



## Clinical trial results:

### A Phase 2, Open-label, Randomized Study to Evaluate Safety and Efficacy of Mometinib in Subjects with Polycythemia Vera or Essential Thrombocythemia

#### Summary

EudraCT number	2013-004105-11
Trial protocol	DE
Global end of trial date	07 May 2015

#### Results information

Result version number	v1 (current)
This version publication date	22 May 2016
First version publication date	22 May 2016

#### Trial information

##### Trial identification

Sponsor protocol code	GS-US-354-0101
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##### Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT01998828
WHO universal trial number (UTN)	-

Notes:

#### Sponsors

Sponsor organisation name	Gilead Sciences
Sponsor organisation address	333 Lakeside Drive, Foster City, CA, United States, 94404
Public contact	Clinical Trial Mailbox, Gilead Sciences International Ltd, ClinicalTrialDisclosures@gilead.com
Scientific contact	Clinical Trial Mailbox, Gilead Sciences International Ltd, ClinicalTrialDisclosures@gilead.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:

## Results analysis stage

Analysis stage	Final
Date of interim/final analysis	07 May 2015
Is this the analysis of the primary completion data?	Yes
Primary completion date	17 March 2015
Global end of trial reached?	Yes
Global end of trial date	07 May 2015
Was the trial ended prematurely?	No

Notes:

## General information about the trial

Main objective of the trial:

This open-label study was to determine the safety and efficacy of momelotinib in participants with either polycythemia vera (PV) or essential thrombocythemia (ET) who had not yet received treatment with a Janus kinase (JAK) inhibitor.

Protection of trial subjects:

The protocol and consent/assent forms were submitted by each investigator to a duly constituted Independent Ethics Committee (IEC) or Institutional Review Board (IRB) for review and approval before study initiation. All revisions to the consent/assent forms (if applicable) after initial IEC/IRB approval were submitted by the investigator to the IEC/IRB for review and approval before implementation in accordance with regulatory requirements.

This study was conducted in accordance with recognized international scientific and ethical standards, including but not limited to the International Conference on Harmonization guideline for Good Clinical Practice (ICH GCP) and the original principles embodied in the Declaration of Helsinki.

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	19 February 2014
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	France: 4
Country: Number of subjects enrolled	Germany: 5
Country: Number of subjects enrolled	United States: 21
Country: Number of subjects enrolled	Australia: 6
Country: Number of subjects enrolled	Canada: 3
Worldwide total number of subjects	39
EEA total number of subjects	9

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)	27
From 65 to 84 years	12
85 years and over	0

## Subject disposition

### Recruitment

Recruitment details:

Participants were enrolled at study sites in Europe, North America, and Australia. The first participant was screened on 19 February 2014. The last study visit occurred on 07 May 2015.

### Pre-assignment

Screening details:

48 participants were screened.

### Period 1

Period 1 title	Overall Study (overall period)
Is this the baseline period?	Yes
Allocation method	Randomised - controlled
Blinding used	Not blinded

### Arms

Are arms mutually exclusive?	Yes
<b>Arm title</b>	MMB 100 mg (PV Cohort)

Arm description:

Participants with polycythemia vera received MMB 100 mg for 24 weeks.

Arm type	Experimental
Investigational medicinal product name	Momelotinib
Investigational medicinal product code	
Other name	GS-0387
Pharmaceutical forms	Tablet
Routes of administration	Oral use

Dosage and administration details:

Momelotinib (MMB) 100 mg, 150 mg, or 200 mg once daily

<b>Arm title</b>	MMB 200 mg (PV Cohort)
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Arm description:

Participants with polycythemia vera received MMB 200 mg for 24 weeks.

Arm type	Experimental
Investigational medicinal product name	Momelotinib
Investigational medicinal product code	
Other name	GS-0387
Pharmaceutical forms	Tablet
Routes of administration	Oral use

Dosage and administration details:

Momelotinib (MMB) 100 mg, 150 mg, or 200 mg once daily

<b>Arm title</b>	MMB 100 mg (ET Cohort)
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Arm description:

Participants with essential thrombocythemia received MMB 100 mg for 24 weeks.

