W) at Weeks 0, 2, and 4 (loading dose) followed by CZP 200 mg sc Q2W in Weeks 6 to 10 and 400 mg every 4 weeks (Q4W) from Week 12 to Week 44.

Arm type	Active comparator
Investigational medicinal product name	Certolizumab Pegol
Investigational medicinal product code	CDP870
Other name	CZP, Cimzia
Pharmaceutical forms	Solution for injection in pre-filled syringe
Routes of administration	Subcutaneous use

Dosage and administration details:

Participants received CZP 400 mg Q2W at Weeks 0, 2, and 4 (loading dose) followed by CZP 200 mg Q2W in Weeks 6 to 10 and 400 mg Q4W from Week 12 to Week 44.

<b>Arm title</b>	Bimekizumab
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Arm description:

Participants received bimekizumab (BKZ) 160 mg sc Q2W from Week 0 through Week 10 and 320 mg sc Q4W from Week 12 to Week 44. In addition, participants received placebo injection to maintain the blind for the CZP loading dose at Baseline, Week 2 and Week 4.

Arm type	Experimental
Investigational medicinal product name	Placebo
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Solution for injection
Routes of administration	Subcutaneous use

Dosage and administration details:

Participants received placebo injection to maintain the blind for the CZP loading dose at Baseline, Week 2 and Week 4.

Investigational medicinal product name	Bimekizumab
Investigational medicinal product code	UCB4940
Other name	BKZ
Pharmaceutical forms	Solution for injection

Routes of administration	Subcutaneous use
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Dosage and administration details:

Participants received BKZ 160 mg Q2W from Week 0 through Week 10 and 320 mg Q4W from Week 12 to Week 44.

<b>Number of subjects in period 1</b>	Certolizumab pegol	Bimekizumab
Started	25	51
Completed	22	46
Not completed	3	5
Adverse event, serious fatal	1	-
Participant was unable to attend clinic visit	-	1
Adverse event, non-fatal	2	3
Lost to follow-up	-	1

## Baseline characteristics

### Reporting groups

Reporting group title	Certolizumab pegol
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Reporting group description:

Participants received certolizumab pegol (CZP) 400 milligrams (mg) subcutaneously (sc) every 2 weeks (Q2W) at Weeks 0, 2, and 4 (loading dose) followed by CZP 200 mg sc Q2W in Weeks 6 to 10 and 400 mg every 4 weeks (Q4W) from Week 12 to Week 44.

Reporting group title	Bimekizumab
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Reporting group description:

Participants received bimekizumab (BKZ) 160 mg sc Q2W from Week 0 through Week 10 and 320 mg sc Q4W from Week 12 to Week 44. In addition, participants received placebo injection to maintain the blind for the CZP loading dose at Baseline, Week 2 and Week 4.

Reporting group values	Certolizumab pegol	Bimekizumab	Total
Number of subjects	25	51	76
Age categorical			
Units: Subjects			
<=18 years	0	0	0
Between 18 and 65 years	25	47	72
>=65 years	0	4	4
Age continuous			
Units: years			
arithmetic mean	39.7	40.3	
standard deviation	± 8.2	± 12.5	-
Gender categorical			
Units: Subjects			
Female	4	7	11
Male	21	44	65

