



## Clinical trial results:

**A randomized, double-blind, placebo- and comparator-controlled study evaluating the effect of multiple doses of QGE031 compared to omalizumab in asthma induced by allergen bronchial provocation**

### Summary

EudraCT number	2012-003350-84
Trial protocol	SE
Global end of trial date	28 October 2013

### Results information

Result version number	v1 (current)
This version publication date	13 July 2016
First version publication date	25 July 2015

### Trial information

#### Trial identification

Sponsor protocol code	CQGE031B2203
-----------------------	--------------

#### Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT01703312
WHO universal trial number (UTN)	-

Notes:

### Sponsors

Sponsor organisation name	Novartis Pharma AG
Sponsor organisation address	CH-4002 , Basel, Switzerland,
Public contact	Clinical Disclosure Office, Novartis Pharma AG, 41 613241111,
Scientific contact	Clinical Disclosure Office, Novartis Pharma AG, 41 613241111,

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:

## Results analysis stage

Analysis stage	Final
Date of interim/final analysis	28 October 2013
Is this the analysis of the primary completion data?	No
Global end of trial reached?	Yes
Global end of trial date	28 October 2013
Was the trial ended prematurely?	No

Notes:

## General information about the trial

Main objective of the trial:

To compare the effects of treatment every two weeks with 240 mg QGE031 versus omalizumab in changing the concentration of inhaled allergen that is required to elicit a 15% fall in the forced expiratory volume in one second (FEV1) at 12 weeks compared to baseline

Protection of trial subjects:

The study was in compliance with the ethical principles derived from the Declaration of Helsinki and the International Conference on Harmonization (ICH) Good Clinical Practice (GCP) Guidelines. All the local regulatory requirements pertinent to safety of trial subjects were also followed during the conduct of the trial.

Subjects were permitted use of rescue short-acting beta-2 agonists no more than twice a week with the exception of use for exercise induced symptoms. Should subjects have developed more frequent symptoms of

asthma or an exacerbation of asthma during the study, whether spontaneously or as a result of allergen challenge, they were instructed to use short acting beta-2 agonists for relief of symptoms. The investigator was permitted to prescribe inhaled and, if necessary, oral steroids with or without long-acting beta-2 agonists to regain control of asthma.

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	15 November 2012
Long term follow-up planned	No
Independent data monitoring committee (IDMC) involvement?	No

Notes:

## Population of trial subjects

### Subjects enrolled per country

Country: Number of subjects enrolled	Canada: 35
Country: Number of subjects enrolled	Sweden: 2
Worldwide total number of subjects	37
EEA total number of subjects	2

Notes:

### 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)	37
From 65 to 84 years	0
85 years and over	0

## Subject disposition

### Recruitment

Recruitment details: -

### Pre-assignment

Screening details:

The study consisted of up to a 28-day screening period (Day -31 to Day -4).

### Period 1

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

### Arms

Are arms mutually exclusive?	Yes
------------------------------	-----

<b>Arm title</b>	Cohort 1: QGE031 24 mg
------------------	------------------------

Arm description:

QGE031 24 mg or matching placebo, subcutaneous, q2 weeks x 6 doses

Arm type	Experimental
Investigational medicinal product name	QGE031
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Solution for injection
Routes of administration	Subcutaneous use

Dosage and administration details:

QGE031 120 mg per 1 mL liquid in vial, used to prepare the active subcutaneous injection

Investigational medicinal product name	Matching placebo for QGE031
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Solution for injection
Routes of administration	Subcutaneous use

Dosage and administration details:

QGE031 0 mg per 1 mL liquid in vial, used to prepare placebo subcutaneous injection

<b>Arm title</b>	Cohort 2: QGE031 72 mg
------------------	------------------------

Arm description:

QGE031 72 mg or matching placebo, subcutaneous, q2 weeks x 6 doses

Arm type	Experimental
Investigational medicinal product name	QGE031
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Solution for injection
Routes of administration	Subcutaneous use

Dosage and administration details:

QGE031 120 mg per 1 mL liquid in vial, used to prepare the active subcutaneous injection

Investigational medicinal product name	Matching placebo for QGE031
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Solution for injection

Routes of administration	Subcutaneous use
--------------------------	------------------

Dosage and administration details:

QGE031 0 mg per 1 mL liquid in vial, used to prepare placebo subcutaneous injection