Arm type	Experimental
Investigational medicinal product name	Momelotinib
Investigational medicinal product code	
Other name	GS-0387
Pharmaceutical forms	Tablet
Routes of administration	Oral use

Dosage and administration details:

Momelotinib (MMB) 100 mg, 150 mg, or 200 mg once daily

<b>Arm title</b>	MMB 200 mg (ET Cohort)
Arm description:	
Participants with essential thrombocythemia received MMB 200 mg for 24 weeks.	
Arm type	Experimental
Investigational medicinal product name	Momelotinib
Investigational medicinal product code	
Other name	GS-0387
Pharmaceutical forms	Tablet
Routes of administration	Oral use

Dosage and administration details:

Momelotinib (MMB) 100 mg, 150 mg, or 200 mg once daily

<b>Number of subjects in period 1</b>	MMB 100 mg (PV Cohort)	MMB 200 mg (PV Cohort)	MMB 100 mg (ET Cohort)
Started	14	14	5
Completed	5	5	3
Not completed	9	9	2
Subject Withdrew Consent	2	1	-
Adverse event, non-fatal	3	4	-
Study Discontinued by Sponsor	2	3	1
Investigator's Discretion	-	1	1
Lost to follow-up	1	-	-
Disease Progression	1	-	-

<b>Number of subjects in period 1</b>	MMB 200 mg (ET Cohort)
Started	6
Completed	2
Not completed	4
Subject Withdrew Consent	1
Adverse event, non-fatal	1
Study Discontinued by Sponsor	1
Investigator's Discretion	1
Lost to follow-up	-
Disease Progression	-

## Baseline characteristics

### Reporting groups

Reporting group title	MMB 100 mg (PV Cohort)
Reporting group description:	
Participants with polycythemia vera received MMB 100 mg for 24 weeks.	
Reporting group title	MMB 200 mg (PV Cohort)
Reporting group description:	
Participants with polycythemia vera received MMB 200 mg for 24 weeks.	
Reporting group title	MMB 100 mg (ET Cohort)
Reporting group description:	
Participants with essential thrombocythemia received MMB 100 mg for 24 weeks.	
Reporting group title	MMB 200 mg (ET Cohort)
Reporting group description:	
Participants with essential thrombocythemia received MMB 200 mg for 24 weeks.	

Reporting group values	MMB 100 mg (PV Cohort)	MMB 200 mg (PV Cohort)	MMB 100 mg (ET Cohort)
Number of subjects	14	14	5
Age categorical			
Units: Subjects			

Age continuous			
Units: years			
arithmetic mean	58.7	61.3	60.8
standard deviation	± 16.8	± 6.54	± 15.78
Gender categorical			
Units: Subjects			
Female	7	4	3
Male	7	10	2

Reporting group values	MMB 200 mg (ET Cohort)	Total	
Number of subjects	6	39	
Age categorical			
Units: Subjects			

Age continuous			
Units: years			
arithmetic mean	52		
standard deviation	± 11.93	-	
Gender categorical			
Units: Subjects			
Female	2	16	
Male	4	23	

## End points

### End points reporting groups

Reporting group title	MMB 100 mg (PV Cohort)
Reporting group description: Participants with polycythemia vera received MMB 100 mg for 24 weeks.	
Reporting group title	MMB 200 mg (PV Cohort)
Reporting group description: Participants with polycythemia vera received MMB 200 mg for 24 weeks.	
Reporting group title	MMB 100 mg (ET Cohort)
Reporting group description: Participants with essential thrombocythemia received MMB 100 mg for 24 weeks.	
Reporting group title	MMB 200 mg (ET Cohort)
Reporting group description: Participants with essential thrombocythemia received MMB 200 mg for 24 weeks.	

### Primary: Overall response rate

End point title	Overall response rate <sup>[1]</sup>
End point description: Intent-to-Treat Analysis Set: all participants who are randomized regardless of whether they receive any MMB.	
End point type	Primary
End point timeframe: Up to 24 weeks	

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 statistical analysis was planned or performed.

End point values	MMB 100 mg (PV Cohort)	MMB 200 mg (PV Cohort)	MMB 100 mg (ET Cohort)	MMB 200 mg (ET Cohort)
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	14	14	5	6
Units: percentage of participants				
number (confidence interval 90%)	0 (0 to 19.3)	14.3 (2.6 to 38.5)	0 (0 to 45.1)	0 (0 to 39.3)

### Statistical analyses

No statistical analyses for this end point

### Secondary: Confirmed overall response rate

End point title	Confirmed overall response rate
End point description: Intent-to-Treat Analysis Set	
End point type	Secondary

End point timeframe:

Up to 24 weeks

End point values	MMB 100 mg (PV Cohort)	MMB 200 mg (PV Cohort)	MMB 100 mg (ET Cohort)	MMB 200 mg (ET Cohort)
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	14	14	5	6
Units: percentage of participants				
number (confidence interval 90%)	0 (0 to 19.3)	7.1 (0.4 to 29.7)	0 (0 to 45.1)	0 (0 to 39.3)

### Statistical analyses

No statistical analyses for this end point

### Secondary: Percentage of participants with hematocrit < 45% in the absence of phlebotomy that lasts at least 4 weeks

End point title	Percentage of participants with hematocrit < 45% in the absence of phlebotomy that lasts at least 4 weeks <sup>[2]</sup>
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End point description:

Participants in the Intent-to-Treat Analysis Set from the PV Cohort were analyzed.