## End points

### End points reporting groups

Reporting group title	Certolizumab pegol
Reporting group description: Participants received certolizumab pegol (CZP) 400 milligrams (mg) subcutaneously (sc) every 2 weeks (Q2W) at Weeks 0, 2, and 4 (loading dose) followed by CZP 200 mg sc Q2W in Weeks 6 to 10 and 400 mg every 4 weeks (Q4W) from Week 12 to Week 44.	
Reporting group title	Bimekizumab
Reporting group description: Participants received bimekizumab (BKZ) 160 mg sc Q2W from Week 0 through Week 10 and 320 mg sc Q4W from Week 12 to Week 44. In addition, participants received placebo injection to maintain the blind for the CZP loading dose at Baseline, Week 2 and Week 4.	
Subject analysis set title	Certolizumab pegol (SS)
Subject analysis set type	Safety analysis
Subject analysis set description: Participants received CZP 400 mg sc Q2W at Weeks 0, 2, and 4 (loading dose) followed by CZP 200 mg sc Q2W in Weeks 6 to 10 and 400 mg Q4W from Week 12 to Week 44. Participants formed the Safety Set (SS).	
Subject analysis set title	Bimekizumab (SS)
Subject analysis set type	Safety analysis
Subject analysis set description: Participants received BKZ 160 mg sc Q2W from Week 0 through Week 10 and 320 mg sc Q4W from Week 12 to Week 44. In addition, participants received placebo injection to maintain the blind for the CZP loading dose at Baseline, Week 2 and Week 4. Participants formed the SS.	
Subject analysis set title	Certolizumab pegol (PPS)
Subject analysis set type	Per protocol
Subject analysis set description: Participants received CZP 400 mg sc Q2W at Weeks 0, 2, and 4 (loading dose) followed by CZP 200 mg sc Q2W in Weeks 6 to 10 and 400 mg Q4W from Week 12 to Week 44. Participants formed the Per Protocol Set (PPS).	
Subject analysis set title	Bimekizumab (PPS)
Subject analysis set type	Per protocol
Subject analysis set description: Participants received BKZ 160 mg sc Q2W from Week 0 through Week 10 and 320 mg sc Q4W from Week 12 to Week 44. In addition, participants received placebo injection to maintain the blind for the CZP loading dose at Baseline, Week 2 and Week 4. Participants formed the PPS.	

### Primary: Change from Baseline in Ankylosing Spondylitis Disease Activity Score (ASDAS) at Week 12

End point title	Change from Baseline in Ankylosing Spondylitis Disease Activity Score (ASDAS) at Week 12
End point description: ASDAS was calculated as the sum of the results from the following components: $0.121 \times \text{Total spinal pain (Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) Question 2 result)}$ , $0.058 \times \text{Duration of morning stiffness (BASDAI Question 6 result)}$ , $0.110 \times \text{PGADA}$ , $0.073 \times \text{Peripheral pain/swelling (BASDAI Question 3 result)}$ , $0.579 \times (\text{natural logarithm of the CRP [mg/L]} + 1)$ . Spinal pain, PGADA, duration of morning stiffness, peripheral pain/swelling were all assessed on a numerical scale (0 to 10 units). There is a minimum score of 0.980 for ASDAS (as a fixed value of 2 was assumed for values of hs-CRP below the LLOQ), but no defined upper score. The change from Baseline is calculated, a negative value indicating improvement and a positive value worsening. Posterior means and 95% credible intervals in each group are presented. PPS consisted of all study participants in the FAS who had no important protocol deviation affecting the primary efficacy variable. N signifies participants evaluable.	
End point type	Primary
End point timeframe: From Baseline to Week 12	

End point values	Certolizumab pegol (PPS)	Bimekizumab (PPS)		
Subject group type	Subject analysis set	Subject analysis set		
Number of subjects analysed	24	46		
Units: scores on a scale				
arithmetic mean (confidence interval 95%)	-1.83 (-2.11 to -1.55)	-2.06 (-2.30 to -1.81)		

## Statistical analyses

Statistical analysis title	Statistical Analysis 1
Statistical analysis description:	
Results were based on a complete case (ie, data as observed) Bayesian linear model with the change from Baseline in ASDAS as the independent variable. Treatment was included as a predictor in the model and Baseline ASDAS as a covariate. The mean posterior difference and 95% credible interval were presented for the BKZ vs CZP comparison.	
Comparison groups	Certolizumab pegol (PPS) v Bimekizumab (PPS)
Number of subjects included in analysis	70
Analysis specification	Pre-specified
Analysis type	superiority
Method	Regression, Linear
Parameter estimate	Mean Posterior Difference
Point estimate	0.23
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.14
upper limit	0.6