<b>Arm title</b>	Cohort 3: QGE031 240 mg
------------------	-------------------------

Arm description:

QGE031 240 mg or matching placebo, subcutaneous, q2 weeks x 6 doses

Arm type	Experimental
----------	--------------

Investigational medicinal product name	QGE031
--	--------

Investigational medicinal product code	
--	--

Other name	
------------	--

Pharmaceutical forms	Solution for injection
----------------------	------------------------

Routes of administration	Subcutaneous use
--------------------------	------------------

Dosage and administration details:

QGE031 120 mg per 1 mL liquid in vial, used to prepare the active subcutaneous injection

Investigational medicinal product name	Matching placebo for QGE031
--	-----------------------------

Investigational medicinal product code	
--	--

Other name	
------------	--

Pharmaceutical forms	Solution for injection
----------------------	------------------------

Routes of administration	Subcutaneous use
--------------------------	------------------

Dosage and administration details:

QGE031 0 mg per 1 mL liquid in vial, used to prepare placebo subcutaneous injection

<b>Arm title</b>	Cohort 4: Omalizumab
------------------	----------------------

Arm description:

Omalizumab or matching placebo, subcutaneous, q2 weeks x 6 doses or q4 weeks x 3 doses

Arm type	Active comparator
----------	-------------------

Investigational medicinal product name	Omalizumab
--	------------

Investigational medicinal product code	
--	--

Other name	
------------	--

Pharmaceutical forms	Solution for injection
----------------------	------------------------

Routes of administration	Subcutaneous use
--------------------------	------------------

Dosage and administration details:

Omalizumab or matching placebo, subcutaneous, q2 weeks x 6 doses or q4 weeks x 3 doses

Investigational medicinal product name	Matching placebo for Omalizumab
--	---------------------------------

Investigational medicinal product code	
--	--

Other name	
------------	--

Pharmaceutical forms	Solution for injection
----------------------	------------------------

Routes of administration	Subcutaneous use
--------------------------	------------------

Dosage and administration details:

Omalizumab or matching placebo, subcutaneous, q2 weeks x 6 doses or q4 weeks x 3 doses

<b>Arm title</b>	Placebo
------------------	---------

Arm description:

During the 10-week treatment period, participants will receive a dose of study drug subcutaneously once every two weeks (total of six doses).

Arm type	Placebo
----------	---------

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:

r matching placebo, subcutaneous, q2 weeks x 6 doses or q4 weeks x 3 doses

<b>Number of subjects in period 1</b>	Cohort 1: QGE031 24 mg	Cohort 2: QGE031 72 mg	Cohort 3: QGE031 240 mg
Started	8	8	8
Randomized	8	8	8
Completed	7	8	8
Not completed	1	0	0
Consent withdrawn by subject	1	-	-
Adverse event, non-fatal	-	-	-

<b>Number of subjects in period 1</b>	Cohort 4: Omalizumab	Placebo
Started	6	7
Randomized	6	7
Completed	6	6
Not completed	0	1
Consent withdrawn by subject	-	-
Adverse event, non-fatal	-	1

## Baseline characteristics

### Reporting groups

Reporting group title	Cohort 1: QGE031 24 mg
Reporting group description:	QGE031 24 mg or matching placebo, subcutaneous, q2 weeks x 6 doses
Reporting group title	Cohort 2: QGE031 72 mg
Reporting group description:	QGE031 72 mg or matching placebo, subcutaneous, q2 weeks x 6 doses
Reporting group title	Cohort 3: QGE031 240 mg
Reporting group description:	QGE031 240 mg or matching placebo, subcutaneous, q2 weeks x 6 doses
Reporting group title	Cohort 4: Omalizumab
Reporting group description:	Omalizumab or matching placebo, subcutaneous, q2 weeks x 6 doses or q4 weeks x 3 doses
Reporting group title	Placebo
Reporting group description:	During the 10-week treatment period, participants will receive a dose of study drug subcutaneously once every two weeks (total of six doses).