End point type	Secondary
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End point timeframe:

Up to 24 weeks

Notes:

[2] - 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: Hematocrit response was only evaluated in the PV Cohort.

End point values	MMB 100 mg (PV Cohort)	MMB 200 mg (PV Cohort)		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	14	14		
Units: percentage of participants				
number (confidence interval 90%)	28.6 (10.4 to 54)	21.4 (6.1 to 46.6)		

### Statistical analyses

No statistical analyses for this end point

### Secondary: Percentage of participants with WBC < 10 x 10<sup>9</sup>/L that lasts at least 4 weeks

End point title	Percentage of participants with WBC < 10 x 10 <sup>9</sup> /L that lasts at least 4 weeks
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End point description:	
Intent-to-Treat Analysis Set	
End point type	Secondary
End point timeframe:	
Up to 24 weeks	

End point values	MMB 100 mg (PV Cohort)	MMB 200 mg (PV Cohort)	MMB 100 mg (ET Cohort)	MMB 200 mg (ET Cohort)
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	14	14	5	6
Units: percentage of participants				
number (confidence interval 90%)	7.1 (0.4 to 29.7)	35.7 (15.3 to 61)	100 (54.9 to 100)	83.3 (41.8 to 99.1)

### Statistical analyses

No statistical analyses for this end point

### Secondary: Percentage of participants with resolution of palpable splenomegaly that lasts at least 4 weeks

End point title	Percentage of participants with resolution of palpable splenomegaly that lasts at least 4 weeks
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End point description:

Participants in the Intent-to-Treat Analysis Set with baseline spleen size  $\geq 5$  cm were evaluated for spleen response and serve as the denominator for the spleen response rate calculation.

End point type	Secondary
End point timeframe:	
Up to 24 weeks	

End point values	MMB 100 mg (PV Cohort)	MMB 200 mg (PV Cohort)	MMB 100 mg (ET Cohort)	MMB 200 mg (ET Cohort)
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	4	3	0 <sup>[3]</sup>	0 <sup>[4]</sup>
Units: percentage of participants				
number (confidence interval 90%)	25 (1.3 to 75.1)	33.3 (1.7 to 86.5)	( to )	( to )

Notes:

[3] - No participants in this group had a baseline spleen size  $\geq 5$  cm.

[4] - No participants in this group had a baseline spleen size  $\geq 5$  cm.

### Statistical analyses

No statistical analyses for this end point

### Secondary: Percentage of participants with $\geq 10$ point decrease in modified Myeloproliferative Neoplasm Symptom Assessment Form Total Symptom Score

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**(MPNSAF TSS) compared to baseline that lasts at least 12 weeks**

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End point title	Percentage of participants with $\geq 10$ point decrease in modified Myeloproliferative Neoplasm Symptom Assessment Form Total Symptom Score (MPNSAF TSS) compared to baseline that lasts at least 12 weeks
End point description: Intent-to-Treat Analysis Set	
End point type	Secondary
End point timeframe: Up to 24 weeks	

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End point values	MMB 100 mg (PV Cohort)	MMB 200 mg (PV Cohort)	MMB 100 mg (ET Cohort)	MMB 200 mg (ET Cohort)
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	14	14	5	6
Units: percentage of participants				
number (not applicable)	0	7.1	0	16.7

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**Statistical analyses**

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No statistical analyses for this end point

## Adverse events

### Adverse events information

Timeframe for reporting adverse events:

Baseline through end of study drug treatment (mean exposure: MMB 100 mg PV = 109.0 days; MMB 200 mg PV = 122.1 days; MMB 100 mg ET = 154.4 days; MMB 200 mg ET = 127.2 days) plus 30 days

Adverse event reporting additional description:

Safety Analysis Set: all participants in the ITT Analysis Set who received  $\geq 1$  dose of MMB, with study treatment assignments designated according to the actual treatment received.

Assessment type	Systematic
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### Dictionary used

Dictionary name	MedDRA
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Dictionary version	18.0
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### Reporting groups

Reporting group title	MMB 100 mg (PV Cohort)
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Reporting group description:

Participants with polycythemia vera received MMB 100 mg for 24 weeks.