Statistical analysis title	Statistical Analysis 2
Statistical analysis description:	
Results were based on a complete case (ie, data as observed) Bayesian linear model with the change from Baseline in ASDAS as the independent variable. Treatment was included as a predictor in the model and Baseline ASDAS as a covariate. Pr[Diff>0%](%) refers to the probability that the mean change from Baseline in ASDAS in the BKZ group was greater than the mean change from Baseline in ASDAS in the CZP group. 0% Confidence Interval (CI) [0,999] was used a placeholder.	
Comparison groups	Certolizumab pegol (PPS) v Bimekizumab (PPS)
Number of subjects included in analysis	70
Analysis specification	Pre-specified
Analysis type	superiority
Method	Regression, Linear
Parameter estimate	PR[Diff > 0%](%)
Point estimate	88.4



Confidence interval	
level	Other: 0 %
sides	2-sided
lower limit	0
upper limit	999

### Primary: Percentage of participants with adverse events (AE) during the study conduct

End point title	Percentage of participants with adverse events (AE) during the study conduct <sup>[1]</sup>
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End point description:

An AE was any untoward medical occurrence in a patient or clinical investigation participant administered a pharmaceutical product, which does not necessarily have a causal relationship with this treatment. An AE could therefore be any unfavorable and unintended sign, symptom, or disease temporally associated with the use of a medicinal (investigational) product, whether or not related to the medicinal (investigational) product. A treatment-emergent adverse event (TEAE) was defined as any AE with a start date/time at the time of or after the first dose of IMP up until 140 days after the last dose of IMP. Safety Set (SS) consisted of all randomized study participants who received at least 1 dose (full or partial) of the IMP.

End point type	Primary
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End point timeframe:

From Baseline until Safety Follow-Up Visit (up to Week 64)

Notes:

[1] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: No formal statistical hypothesis testing was planned for this study. Results were summarized in tables as descriptive statistics only.

End point values	Certolizumab pegol (SS)	Bimekizumab (SS)		
Subject group type	Subject analysis set	Subject analysis set		
Number of subjects analysed	25	51		
Units: percentage of participants				
number (not applicable)	76.0	82.4		

### Statistical analyses

No statistical analyses for this end point

### Primary: Percentage of participants with serious adverse events (SAEs) during the study conduct

End point title	Percentage of participants with serious adverse events (SAEs) during the study conduct <sup>[2]</sup>
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End point description:

An SAE was any untoward medical occurrence that at any dose:

- Resulted in death
- Is life-threatening
- Required in patient hospitalisation or prolongation of existing hospitalisation
- Is a congenital anomaly or birth defect
- Is an infection that requires treatment with parenteral antibiotics
- Other important medical events which based on medical or scientific judgement may jeopardised the participants, or may require medical or surgical intervention to prevent any of the above. A TEAE was defined as any AE with a start date/time at the time of or after the first dose of IMP up until 140 days

after the last dose of IMP. Safety Set (SS) consisted of all randomized study participants who received at least 1 dose (full or partial) of the IMP.

End point type	Primary
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End point timeframe:

From Baseline until Safety Follow-Up Visit (up to Week 64)

Notes:

[2] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: No formal statistical hypothesis testing was planned for this study. Results were summarized in tables as descriptive statistics only.

End point values	Certolizumab pegol (SS)	Bimekizumab (SS)		
Subject group type	Subject analysis set	Subject analysis set		
Number of subjects analysed	25	51		
Units: percentage of participants				
number (not applicable)	12.0	9.8		

## Statistical analyses

No statistical analyses for this end point

## Primary: Percentage of participants who withdrew due to an adverse event (AE) during the study conduct

End point title	Percentage of participants who withdrew due to an adverse event (AE) during the study conduct <sup>[3]</sup>
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End point description:

An AE was any untoward medical occurrence in a patient or clinical investigation participant administered a pharmaceutical product, which does not necessarily have a causal relationship with this treatment. An AE could therefore be any unfavorable and unintended sign, symptom, or disease temporally associated with the use of a medicinal (investigational) product, whether or not related to the medicinal (investigational) product. A TEAE was defined as any AE with a start date/time at the time of or after the first dose of IMP up until 140 days after the last dose of IMP. Safety Set (SS) consisted of all randomized study participants who received at least 1 dose (full or partial) of the IMP.

End point type	Primary
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End point timeframe:

From Baseline until Safety Follow-Up Visit (up to Week 64)

Notes:

[3] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: No formal statistical hypothesis testing was planned for this study. Results were summarized in tables as descriptive statistics only.