Reporting group values	Cohort 1: QGE031 24 mg	Cohort 2: QGE031 72 mg	Cohort 3: QGE031 240 mg
Number of subjects	8	8	8
Age categorical			
Units: Subjects			
Adults (18-64 years)	8	8	8
Age continuous			
Units: years			
arithmetic mean	26.3	32.3	34.4
standard deviation	± 1.83	± 15.08	± 11.84
Gender categorical			
Units: Subjects			
Female	6	5	4
Male	2	3	4

Reporting group values	Cohort 4: Omalizumab	Placebo	Total
Number of subjects	6	7	37
Age categorical			
Units: Subjects			
Adults (18-64 years)	6	7	37
Age continuous			
Units: years			
arithmetic mean	33	30.1	-
standard deviation	± 11.88	± 12.77	-
Gender categorical			
Units: Subjects			
Female	4	6	25
Male	2	1	12



## End points

### End points reporting groups

Reporting group title	Cohort 1: QGE031 24 mg
Reporting group description:	QGE031 24 mg or matching placebo, subcutaneous, q2 weeks x 6 doses
Reporting group title	Cohort 2: QGE031 72 mg
Reporting group description:	QGE031 72 mg or matching placebo, subcutaneous, q2 weeks x 6 doses
Reporting group title	Cohort 3: QGE031 240 mg
Reporting group description:	QGE031 240 mg or matching placebo, subcutaneous, q2 weeks x 6 doses
Reporting group title	Cohort 4: Omalizumab
Reporting group description:	Omalizumab or matching placebo, subcutaneous, q2 weeks x 6 doses or q4 weeks x 3 doses
Reporting group title	Placebo
Reporting group description:	During the 10-week treatment period, participants will receive a dose of study drug subcutaneously once every two weeks (total of six doses).

Subject analysis set title	QGE031 240mg vs. Placebo
Subject analysis set type	Sub-group analysis
Subject analysis set description:	One efficacy objective to compare the effects between QGE031 240 mg and Placebo.
Subject analysis set title	QGE031 72mg vs. Placebo
Subject analysis set type	Sub-group analysis
Subject analysis set description:	One efficacy objective to compare the effects between QGE031 72 mg and Placebo.
Subject analysis set title	QGE031 24mg vs. Placebo
Subject analysis set type	Sub-group analysis
Subject analysis set description:	One efficacy objective to compare the effects between QGE031 24 mg and Placebo.
Subject analysis set title	Omalizumab vs. Placebo
Subject analysis set type	Sub-group analysis
Subject analysis set description:	One efficacy objective to compare the effects between Omalizumab and Placebo.

### Primary: Change in the concentration of inhaled allergen that elicits a 15% fall in the forced expiratory volume in one second

End point title	Change in the concentration of inhaled allergen that elicits a 15% fall in the forced expiratory volume in one second <sup>[1]</sup>
End point description:	The end point is not reporting statistics for all the arms in the baseline period
End point type	Primary
End point timeframe:	6, 12, and 18 weeks
Notes:	

[1] - The end point is not reporting statistics for all the arms in the baseline period. It is expected all the baseline period arms will be reported on when providing values for an end point on the baseline period. Justification: Only select arms are reporting data for the measure. Values are not provided in other arms for this measure.

End point values	Cohort 3: QGE031 240 mg	Cohort 4: Omalizumab		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	8	6		
Units: ratio				
geometric mean (geometric coefficient of variation)				
Week 6	6.58 (± 0.848)	7.761 (± 0.848)		
Week 12	24.762 (± 2.969)	8.339 (± 2.969)		
Week 18	5.118 (± 1.707)	2.999 (± 1.707)		

### Statistical analyses

<b>Statistical analysis title</b>	Ratio of Geometric Means
Comparison groups	Cohort 4: Omalizumab v Cohort 3: QGE031 240 mg
Number of subjects included in analysis	14
Analysis specification	Pre-specified
Analysis type	other <sup>[2]</sup>
P-value	= 0.1
Method	linear mixed effects model

Notes:

[2] - inferential

### Secondary: Ratio of Geometric Means of QGE031 doses and omalizumab vs. Placebo at 12 weeks of treatment

End point title	Ratio of Geometric Means of QGE031 doses and omalizumab vs. Placebo at 12 weeks of treatment
End point description:	Change in the concentration of inhaled allergen that elicits a 15% fall in the forced expiratory volume in one second (FEV1) following treatment with placebo and various doses of QGE031.
End point type	Secondary
End point timeframe:	Week 12

End point values	QGE031 240mg vs. Placebo	QGE031 72mg vs. Placebo	QGE031 24mg vs. Placebo	Omalizumab vs. Placebo
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	15	15	15	13
Units: ratio				
geometric mean (geometric coefficient of variation)				
Test	24.762 (± 16.081)	22.796 (± 14.804)	2.781 (± 1.806)	8.339 (± 5.416)
Reference	1.54 (± 16.081)	1.54 (± 14.804)	1.54 (± 1.806)	1.54 (± 5.416)