Reporting group title	MMB 200 mg (PV Cohort)
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Reporting group description:

Participants with polycythemia vera received MMB 200 mg for 24 weeks.

Reporting group title	MMB 100 mg (ET Cohort)
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Reporting group description:

Participants with essential thrombocythemia received MMB 100 mg for 24 weeks.

Reporting group title	MMB 200 mg (ET Cohort)
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Reporting group description:

Participants with essential thrombocythemia received MMB 200 mg for 24 weeks.

Serious adverse events	MMB 100 mg (PV Cohort)	MMB 200 mg (PV Cohort)	MMB 100 mg (ET Cohort)
Total subjects affected by serious adverse events			
subjects affected / exposed	1 / 14 (7.14%)	1 / 14 (7.14%)	0 / 5 (0.00%)
number of deaths (all causes)	1	0	0
number of deaths resulting from adverse events	0	0	0
Cardiac disorders			
Cardio-respiratory arrest			
subjects affected / exposed	1 / 14 (7.14%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences causally related to treatment / all	0 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 1	0 / 0	0 / 0
Respiratory, thoracic and mediastinal disorders			
Dyspnoea			
subjects affected / exposed	0 / 14 (0.00%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0

Renal and urinary disorders			
Urinary bladder polyp			
subjects affected / exposed	0 / 14 (0.00%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 1	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0

<b>Serious adverse events</b>	MMB 200 mg (ET Cohort)		
Total subjects affected by serious adverse events			
subjects affected / exposed	1 / 6 (16.67%)		
number of deaths (all causes)	0		
number of deaths resulting from adverse events	0		
Cardiac disorders			
Cardio-respiratory arrest			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences causally related to treatment / all	0 / 0		
deaths causally related to treatment / all	0 / 0		
Respiratory, thoracic and mediastinal disorders			
Dyspnoea			
subjects affected / exposed	1 / 6 (16.67%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Renal and urinary disorders			
Urinary bladder polyp			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences causally related to treatment / all	0 / 0		
deaths causally related to treatment / all	0 / 0		

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

<b>Non-serious adverse events</b>	MMB 100 mg (PV Cohort)	MMB 200 mg (PV Cohort)	MMB 100 mg (ET Cohort)
Total subjects affected by non-serious adverse events			
subjects affected / exposed	12 / 14 (85.71%)	14 / 14 (100.00%)	5 / 5 (100.00%)
Neoplasms benign, malignant and unspecified (incl cysts and polyps)			
Myelofibrosis			

subjects affected / exposed	1 / 14 (7.14%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	1	0	0
Skin cancer			
subjects affected / exposed	1 / 14 (7.14%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	1	0	0
Vascular disorders			
Hypertension			
subjects affected / exposed	3 / 14 (21.43%)	4 / 14 (28.57%)	0 / 5 (0.00%)
occurrences (all)	3	4	0
Flushing			
subjects affected / exposed	0 / 14 (0.00%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	0	1	0
Haematoma			
subjects affected / exposed	0 / 14 (0.00%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	0	0	0
General disorders and administration site conditions			
Fatigue			
subjects affected / exposed	2 / 14 (14.29%)	4 / 14 (28.57%)	0 / 5 (0.00%)
occurrences (all)	2	4	0
Asthenia			
subjects affected / exposed	1 / 14 (7.14%)	2 / 14 (14.29%)	0 / 5 (0.00%)
occurrences (all)	1	2	0
Pyrexia			
subjects affected / exposed	2 / 14 (14.29%)	0 / 14 (0.00%)	1 / 5 (20.00%)
occurrences (all)	2	0	1
Chest pain			
subjects affected / exposed	0 / 14 (0.00%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	0	1	0
Non-cardiac chest pain			
subjects affected / exposed	0 / 14 (0.00%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	0	1	0
Oedema			
subjects affected / exposed	0 / 14 (0.00%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	0	0	0
Oedema peripheral			

subjects affected / exposed	1 / 14 (7.14%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	1	0	0
Pain			
subjects affected / exposed	0 / 14 (0.00%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	0	1	0
Ulcer			
subjects affected / exposed	0 / 14 (0.00%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	0	1	0
Respiratory, thoracic and mediastinal disorders			
Dyspnoea			
subjects affected / exposed	2 / 14 (14.29%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	2	1	0
Cough			
subjects affected / exposed	2 / 14 (14.29%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	3	0	0
Asthma			
subjects affected / exposed	0 / 14 (0.00%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	0	1	0
Nasal congestion			
subjects affected / exposed	1 / 14 (7.14%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	1	0	0
Rhinorrhoea			
subjects affected / exposed	2 / 14 (14.29%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	2	0	0
Haemoptysis			
subjects affected / exposed	0 / 14 (0.00%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	0	1	0
Oropharyngeal pain			
subjects affected / exposed	1 / 14 (7.14%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	1	0	0
Productive cough			
subjects affected / exposed	0 / 14 (0.00%)	0 / 14 (0.00%)	1 / 5 (20.00%)
occurrences (all)	0	0	1
Psychiatric disorders			