End point values	Certolizumab pegol (SS)	Bimekizumab (SS)		
Subject group type	Subject analysis set	Subject analysis set		
Number of subjects analysed	25	51		
Units: percentage of participants				
number (not applicable)	12.0	5.9		

## Statistical analyses

**Secondary: Percentage of participants with Ankylosing Spondylitis Disease Activity Score - Inactive Disease (ASDAS-ID) at Week 12**

End point title	Percentage of participants with Ankylosing Spondylitis Disease Activity Score - Inactive Disease (ASDAS-ID) at Week 12
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## End point description:

ASDAS-ID was defined by ASDAS < 1.3. ASDAS was calculated as the sum of the results from the following components: 0.121xTotal spinal pain (Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) Question 2 result), 0.058xDuration of morning stiffness (BASDAI Question 6 result), 0.110xPGADA, 0.073xPeripheral pain/swelling (BASDAI Question 3 result), 0.579x(natural logarithm of the CRP [mg/L] + 1). Spinal pain, PGADA, duration of morning stiffness, peripheral pain/swelling were all assessed on a numerical scale (0 to 10 units). There is a minimum score of 0.980 for ASDAS (as a fixed value of 2 was assumed for values of hs-CRP below the LLOQ), but no defined upper score. Per-Protocol Set (PPS) consisted of all study participants in the Full Analysis Set (FAS) who had no important protocol deviation affecting the primary efficacy variable. Here, Number of participants analyzed signifies those participants who were evaluable for this outcome measure.

End point type	Secondary
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## End point timeframe:

Week 12

End point values	Certolizumab pegol (PPS)	Bimekizumab (PPS)		
Subject group type	Subject analysis set	Subject analysis set		
Number of subjects analysed	24	46		
Units: percentage of participants				
number (confidence interval 95%)	20.8 (9.2 to 40.5)	23.9 (13.9 to 37.9)		

**Statistical analyses**

No statistical analyses for this end point

**Secondary: Percentage of participants with Ankylosing Spondylitis Disease Activity Score-Major Improvement (ASDAS-MI) at Week 12**

End point title	Percentage of participants with Ankylosing Spondylitis Disease Activity Score-Major Improvement (ASDAS-MI) at Week 12
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## End point description:

ASDAS-MI was defined by a reduction (improvement) from Baseline in ASDAS  $\geq 2$  units. ASDAS was calculated as the sum of the results from the following components: 0.121xTotal spinal pain (Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) Question 2 result), 0.058xDuration of morning stiffness (BASDAI Question 6 result), 0.110xPGADA, 0.073xPeripheral pain/swelling (BASDAI Question 3 result), 0.579x(natural logarithm of the CRP [mg/L] + 1). Spinal pain, PGADA, duration of morning stiffness, peripheral pain/swelling were all assessed on a numerical scale (0 to 10 units). There is a minimum score of 0.980 for ASDAS (as a fixed value of 2 was assumed for values of hs-CRP below the LLOQ), but no defined upper score. PPS consisted of all study participants in the Full Analysis Set who had no important protocol deviation affecting the primary efficacy variable. Here, Number of participants analyzed signifies those participants who were evaluable for this outcome measure.

End point type	Secondary
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## End point timeframe:

Baseline, Week 12

<b>End point values</b>	Certolizumab pegol (PPS)	Bimekizumab (PPS)		
Subject group type	Subject analysis set	Subject analysis set		
Number of subjects analysed	24	46		
Units: percentage of participants				
number (confidence interval 95%)	45.8 (27.9 to 64.9)	60.9 (46.5 to 73.6)		

### Statistical analyses

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No statistical analyses for this end point

## Adverse events

### Adverse events information

Timeframe for reporting adverse events:

From Baseline until Safety Follow-Up Visit (up to Week 64)

Adverse event reporting additional description:

A treatment-emergent adverse event (TEAE) was defined as any AE with a start date/time at the time of or after the first dose of IMP up until 140 days after the last dose of IMP.