## Statistical analyses

No statistical analyses for this end point

### Secondary: Plasma QGE031 concentrations at week 24

End point title Plasma QGE031 concentrations at week 24<sup>[3]</sup>

End point description:

End point type Secondary

End point timeframe:

24 weeks

Notes:

[3] - The end point is not reporting statistics for all the arms in the baseline period. It is expected all the baseline period arms will be reported on when providing values for an end point on the baseline period. Justification: Only select arms are reporting data for the measure. Values are not provided in other arms for this measure.

End point values	Cohort 1: QGE031 24 mg	Cohort 2: QGE031 72 mg	Cohort 3: QGE031 240 mg	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	7	8	8	
Units: µg/mL				
arithmetic mean (standard deviation)	0 (± 0)	0.567 (± 0.689)	1.91 (± 1.1)	

## Statistical analyses

No statistical analyses for this end point

### Secondary: Number of participants with adverse events or other safety concerns

End point title Number of participants with adverse events or other safety concerns

End point description:

End point type Secondary

End point timeframe:

Week 24

<b>End point values</b>	Cohort 1: QGE031 24 mg	Cohort 2: QGE031 72 mg	Cohort 3: QGE031 240 mg	Cohort 4: Omalizumab
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	8	8	8	6
Units: participants				
number (not applicable)	8	5	7	3

<b>End point values</b>	Placebo			
Subject group type	Reporting group			
Number of subjects analysed	7			
Units: participants				
number (not applicable)	6			

### **Statistical analyses**

---

No statistical analyses for this end point

## Adverse events

### Adverse events information

Timeframe for reporting adverse events:

Adverse events are collected from First Patient First Visit (FPFV) until Last Patient Last Visit (LPLV). All adverse events reported in this record are from date of First Patient First Treatment until Last Patient Last Visit

Assessment type	Systematic
-----------------	------------

### Dictionary used

Dictionary name	MedDRA
Dictionary version	16.1

### Reporting groups

Reporting group title	Cohort 1 QGE031 24mg
-----------------------	----------------------

Reporting group description:

Cohort 1 QGE031 24mg

Reporting group title	Cohort 2 QGE031 72mg
-----------------------	----------------------

Reporting group description:

Cohort 2 QGE031 72mg

Reporting group title	Placebo
-----------------------	---------

Reporting group description:

Placebo

Reporting group title	Cohort 4 Omalizumab
-----------------------	---------------------

Reporting group description:

Cohort 4 Omalizumab

Reporting group title	Cohort 3 QGE031 240mg
-----------------------	-----------------------

Reporting group description:

Cohort 3 QGE031 240mg

<b>Serious adverse events</b>	Cohort 1 QGE031 24mg	Cohort 2 QGE031 72mg	Placebo
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 8 (0.00%)	0 / 8 (0.00%)	0 / 7 (0.00%)
number of deaths (all causes)	0	0	0
number of deaths resulting from adverse events	0	0	0

<b>Serious adverse events</b>	Cohort 4 Omalizumab	Cohort 3 QGE031 240mg	
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 6 (0.00%)	0 / 8 (0.00%)	
number of deaths (all causes)	0	0	
number of deaths resulting from adverse events	0	0	