Depression subjects affected / exposed occurrences (all)	0 / 14 (0.00%) 0	0 / 14 (0.00%) 0	0 / 5 (0.00%) 0
Insomnia subjects affected / exposed occurrences (all)	0 / 14 (0.00%) 0	1 / 14 (7.14%) 1	0 / 5 (0.00%) 0
Investigations			
Blood phosphorus increased subjects affected / exposed occurrences (all)	0 / 14 (0.00%) 0	1 / 14 (7.14%) 1	0 / 5 (0.00%) 0
Blood uric acid increased subjects affected / exposed occurrences (all)	0 / 14 (0.00%) 0	0 / 14 (0.00%) 0	1 / 5 (20.00%) 1
Creatinine renal clearance decreased subjects affected / exposed occurrences (all)	0 / 14 (0.00%) 0	1 / 14 (7.14%) 1	0 / 5 (0.00%) 0
Electrocardiogram QT prolonged subjects affected / exposed occurrences (all)	0 / 14 (0.00%) 0	1 / 14 (7.14%) 1	0 / 5 (0.00%) 0
Platelet count increased subjects affected / exposed occurrences (all)	0 / 14 (0.00%) 0	1 / 14 (7.14%) 1	0 / 5 (0.00%) 0
Weight increased subjects affected / exposed occurrences (all)	0 / 14 (0.00%) 0	1 / 14 (7.14%) 1	0 / 5 (0.00%) 0
Injury, poisoning and procedural complications			
Contusion subjects affected / exposed occurrences (all)	1 / 14 (7.14%) 1	0 / 14 (0.00%) 0	0 / 5 (0.00%) 0
Hand fracture subjects affected / exposed occurrences (all)	0 / 14 (0.00%) 0	0 / 14 (0.00%) 0	0 / 5 (0.00%) 0
Skin abrasion subjects affected / exposed occurrences (all)	1 / 14 (7.14%) 1	0 / 14 (0.00%) 0	0 / 5 (0.00%) 0
Cardiac disorders			

Palpitations			
subjects affected / exposed	1 / 14 (7.14%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	1	0	0
Nervous system disorders			
Headache			
subjects affected / exposed	5 / 14 (35.71%)	4 / 14 (28.57%)	1 / 5 (20.00%)
occurrences (all)	5	4	2
Dizziness			
subjects affected / exposed	0 / 14 (0.00%)	6 / 14 (42.86%)	0 / 5 (0.00%)
occurrences (all)	0	6	0
Somnolence			
subjects affected / exposed	4 / 14 (28.57%)	2 / 14 (14.29%)	0 / 5 (0.00%)
occurrences (all)	6	2	0
Peripheral sensory neuropathy			
subjects affected / exposed	1 / 14 (7.14%)	1 / 14 (7.14%)	1 / 5 (20.00%)
occurrences (all)	2	1	1
Paraesthesia			
subjects affected / exposed	0 / 14 (0.00%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	0	1	0
Aura			
subjects affected / exposed	0 / 14 (0.00%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	0	1	0
Burning sensation			
subjects affected / exposed	0 / 14 (0.00%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	0	0	0
Disturbance in attention			
subjects affected / exposed	0 / 14 (0.00%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	0	1	0
Dysaesthesia			
subjects affected / exposed	0 / 14 (0.00%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	0	1	0
Dysgeusia			
subjects affected / exposed	0 / 14 (0.00%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	0	1	0
Psychomotor hyperactivity			