Assessment type	Non-systematic
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### Dictionary used

Dictionary name	MedDRA
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Dictionary version	19.0
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### Reporting groups

Reporting group title	Certolizumab pegol (SS)
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Reporting group description:

Participants received CZP 400 mg sc Q2W at Weeks 0, 2, and 4 (loading dose) followed by CZP 200 mg sc Q2W in Weeks 6 to 10 and 400 mg Q4W from Week 12 to Week 44. Participants formed the Safety Set (SS).

Reporting group title	Bimekizumab (SS)
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Reporting group description:

Participants received BKZ 160 mg sc Q2W from Week 0 through Week 10 and 320 mg sc Q4W from Week 12 to Week 44. In addition, participants received placebo injection to maintain the blind for the CZP loading dose at Baseline, Week 2 and Week 4. Participants formed the SS.

Serious adverse events	Certolizumab pegol (SS)	Bimekizumab (SS)	
Total subjects affected by serious adverse events			
subjects affected / exposed	3 / 25 (12.00%)	5 / 51 (9.80%)	
number of deaths (all causes)	1	0	
number of deaths resulting from adverse events	1	0	
Injury, poisoning and procedural complications			
Traumatic arthritis			
subjects affected / exposed	0 / 25 (0.00%)	1 / 51 (1.96%)	
occurrences causally related to treatment / all	0 / 0	0 / 1	
deaths causally related to treatment / all	0 / 0	0 / 0	
Hand fracture			
subjects affected / exposed	0 / 25 (0.00%)	1 / 51 (1.96%)	
occurrences causally related to treatment / all	0 / 0	0 / 1	
deaths causally related to treatment / all	0 / 0	0 / 0	
Lower limb fracture			

subjects affected / exposed	1 / 25 (4.00%)	0 / 51 (0.00%)	
occurrences causally related to treatment / all	0 / 1	0 / 0	
deaths causally related to treatment / all	0 / 0	0 / 0	
Vascular disorders			
Hypertensive crisis			
subjects affected / exposed	0 / 25 (0.00%)	1 / 51 (1.96%)	
occurrences causally related to treatment / all	0 / 0	0 / 1	
deaths causally related to treatment / all	0 / 0	0 / 0	
Cardiac disorders			
Coronary artery stenosis			
subjects affected / exposed	0 / 25 (0.00%)	1 / 51 (1.96%)	
occurrences causally related to treatment / all	0 / 0	0 / 1	
deaths causally related to treatment / all	0 / 0	0 / 0	
Nervous system disorders			
Myasthenia gravis			
subjects affected / exposed	1 / 25 (4.00%)	0 / 51 (0.00%)	
occurrences causally related to treatment / all	0 / 1	0 / 0	
deaths causally related to treatment / all	0 / 0	0 / 0	
Eye disorders			
Uveitis			
subjects affected / exposed	0 / 25 (0.00%)	1 / 51 (1.96%)	
occurrences causally related to treatment / all	0 / 0	0 / 1	
deaths causally related to treatment / all	0 / 0	0 / 0	
Psychiatric disorders			
Completed suicide			
subjects affected / exposed	1 / 25 (4.00%)	0 / 51 (0.00%)	
occurrences causally related to treatment / all	0 / 1	0 / 0	
deaths causally related to treatment / all	0 / 1	0 / 0	
Renal and urinary disorders			
Acute kidney injury			
subjects affected / exposed	0 / 25 (0.00%)	1 / 51 (1.96%)	
occurrences causally related to treatment / all	0 / 0	1 / 1	
deaths causally related to treatment / all	0 / 0	0 / 0	
Infections and infestations			
Arthritis bacterial			

subjects affected / exposed	1 / 25 (4.00%)	0 / 51 (0.00%)	
occurrences causally related to treatment / all	1 / 1	0 / 0	
deaths causally related to treatment / all	0 / 0	0 / 0	
Pneumonia			
subjects affected / exposed	0 / 25 (0.00%)	1 / 51 (1.96%)	
occurrences causally related to treatment / all	0 / 0	1 / 2	
deaths causally related to treatment / all	0 / 0	0 / 0	
Lower respiratory tract infection			
subjects affected / exposed	0 / 25 (0.00%)	1 / 51 (1.96%)	
occurrences causally related to treatment / all	0 / 0	1 / 1	
deaths causally related to treatment / all	0 / 0	0 / 0	

Frequency threshold for reporting non-serious adverse events: 5 %

<b>Non-serious adverse events</b>	Certolizumab pegol (SS)	Bimekizumab (SS)	
Total subjects affected by non-serious adverse events			
subjects affected / exposed	16 / 25 (64.00%)	27 / 51 (52.94%)	
Investigations			
Gamma-glutamyltransferase increased			
subjects affected / exposed	1 / 25 (4.00%)	3 / 51 (5.88%)	
occurrences (all)	1	5	
Alanine aminotransferase increased			
subjects affected / exposed	2 / 25 (8.00%)	1 / 51 (1.96%)	
occurrences (all)	3	2	
Aspartate aminotransferase increased			
subjects affected / exposed	2 / 25 (8.00%)	1 / 51 (1.96%)	
occurrences (all)	5	2	
Nervous system disorders			
Headache			
subjects affected / exposed	2 / 25 (8.00%)	2 / 51 (3.92%)	
occurrences (all)	2	2	
Gastrointestinal disorders			
Diarrhoea			

subjects affected / exposed occurrences (all)	3 / 25 (12.00%) 3	0 / 51 (0.00%) 0	
Musculoskeletal and connective tissue disorders			
Periarthritis			
subjects affected / exposed	2 / 25 (8.00%)	0 / 51 (0.00%)	
occurrences (all)	2	0	
Ankylosing spondylitis			
subjects affected / exposed	2 / 25 (8.00%)	4 / 51 (7.84%)	
occurrences (all)	2	4	
Infections and infestations			
Oral candidiasis			
subjects affected / exposed	0 / 25 (0.00%)	6 / 51 (11.76%)	
occurrences (all)	0	8	
Oral herpes			
subjects affected / exposed	2 / 25 (8.00%)	0 / 51 (0.00%)	
occurrences (all)	2	0	
Influenza			
subjects affected / exposed	0 / 25 (0.00%)	3 / 51 (5.88%)	
occurrences (all)	0	4	
Nasopharyngitis			
subjects affected / exposed	6 / 25 (24.00%)	10 / 51 (19.61%)	
occurrences (all)	8	12	
Pharyngitis			
subjects affected / exposed	0 / 25 (0.00%)	5 / 51 (9.80%)	
occurrences (all)	0	5	
Upper respiratory tract infection			
subjects affected / exposed	1 / 25 (4.00%)	3 / 51 (5.88%)	
occurrences (all)	1	3	
Tonsillitis			
subjects affected / exposed	2 / 25 (8.00%)	1 / 51 (1.96%)	
occurrences (all)	2	1	



## More information

### Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
05 March 2018	The substantial Protocol Amendment 2 included the following key updates: <ul style="list-style-type: none"><li>• Withdrawal criteria section to provide instructions for the management of study participants with newly diagnosed inflammatory bowel disease or with inflammatory bowel disease flares during the study.</li><li>• Statistical analysis section of the protocol, text describing the planned analysis of the primary efficacy variable, and text describing the planned interim analyses and sample size re-estimation. The rationale for this was that the observed pattern of study participant recruitment was not as expected at the time of study planning.</li></ul>
27 February 2019	The substantial Protocol Amendment 3 included the following key updates: <ul style="list-style-type: none"><li>• Secondary and other study objectives and variables were updated to evaluate the effect of bimekizumab or certolizumab pegol on changes in bone formation as exploratory.</li><li>• Objectives related to pharmacokinetic and immunogenicity were updated to other objectives for consistency with the classification of the corresponding variables.</li><li>• Nonhereditary pharmacogenomic variables and pharmacogenetic variables were updated as exploratory.</li><li>• A Prefilled syringe (PFS) was available for administration in addition to the vial and corresponding text was added.</li><li>• An informal unblinded interim analysis when the last randomized study participant had completed the Week 12 Visit was added to facilitate clinical planning.</li></ul>

Notes:

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### Interruptions (globally)

Were there any global interruptions to the trial? No

### Limitations and caveats

None reported