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

<b>Non-serious adverse events</b>	Cohort 1 QGE031 24mg	Cohort 2 QGE031 72mg	Placebo
Total subjects affected by non-serious adverse events			
subjects affected / exposed	8 / 8 (100.00%)	5 / 8 (62.50%)	6 / 7 (85.71%)
General disorders and administration site conditions			
Fatigue			
subjects affected / exposed	0 / 8 (0.00%)	0 / 8 (0.00%)	1 / 7 (14.29%)
occurrences (all)	0	0	1
Injection site bruising			
subjects affected / exposed	0 / 8 (0.00%)	0 / 8 (0.00%)	0 / 7 (0.00%)
occurrences (all)	0	0	0
Injection site erythema			
subjects affected / exposed	0 / 8 (0.00%)	1 / 8 (12.50%)	0 / 7 (0.00%)
occurrences (all)	0	1	0
Injection site pruritus			
subjects affected / exposed	1 / 8 (12.50%)	0 / 8 (0.00%)	0 / 7 (0.00%)
occurrences (all)	1	0	0
Injection site pain			
subjects affected / exposed	0 / 8 (0.00%)	0 / 8 (0.00%)	0 / 7 (0.00%)
occurrences (all)	0	0	0
Injection site urticaria			
subjects affected / exposed	0 / 8 (0.00%)	0 / 8 (0.00%)	0 / 7 (0.00%)
occurrences (all)	0	0	0
Injection site warmth			
subjects affected / exposed	1 / 8 (12.50%)	0 / 8 (0.00%)	0 / 7 (0.00%)
occurrences (all)	1	0	0
Pain			
subjects affected / exposed	0 / 8 (0.00%)	0 / 8 (0.00%)	0 / 7 (0.00%)
occurrences (all)	0	0	0
Immune system disorders			
Hypersensitivity			
subjects affected / exposed	1 / 8 (12.50%)	0 / 8 (0.00%)	0 / 7 (0.00%)
occurrences (all)	2	0	0
Seasonal allergy			

subjects affected / exposed occurrences (all)	1 / 8 (12.50%) 1	0 / 8 (0.00%) 0	0 / 7 (0.00%) 0
Respiratory, thoracic and mediastinal disorders			
Asthma			
subjects affected / exposed	2 / 8 (25.00%)	1 / 8 (12.50%)	0 / 7 (0.00%)
occurrences (all)	2	1	0
Cough			
subjects affected / exposed	1 / 8 (12.50%)	0 / 8 (0.00%)	0 / 7 (0.00%)
occurrences (all)	1	0	0
Oropharyngeal pain			
subjects affected / exposed	1 / 8 (12.50%)	0 / 8 (0.00%)	0 / 7 (0.00%)
occurrences (all)	1	0	0
Nasal congestion			
subjects affected / exposed	0 / 8 (0.00%)	1 / 8 (12.50%)	0 / 7 (0.00%)
occurrences (all)	0	1	0
Wheezing			
subjects affected / exposed	0 / 8 (0.00%)	0 / 8 (0.00%)	0 / 7 (0.00%)
occurrences (all)	0	0	0
Psychiatric disorders			
Depression			
subjects affected / exposed	1 / 8 (12.50%)	0 / 8 (0.00%)	0 / 7 (0.00%)
occurrences (all)	1	0	0
Insomnia			
subjects affected / exposed	1 / 8 (12.50%)	0 / 8 (0.00%)	0 / 7 (0.00%)
occurrences (all)	1	0	0
Injury, poisoning and procedural complications			
Accidental overdose			
subjects affected / exposed	0 / 8 (0.00%)	0 / 8 (0.00%)	1 / 7 (14.29%)
occurrences (all)	0	0	1
Arthropod bite			
subjects affected / exposed	1 / 8 (12.50%)	0 / 8 (0.00%)	0 / 7 (0.00%)
occurrences (all)	1	0	0
Contusion			
subjects affected / exposed	0 / 8 (0.00%)	0 / 8 (0.00%)	0 / 7 (0.00%)
occurrences (all)	0	0	0
Injection related reaction			

subjects affected / exposed occurrences (all)	0 / 8 (0.00%) 0	0 / 8 (0.00%) 0	1 / 7 (14.29%) 1
Fall subjects affected / exposed occurrences (all)	0 / 8 (0.00%) 0	0 / 8 (0.00%) 0	1 / 7 (14.29%) 1
Laceration subjects affected / exposed occurrences (all)	1 / 8 (12.50%) 1	1 / 8 (12.50%) 2	0 / 7 (0.00%) 0
Ligament sprain subjects affected / exposed occurrences (all)	0 / 8 (0.00%) 0	1 / 8 (12.50%) 1	0 / 7 (0.00%) 0
Procedural pain subjects affected / exposed occurrences (all)	1 / 8 (12.50%) 1	0 / 8 (0.00%) 0	0 / 7 (0.00%) 0
Cardiac disorders Ventricular extrasystoles subjects affected / exposed occurrences (all)	0 / 8 (0.00%) 0	0 / 8 (0.00%) 0	0 / 7 (0.00%) 0
Nervous system disorders Headache subjects affected / exposed occurrences (all)	0 / 8 (0.00%) 0	0 / 8 (0.00%) 0	0 / 7 (0.00%) 0
Dizziness subjects affected / exposed occurrences (all)	0 / 8 (0.00%) 0	0 / 8 (0.00%) 0	0 / 7 (0.00%) 0
Blood and lymphatic system disorders Anaemia subjects affected / exposed occurrences (all)	0 / 8 (0.00%) 0	0 / 8 (0.00%) 0	0 / 7 (0.00%) 0
Ear and labyrinth disorders Ear pain subjects affected / exposed occurrences (all)	0 / 8 (0.00%) 0	0 / 8 (0.00%) 0	0 / 7 (0.00%) 0
Eye disorders Conjunctivitis subjects affected / exposed occurrences (all)	0 / 8 (0.00%) 0	0 / 8 (0.00%) 0	1 / 7 (14.29%) 1

Eye pruritus subjects affected / exposed occurrences (all)	1 / 8 (12.50%) 1	0 / 8 (0.00%) 0	0 / 7 (0.00%) 0
<b>Gastrointestinal disorders</b>			
Abdominal pain upper subjects affected / exposed occurrences (all)	0 / 8 (0.00%) 0	0 / 8 (0.00%) 0	0 / 7 (0.00%) 0
Gastrooesophageal reflux disease subjects affected / exposed occurrences (all)	0 / 8 (0.00%) 0	1 / 8 (12.50%) 1	0 / 7 (0.00%) 0
Diarrhoea subjects affected / exposed occurrences (all)	0 / 8 (0.00%) 0	1 / 8 (12.50%) 1	1 / 7 (14.29%) 1
Nausea subjects affected / exposed occurrences (all)	1 / 8 (12.50%) 1	0 / 8 (0.00%) 0	1 / 7 (14.29%) 1
Vomiting subjects affected / exposed occurrences (all)	0 / 8 (0.00%) 0	1 / 8 (12.50%) 1	1 / 7 (14.29%) 1
<b>Skin and subcutaneous tissue disorders</b>			
Dermatitis allergic subjects affected / exposed occurrences (all)	0 / 8 (0.00%) 0	0 / 8 (0.00%) 0	0 / 7 (0.00%) 0
Rash generalised subjects affected / exposed occurrences (all)	1 / 8 (12.50%) 1	0 / 8 (0.00%) 0	0 / 7 (0.00%) 0
Rash subjects affected / exposed occurrences (all)	1 / 8 (12.50%) 1	0 / 8 (0.00%) 0	0 / 7 (0.00%) 0
Pruritus subjects affected / exposed occurrences (all)	0 / 8 (0.00%) 0	0 / 8 (0.00%) 0	0 / 7 (0.00%) 0
Solar dermatitis subjects affected / exposed occurrences (all)	0 / 8 (0.00%) 0	0 / 8 (0.00%) 0	1 / 7 (14.29%) 1
<b>Musculoskeletal and connective tissue disorders</b>			

Arthralgia			
subjects affected / exposed	0 / 8 (0.00%)	0 / 8 (0.00%)	1 / 7 (14.29%)
occurrences (all)	0	0	1
Back pain			
subjects affected / exposed	0 / 8 (0.00%)	0 / 8 (0.00%)	1 / 7 (14.29%)
occurrences (all)	0	0	1
Musculoskeletal pain			
subjects affected / exposed	1 / 8 (12.50%)	0 / 8 (0.00%)	0 / 7 (0.00%)
occurrences (all)	1	0	0
Patellofemoral pain syndrome			
subjects affected / exposed	0 / 8 (0.00%)	0 / 8 (0.00%)	1 / 7 (14.29%)
occurrences (all)	0	0	1
Tenosynovitis			
subjects affected / exposed	1 / 8 (12.50%)	0 / 8 (0.00%)	0 / 7 (0.00%)
occurrences (all)	1	0	0
Infections and infestations			
Folliculitis			
subjects affected / exposed	0 / 8 (0.00%)	0 / 8 (0.00%)	1 / 7 (14.29%)
occurrences (all)	0	0	1
Influenza			
subjects affected / exposed	0 / 8 (0.00%)	1 / 8 (12.50%)	1 / 7 (14.29%)
occurrences (all)	0	1	1
Gastroenteritis viral			
subjects affected / exposed	1 / 8 (12.50%)	0 / 8 (0.00%)	0 / 7 (0.00%)
occurrences (all)	1	0	0
Nasopharyngitis			
subjects affected / exposed	5 / 8 (62.50%)	2 / 8 (25.00%)	0 / 7 (0.00%)
occurrences (all)	6	2	0
Pharyngitis streptococcal			
subjects affected / exposed	1 / 8 (12.50%)	0 / 8 (0.00%)	0 / 7 (0.00%)
occurrences (all)	1	0	0
Respiratory tract infection			
subjects affected / exposed	0 / 8 (0.00%)	0 / 8 (0.00%)	1 / 7 (14.29%)
occurrences (all)	0	0	1
Tooth abscess			

subjects affected / exposed occurrences (all)	1 / 8 (12.50%) 1	0 / 8 (0.00%) 0	0 / 7 (0.00%) 0
Sinusitis subjects affected / exposed occurrences (all)	1 / 8 (12.50%) 1	0 / 8 (0.00%) 0	1 / 7 (14.29%) 1
Upper respiratory tract infection subjects affected / exposed occurrences (all)	1 / 8 (12.50%) 1	0 / 8 (0.00%) 0	1 / 7 (14.29%) 1
Urinary tract infection subjects affected / exposed occurrences (all)	2 / 8 (25.00%) 3	1 / 8 (12.50%) 1	0 / 7 (0.00%) 0
Metabolism and nutrition disorders Iron deficiency subjects affected / exposed occurrences (all)	1 / 8 (12.50%) 1	0 / 8 (0.00%) 0	0 / 7 (0.00%) 0

<b>Non-serious adverse events</b>	Cohort 4 Omalizumab	Cohort 3 QGE031 240mg	
Total subjects affected by non-serious adverse events subjects affected / exposed	3 / 6 (50.00%)	7 / 8 (87.50%)	
General disorders and administration site conditions Fatigue subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	0 / 8 (0.00%) 0	
Injection site bruising subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	1 / 8 (12.50%) 1	
Injection site erythema subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	2 / 8 (25.00%) 5	
Injection site pruritus subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	0 / 8 (0.00%) 0	
Injection site pain subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	1 / 8 (12.50%) 3	
Injection site urticaria			

subjects affected / exposed occurrences (all)	1 / 6 (16.67%) 1	0 / 8 (0.00%) 0	
Injection site warmth subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	1 / 8 (12.50%) 3	
Pain subjects affected / exposed occurrences (all)	1 / 6 (16.67%) 1	0 / 8 (0.00%) 0	
Immune system disorders Hypersensitivity subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	0 / 8 (0.00%) 0	
Seasonal allergy subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	0 / 8 (0.00%) 0	
Respiratory, thoracic and mediastinal disorders Asthma subjects affected / exposed occurrences (all)	1 / 6 (16.67%) 1	1 / 8 (12.50%) 1	
Cough subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	1 / 8 (12.50%) 1	
Oropharyngeal pain subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	3 / 8 (37.50%) 3	
Nasal congestion subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	2 / 8 (25.00%) 2	
Wheezing subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	1 / 8 (12.50%) 1	
Psychiatric disorders Depression subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	0 / 8 (0.00%) 0	
Insomnia			

subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	1 / 8 (12.50%) 1	
Injury, poisoning and procedural complications			
Accidental overdose			
subjects affected / exposed	0 / 6 (0.00%)	0 / 8 (0.00%)	
occurrences (all)	0	0	
Arthropod bite			
subjects affected / exposed	0 / 6 (0.00%)	0 / 8 (0.00%)	
occurrences (all)	0	0	
Contusion			
subjects affected / exposed	1 / 6 (16.67%)	0 / 8 (0.00%)	
occurrences (all)	1	0	
Injection related reaction			
subjects affected / exposed	0 / 6 (0.00%)	0 / 8 (0.00%)	
occurrences (all)	0	0	
Fall			
subjects affected / exposed	0 / 6 (0.00%)	0 / 8 (0.00%)	
occurrences (all)	0	0	
Laceration			
subjects affected / exposed	0 / 6 (0.00%)	0 / 8 (0.00%)	
occurrences (all)	0	0	
Ligament sprain			
subjects affected / exposed	0 / 6 (0.00%)	1 / 8 (12.50%)	
occurrences (all)	0	1	
Procedural pain			
subjects affected / exposed	0 / 6 (0.00%)	0 / 8 (0.00%)	
occurrences (all)	0	0	
Cardiac disorders			
Ventricular extrasystoles			
subjects affected / exposed	0 / 6 (0.00%)	1 / 8 (12.50%)	
occurrences (all)	0	1	
Nervous system disorders			
Headache			
subjects affected / exposed	1 / 6 (16.67%)	2 / 8 (25.00%)	
occurrences (all)	1	3	
Dizziness			

subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	1 / 8 (12.50%) 1	
Blood and lymphatic system disorders Anaemia subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	1 / 8 (12.50%) 1	
Ear and labyrinth disorders Ear pain subjects affected / exposed occurrences (all)	1 / 6 (16.67%) 1	1 / 8 (12.50%) 1	
Eye disorders Conjunctivitis subjects affected / exposed occurrences (all)  Eye pruritus subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0  1 / 6 (16.67%) 1	0 / 8 (0.00%) 0  0 / 8 (0.00%) 0	
Gastrointestinal disorders Abdominal pain upper subjects affected / exposed occurrences (all)  Gastrooesophageal reflux disease subjects affected / exposed occurrences (all)  Diarrhoea subjects affected / exposed occurrences (all)  Nausea subjects affected / exposed occurrences (all)  Vomiting subjects affected / exposed occurrences (all)	1 / 6 (16.67%) 1  0 / 6 (0.00%) 0  0 / 6 (0.00%) 0  0 / 6 (0.00%) 0	0 / 8 (0.00%) 0  0 / 8 (0.00%) 0  1 / 8 (12.50%) 2  0 / 8 (0.00%) 0  0 / 8 (0.00%) 0	
Skin and subcutaneous tissue disorders Dermatitis allergic subjects affected / exposed occurrences (all)	1 / 6 (16.67%) 1	0 / 8 (0.00%) 0	

Rash generalised subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	0 / 8 (0.00%) 0	
Rash subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	0 / 8 (0.00%) 0	
Pruritus subjects affected / exposed occurrences (all)	1 / 6 (16.67%) 1	0 / 8 (0.00%) 0	
Solar dermatitis subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	0 / 8 (0.00%) 0	
Musculoskeletal and connective tissue disorders			
Arthralgia subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	1 / 8 (12.50%) 1	
Back pain subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	1 / 8 (12.50%) 1	
Musculoskeletal pain subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	1 / 8 (12.50%) 1	
Patellofemoral pain syndrome subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	0 / 8 (0.00%) 0	
Tenosynovitis subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	0 / 8 (0.00%) 0	
Infections and infestations			
Folliculitis subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	0 / 8 (0.00%) 0	
Influenza subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	0 / 8 (0.00%) 0	
Gastroenteritis viral			

subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	0 / 8 (0.00%) 0	
Nasopharyngitis subjects affected / exposed occurrences (all)	3 / 6 (50.00%) 3	1 / 8 (12.50%) 1	
Pharyngitis streptococcal subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	0 / 8 (0.00%) 0	
Respiratory tract infection subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	0 / 8 (0.00%) 0	
Tooth abscess subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	0 / 8 (0.00%) 0	
Sinusitis subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	0 / 8 (0.00%) 0	
Upper respiratory tract infection subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	1 / 8 (12.50%) 1	
Urinary tract infection subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	0 / 8 (0.00%) 0	
Metabolism and nutrition disorders Iron deficiency subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0	0 / 8 (0.00%) 0	

## More information

### Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
12 December 2012	<ul style="list-style-type: none"><li>• Changed contraception requirement for WOCBP from highly effective to effective due to enhanced peri-and post-natal development preclinical data since the original submission of this protocol.</li><li>• Screening bronchial provocation procedures were modified as follows: late phase assessment made optional; sputum collection and post-allergen methacholine challenge made not mandatory.</li><li>• The language of Section 4.4 (Exclusion criteria), Section 5.5.8 (Concomitant treatment) and Section 5.5.9 (Prohibited treatment) of the protocol was amended to be internally consistent and consistent with the AllerGen SOPs.</li><li>• Removed collection of blood for allergen-specific T cells and dendritic cell subsets from Section 6.6 of the protocol.</li><li>• Updated blood log to reflect volumes collected by the tubes contained in central lab kits. Total blood volume decreased due to the removal of biomarker collection (allergen-specific T cells and dendritic cell subsets).</li></ul>

Notes:

---

### Interruptions (globally)

Were there any global interruptions to the trial? No

### Limitations and caveats

None reported