subjects affected / exposed occurrences (all)	0 / 14 (0.00%) 0	0 / 14 (0.00%) 0	0 / 5 (0.00%) 0
Sciatica subjects affected / exposed occurrences (all)	0 / 14 (0.00%) 0	1 / 14 (7.14%) 1	0 / 5 (0.00%) 0
Syncope subjects affected / exposed occurrences (all)	0 / 14 (0.00%) 0	1 / 14 (7.14%) 1	0 / 5 (0.00%) 0
Tremor subjects affected / exposed occurrences (all)	1 / 14 (7.14%) 1	0 / 14 (0.00%) 0	0 / 5 (0.00%) 0
Blood and lymphatic system disorders Thrombocytosis subjects affected / exposed occurrences (all)	1 / 14 (7.14%) 1	1 / 14 (7.14%) 1	1 / 5 (20.00%) 1
Iron deficiency anaemia subjects affected / exposed occurrences (all)	0 / 14 (0.00%) 0	1 / 14 (7.14%) 1	0 / 5 (0.00%) 0
Eye disorders Cataract subcapsular subjects affected / exposed occurrences (all)	0 / 14 (0.00%) 0	1 / 14 (7.14%) 1	0 / 5 (0.00%) 0
Ocular discomfort subjects affected / exposed occurrences (all)	0 / 14 (0.00%) 0	0 / 14 (0.00%) 0	0 / 5 (0.00%) 0
Vision blurred subjects affected / exposed occurrences (all)	1 / 14 (7.14%) 1	0 / 14 (0.00%) 0	0 / 5 (0.00%) 0
Gastrointestinal disorders Nausea subjects affected / exposed occurrences (all)	2 / 14 (14.29%) 2	4 / 14 (28.57%) 4	0 / 5 (0.00%) 0
Diarrhoea subjects affected / exposed occurrences (all)	2 / 14 (14.29%) 3	2 / 14 (14.29%) 2	1 / 5 (20.00%) 3
Vomiting			

subjects affected / exposed	1 / 14 (7.14%)	3 / 14 (21.43%)	0 / 5 (0.00%)
occurrences (all)	1	3	0
Abdominal pain			
subjects affected / exposed	0 / 14 (0.00%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	0	3	0
Constipation			
subjects affected / exposed	2 / 14 (14.29%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	2	1	0
Flatulence			
subjects affected / exposed	0 / 14 (0.00%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	0	1	0
Abdominal distension			
subjects affected / exposed	1 / 14 (7.14%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	1	0	0
Abdominal pain upper			
subjects affected / exposed	0 / 14 (0.00%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	0	0	0
Dyspepsia			
subjects affected / exposed	0 / 14 (0.00%)	0 / 14 (0.00%)	1 / 5 (20.00%)
occurrences (all)	0	0	1
Gastrooesophageal reflux disease			
subjects affected / exposed	0 / 14 (0.00%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	0	1	0
Gingival recession			
subjects affected / exposed	1 / 14 (7.14%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	1	0	0
Salivary hypersecretion			
subjects affected / exposed	1 / 14 (7.14%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	1	0	0
Skin and subcutaneous tissue disorders			
Pruritus			
subjects affected / exposed	2 / 14 (14.29%)	3 / 14 (21.43%)	0 / 5 (0.00%)
occurrences (all)	3	4	0
Alopecia			
subjects affected / exposed	1 / 14 (7.14%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	1	0	0

Night sweats			
subjects affected / exposed	1 / 14 (7.14%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	1	1	0
Rash			
subjects affected / exposed	0 / 14 (0.00%)	2 / 14 (14.29%)	0 / 5 (0.00%)
occurrences (all)	0	2	0
Cold sweat			
subjects affected / exposed	0 / 14 (0.00%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	0	1	0
Erythrosis			
subjects affected / exposed	0 / 14 (0.00%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	0	1	0
Skin exfoliation			
subjects affected / exposed	0 / 14 (0.00%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	0	2	0
Renal and urinary disorders			
Pollakiuria			
subjects affected / exposed	1 / 14 (7.14%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	1	1	0
Endocrine disorders			
Hypothyroidism			
subjects affected / exposed	1 / 14 (7.14%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	1	0	0
Musculoskeletal and connective tissue disorders			
Pain in extremity			
subjects affected / exposed	1 / 14 (7.14%)	2 / 14 (14.29%)	1 / 5 (20.00%)
occurrences (all)	1	2	1
Bone pain			
subjects affected / exposed	1 / 14 (7.14%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	1	1	0
Arthralgia			
subjects affected / exposed	0 / 14 (0.00%)	0 / 14 (0.00%)	1 / 5 (20.00%)
occurrences (all)	0	0	1
Musculoskeletal chest pain			
subjects affected / exposed	1 / 14 (7.14%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	1	1	0

Back pain			
subjects affected / exposed	0 / 14 (0.00%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	0	1	0
Flank pain			
subjects affected / exposed	0 / 14 (0.00%)	0 / 14 (0.00%)	1 / 5 (20.00%)
occurrences (all)	0	0	1
Myalgia			
subjects affected / exposed	0 / 14 (0.00%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	0	1	0
Infections and infestations			
Influenza			
subjects affected / exposed	1 / 14 (7.14%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	1	0	0
Urinary tract infection			
subjects affected / exposed	1 / 14 (7.14%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	1	1	0
Bronchitis			
subjects affected / exposed	1 / 14 (7.14%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	1	0	0
Cellulitis			
subjects affected / exposed	1 / 14 (7.14%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	1	0	0
Cystitis			
subjects affected / exposed	0 / 14 (0.00%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	0	0	0
Gastroenteritis			
subjects affected / exposed	0 / 14 (0.00%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	0	1	0
Gastroenteritis viral			
subjects affected / exposed	0 / 14 (0.00%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	0	1	0
Laryngitis			
subjects affected / exposed	1 / 14 (7.14%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	1	0	0
Nasopharyngitis			

subjects affected / exposed	0 / 14 (0.00%)	0 / 14 (0.00%)	1 / 5 (20.00%)
occurrences (all)	0	0	1
Pharyngitis			
subjects affected / exposed	0 / 14 (0.00%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	0	0	0
Sinusitis			
subjects affected / exposed	0 / 14 (0.00%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	0	0	0
Tooth abscess			
subjects affected / exposed	0 / 14 (0.00%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	0	0	0
Tooth infection			
subjects affected / exposed	0 / 14 (0.00%)	0 / 14 (0.00%)	1 / 5 (20.00%)
occurrences (all)	0	0	1
Upper respiratory tract infection			
subjects affected / exposed	0 / 14 (0.00%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	0	0	0
Viral infection			
subjects affected / exposed	0 / 14 (0.00%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	0	0	0
Vulvovaginal mycotic infection			
subjects affected / exposed	0 / 14 (0.00%)	0 / 14 (0.00%)	0 / 5 (0.00%)
occurrences (all)	0	0	0
Metabolism and nutrition disorders			
Decreased appetite			
subjects affected / exposed	1 / 14 (7.14%)	1 / 14 (7.14%)	0 / 5 (0.00%)
occurrences (all)	1	1	0

<b>Non-serious adverse events</b>	MMB 200 mg (ET Cohort)		
Total subjects affected by non-serious adverse events			
subjects affected / exposed	5 / 6 (83.33%)		
Neoplasms benign, malignant and unspecified (incl cysts and polyps)			
Myelofibrosis			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Skin cancer			

subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0		
Vascular disorders			
Hypertension			
subjects affected / exposed	1 / 6 (16.67%)		
occurrences (all)	2		
Flushing			
subjects affected / exposed	1 / 6 (16.67%)		
occurrences (all)	1		
Haematoma			
subjects affected / exposed	1 / 6 (16.67%)		
occurrences (all)	1		
General disorders and administration site conditions			
Fatigue			
subjects affected / exposed	2 / 6 (33.33%)		
occurrences (all)	2		
Asthenia			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Pyrexia			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Chest pain			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Non-cardiac chest pain			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Oedema			
subjects affected / exposed	1 / 6 (16.67%)		
occurrences (all)	1		
Oedema peripheral			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Pain			

subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Ulcer			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Respiratory, thoracic and mediastinal disorders			
Dyspnoea			
subjects affected / exposed	1 / 6 (16.67%)		
occurrences (all)	1		
Cough			
subjects affected / exposed	1 / 6 (16.67%)		
occurrences (all)	1		
Asthma			
subjects affected / exposed	1 / 6 (16.67%)		
occurrences (all)	1		
Nasal congestion			
subjects affected / exposed	1 / 6 (16.67%)		
occurrences (all)	1		
Rhinorrhoea			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Haemoptysis			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Oropharyngeal pain			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Productive cough			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Psychiatric disorders			
Depression			
subjects affected / exposed	1 / 6 (16.67%)		
occurrences (all)	1		
Insomnia			

subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0		
Investigations			
Blood phosphorus increased subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0		
Blood uric acid increased subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0		
Creatinine renal clearance decreased subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0		
Electrocardiogram QT prolonged subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0		
Platelet count increased subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0		
Weight increased subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0		
Injury, poisoning and procedural complications			
Contusion subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0		
Hand fracture subjects affected / exposed occurrences (all)	1 / 6 (16.67%) 1		
Skin abrasion subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0		
Cardiac disorders			
Palpitations subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0		
Nervous system disorders			



Headache			
subjects affected / exposed	3 / 6 (50.00%)		
occurrences (all)	4		
Dizziness			
subjects affected / exposed	3 / 6 (50.00%)		
occurrences (all)	3		
Somnolence			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Peripheral sensory neuropathy			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Paraesthesia			
subjects affected / exposed	1 / 6 (16.67%)		
occurrences (all)	1		
Aura			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Burning sensation			
subjects affected / exposed	1 / 6 (16.67%)		
occurrences (all)	1		
Disturbance in attention			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Dysaesthesia			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Dysgeusia			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Psychomotor hyperactivity			
subjects affected / exposed	1 / 6 (16.67%)		
occurrences (all)	1		
Sciatica			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		

Syncope subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0		
Tremor subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0		
Blood and lymphatic system disorders Thrombocytosis subjects affected / exposed occurrences (all)	3 / 6 (50.00%) 3		
Iron deficiency anaemia subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0		
Eye disorders Cataract subcapsular subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0		
Ocular discomfort subjects affected / exposed occurrences (all)	1 / 6 (16.67%) 1		
Vision blurred subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0		
Gastrointestinal disorders Nausea subjects affected / exposed occurrences (all)	2 / 6 (33.33%) 2		
Diarrhoea subjects affected / exposed occurrences (all)	2 / 6 (33.33%) 2		
Vomiting subjects affected / exposed occurrences (all)	2 / 6 (33.33%) 3		
Abdominal pain subjects affected / exposed occurrences (all)	2 / 6 (33.33%) 2		
Constipation			

subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Flatulence			
subjects affected / exposed	1 / 6 (16.67%)		
occurrences (all)	1		
Abdominal distension			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Abdominal pain upper			
subjects affected / exposed	1 / 6 (16.67%)		
occurrences (all)	1		
Dyspepsia			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Gastrooesophageal reflux disease			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Gingival recession			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Salivary hypersecretion			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Skin and subcutaneous tissue disorders			
Pruritus			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Alopecia			
subjects affected / exposed	1 / 6 (16.67%)		
occurrences (all)	1		
Night sweats			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Rash			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		

Cold sweat subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0		
Erythrosis subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0		
Skin exfoliation subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0		
Renal and urinary disorders Pollakiuria subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0		
Endocrine disorders Hypothyroidism subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0		
Musculoskeletal and connective tissue disorders Pain in extremity subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0		
Bone pain subjects affected / exposed occurrences (all)	1 / 6 (16.67%) 1		
Arthralgia subjects affected / exposed occurrences (all)	1 / 6 (16.67%) 1		
Musculoskeletal chest pain subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0		
Back pain subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0		
Flank pain subjects affected / exposed occurrences (all)	0 / 6 (0.00%) 0		

Myalgia			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Infections and infestations			
Influenza			
subjects affected / exposed	1 / 6 (16.67%)		
occurrences (all)	2		
Urinary tract infection			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Bronchitis			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Cellulitis			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Cystitis			
subjects affected / exposed	1 / 6 (16.67%)		
occurrences (all)	1		
Gastroenteritis			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Gastroenteritis viral			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Laryngitis			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Nasopharyngitis			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Pharyngitis			
subjects affected / exposed	1 / 6 (16.67%)		
occurrences (all)	1		
Sinusitis			

subjects affected / exposed	1 / 6 (16.67%)		
occurrences (all)	1		
Tooth abscess			
subjects affected / exposed	1 / 6 (16.67%)		
occurrences (all)	1		
Tooth infection			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		
Upper respiratory tract infection			
subjects affected / exposed	1 / 6 (16.67%)		
occurrences (all)	2		
Viral infection			
subjects affected / exposed	1 / 6 (16.67%)		
occurrences (all)	1		
Vulvovaginal mycotic infection			
subjects affected / exposed	1 / 6 (16.67%)		
occurrences (all)	1		
Metabolism and nutrition disorders			
Decreased appetite			
subjects affected / exposed	0 / 6 (0.00%)		
occurrences (all)	0		

## More information

### Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
03 January 2014	Incorporated newly available data and updates to study procedures.
14 July 2014	Updates to study procedures and restrictions based on newly available data.

Notes:

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### Interruptions (globally)

Were there any global interruptions to the trial? Yes

Date	Interruption	Restart date
22 September 2014	The study was discontinued due to limited efficacy observed in planned interim analyses.	-

Notes:

### Limitations and caveats

Limitations of the trial such as small numbers of subjects analysed or technical problems leading to unreliable data.

These data represent fewer than the planned number of subjects with limited treatment duration.

Notes: