



## Clinical trial results:

**A randomized, double-blind, placebo-controlled, 4-way cross-over, multiple dose study to investigate the analgesic effects of buprenorphine and minacipran in healthy volunteers**

### Summary

EudraCT number	2012-002302-43
Trial protocol	NL
Global end of trial date	04 October 2012

### Results information

Result version number	v1 (current)
This version publication date	24 June 2022
First version publication date	24 June 2022

### Trial information

#### Trial identification

Sponsor protocol code	DFP-06/CD/001
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#### Additional study identifiers

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

Notes:

### Sponsors

Sponsor organisation name	Dr. Reddy's Laboratories Limited
Sponsor organisation address	8-2-337 Road no. 3, Banjara Hills , Hyderabad, India, 500034
Public contact	Geert Jan Groeneveld, Cente for Human Drug Research, 31 715246400, GGroeneveld@chdr.nl
Scientific contact	Geert Jan Groeneveld, Cente for Human Drug Research, 31 715246400, GGroeneveld@chdr.nl

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	20 October 2012
Is this the analysis of the primary completion data?	Yes
Primary completion date	04 October 2012
Global end of trial reached?	Yes
Global end of trial date	04 October 2012
Was the trial ended prematurely?	No

Notes:

## General information about the trial

Main objective of the trial:

1. To determine if the analgesic effects of co-administration of a single oral dose of milnacipran with a single intravenous dose of buprenorphine were higher than those of buprenorphine alone (potentiation) or higher than those of buprenorphine alone plus milnacipran alone (synergy) in healthy subjects.
2. To determine if the analgesic effects of co-administration of 8 days of milnacipran bid in combination with a single administration of buprenorphine were higher than those of buprenorphine alone (potentiation) or higher than those of buprenorphine alone plus multiple doses of milnacipran alone (synergy) in healthy subjects.
3. To investigate the safety and tolerability of co-administration of intravenous buprenorphine and oral milnacipran in healthy subjects.
4. To examine the potential pharmacokinetic interactions between intravenous buprenorphine and oral milnacipran in healthy subjects.

Protection of trial subjects:

Subjects were given an oral and written explanation about the study. Only after they had given written acknowledgement of informed consent to participate did any trial-related procedure take place. All informed consent forms were signed in duplicate by the subject and the investigator or his delegate, with one original being retained at the investigational site.

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	11 June 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	Netherlands: 11
Worldwide total number of subjects	11
EEA total number of subjects	11

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)	11
From 65 to 84 years	0
85 years and over	0

## Subject disposition

### Recruitment

Recruitment details:

Study participants were recruited from CHDR volunteer database. The subjects were recruited after screening on the basis of inclusion and exclusion criteria as defined in the study protocol.

### Pre-assignment

Screening details:

The subjects were screened on the basis of inclusion and exclusion criteria as defined in the protocol.

### 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

### Arms

Are arms mutually exclusive?	No
<b>Arm title</b>	Buprenorphine placebo+ Milnacipran 50 mg

Arm description:

Milnacipran was administered twice daily. 3 different doses of Buprenorphine were used as follows:

- A. First 30 minute infusion: 0.5 µg/kg (sub-therapeutic dose).
- B. Second 30 minute infusion: 1 µg/kg (minimum therapeutic dose).
- C. Third 30 minute infusion: 3 µg/kg (clinically relevant therapeutic dose).

Arm type	Experimental
Investigational medicinal product name	Buprenorphine
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Concentrate for solution for infusion
Routes of administration	Infusion

Dosage and administration details:

- A. First 30 minute infusion: 0.5 µg/kg (sub-therapeutic dose).
- B. Second 30 minute infusion: 1 µg/kg (minimum therapeutic dose).
- C. Third 30 minute infusion: 3 µg/kg (clinically relevant therapeutic dose).

Investigational medicinal product name	Milnacipran
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Tablet
Routes of administration	Oral use

Dosage and administration details:

Administered twice daily

<b>Arm title</b>	Buprenorphine active+ Milnacipran 25 mg
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Arm description:

Buprenorphine was administered on Day 1 and Day 8 and in three different doses: first a 30 minutes 0.5 µg/kg sub-therapeutic infusion followed 1.5 hours later by a second 30 minutes 1 µg/kg minimally-therapeutic infusion followed 1.5 hours later by the last 30 minutes 3 µg/kg therapeutic infusion. Milnacipran was administered twice daily (bid)

Arm type	Experimental
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Investigational medicinal product name	Buprenorphine
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Concentrate for solution for infusion
Routes of administration	Infusion

Dosage and administration details:

- A. First 30 minute infusion: 0.5 µg/kg (sub-therapeutic dose).
- B. Second 30 minute infusion: 1 µg/kg (minimum therapeutic dose).
- C. Third 30 minute infusion: 3 µg/kg (clinically relevant therapeutic dose).

Investigational medicinal product name	Milnacipran
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Tablet
Routes of administration	Oral use

Dosage and administration details:

Administered twice daily

<b>Arm title</b>	Buprenorphine active+ Milnacipran 50 mg
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Arm description:

Milnacipran was administered twice daily. 3 different doses of Buprenorphine were used as follows:

- A. First 30 minute infusion: 0.5 µg/kg (sub-therapeutic dose).
- B. Second 30 minute infusion: 1 µg/kg (minimum therapeutic dose).
- C. Third 30 minute infusion: 3 µg/kg (clinically relevant therapeutic dose).

Arm type	Experimental
Investigational medicinal product name	Buprenorphine
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Concentrate for solution for infusion
Routes of administration	Infusion

Dosage and administration details:

- A. First 30 minute infusion: 0.5 µg/kg (sub-therapeutic dose).
- B. Second 30 minute infusion: 1 µg/kg (minimum therapeutic dose).
- C. Third 30 minute infusion: 3 µg/kg (clinically relevant therapeutic dose).

Investigational medicinal product name	Milnacipran
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Tablet
Routes of administration	Oral use

Dosage and administration details:

Administered twice daily

<b>Arm title</b>	Buprenorphine active+ Milnacipran placebo
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Arm description:

Milnacipran was administered twice daily. 3 different doses of Buprenorphine were used as follows:

- A. First 30 minute infusion: 0.5 µg/kg (sub-therapeutic dose).
- B. Second 30 minute infusion: 1 µg/kg (minimum therapeutic dose).
- C. Third 30 minute infusion: 3 µg/kg (clinically relevant therapeutic dose).

Arm type	Experimental
Investigational medicinal product name	Buprenorphine
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Concentrate for solution for infusion
Routes of administration	Infusion

Dosage and administration details:

- A. First 30 minute infusion: 0.5 µg/kg (sub-therapeutic dose).
- B. Second 30 minute infusion: 1 µg/kg (minimum therapeutic dose).

C. Third 30 minute infusion: 3 µg/kg (clinically relevant therapeutic dose).

Investigational medicinal product name	Milnacipran
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Tablet
Routes of administration	Oral use

Dosage and administration details:

Administered twice daily

<b>Number of subjects in period 1</b>	Buprenorphine placebo+ Milnacipran 50 mg	Buprenorphine active+ Milnacipran 25 mg	Buprenorphine active+ Milnacipran 50 mg
Started	11	9	10
Completed	10	9	9
Not completed	1	0	1
Consent withdrawn by subject	1	-	1

<b>Number of subjects in period 1</b>	Buprenorphine active+ Milnacipran placebo
Started	10
Completed	10
Not completed	0
Consent withdrawn by subject	-

## Baseline characteristics

### Reporting groups

Reporting group title	Overall Trial
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Reporting group description: -

Reporting group values	Overall Trial	Total	
Number of subjects	11	11	
Age categorical			
Units: Subjects			
In utero	0	0	
Preterm newborn infants (gestational age < 37 wks)	0	0	
Newborns (0-27 days)	0	0	
Infants and toddlers (28 days-23 months)	0	0	
Children (2-11 years)	0	0	
Adolescents (12-17 years)	0	0	
Adults (18-64 years)	11	11	
From 65-84 years	0	0	
85 years and over	0	0	
Age continuous			
Units: years			
arithmetic mean	24.2		
standard deviation	± 3.5	-	
Gender categorical			
Units: Subjects			
Female	0	0	
Male	11	11	

## End points

### End points reporting groups

Reporting group title	Buprenorphine placebo+ Milnacipran 50 mg
Reporting group description: Milnacipran was administered twice daily. 3 different doses of Buprenorphine were used as follows: A. First 30 minute infusion: 0.5 µg/kg (sub-therapeutic dose). B. Second 30 minute infusion: 1 µg/kg (minimum therapeutic dose). C. Third 30 minute infusion: 3 µg/kg (clinically relevant therapeutic dose).	
Reporting group title	Buprenorphine active+ Milnacipran 25 mg
Reporting group description: Buprenorphine was administered on Day 1 and Day 8 and in three different doses: first a 30 minutes 0.5 µg/kg sub-therapeutic infusion followed 1.5 hours later by a second 30 minutes 1 µg/kg minimally-therapeutic infusion followed 1.5 hours later by the last 30 minutes 3 µg/kg therapeutic infusion. Milnacipran was administered twice daily (bid)	
Reporting group title	Buprenorphine active+ Milnacipran 50 mg
Reporting group description: Milnacipran was administered twice daily. 3 different doses of Buprenorphine were used as follows: A. First 30 minute infusion: 0.5 µg/kg (sub-therapeutic dose). B. Second 30 minute infusion: 1 µg/kg (minimum therapeutic dose). C. Third 30 minute infusion: 3 µg/kg (clinically relevant therapeutic dose).	
Reporting group title	Buprenorphine active+ Milnacipran placebo
Reporting group description: Milnacipran was administered twice daily. 3 different doses of Buprenorphine were used as follows: A. First 30 minute infusion: 0.5 µg/kg (sub-therapeutic dose). B. Second 30 minute infusion: 1 µg/kg (minimum therapeutic dose). C. Third 30 minute infusion: 3 µg/kg (clinically relevant therapeutic dose).	
Subject analysis set title	BUP+MIL-P vs BUP+MIL-25 after first bump
Subject analysis set type	Full analysis
Subject analysis set description: Comparison of Buprenorphine +Milnacipran placebo and Buprenorphine + Milnacipran 25 mg	
Subject analysis set title	BUP+MIL-P vs BUP+MIL-25 after second bump
Subject analysis set type	Full analysis
Subject analysis set description: Comparison of Buprenorphine+ Milnacipran placebo and Buprenorphine+ Milnacipran 25 mg after second infusion of Buprenorphine	
Subject analysis set title	BUP+MIL-P vs BUP+MIL-25 after third bump
Subject analysis set type	Full analysis
Subject analysis set description: Comparison of Buprenorphine+ Milnacipran placebo and Buprenorphine+ Milnacipran 25 mg after third infusion of Buprenorphine	
Subject analysis set title	BUP+MIL-P vs BUP+MIL-25
Subject analysis set type	Full analysis
Subject analysis set description: Comparison of Buprenorphine + Milnacipran placebo and Buprenorphine+ Milnacipran 25 mg	
Subject analysis set title	BUP+MIL-P vs BUP+MIL-50
Subject analysis set type	Full analysis
Subject analysis set description: Comparison of Buprenorphine+ Milnacipran placebo and Buprenorphine+ Milnacipran 50 mg	
Subject analysis set title	BUP+MIL-P vs BUP+MIL-50 after first bump
Subject analysis set type	Full analysis
Subject analysis set description: Comparison of Buprenorphine+ Milnacipran placebo and Buprenorphine+ Milnacipran 50 mg after first infusion of Buprenorphine	
Subject analysis set title	BUP+MIL-P vs BUP+MIL-50 after second bump

Subject analysis set type	Full analysis
Subject analysis set description: Comparison of Buprenorphine+ Milnacipran placebo and Buprenorphine+ Milnacipran 50 mg after second infusion of Buprenorphine	
Subject analysis set title	BUP+MIL-P vs BUP+MIL-50 after third bump
Subject analysis set type	Full analysis
Subject analysis set description: Comparison of Buprenorphine+ Milnacipran placebo and Buprenorphine+ Milnacipran 25 mg after third infusion of Buprenorphine	
Subject analysis set title	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50
Subject analysis set type	Full analysis
Subject analysis set description: Comparison of treatments: (BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50	
Subject analysis set title	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at first infusion
Subject analysis set type	Full analysis
Subject analysis set description: Comparison of treatments: (BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 after first infusion of Buprenorphine	
Subject analysis set title	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 2nd infusion
Subject analysis set type	Full analysis
Subject analysis set description: Comparison of treatments: (BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 after second infusion of Buprenorphine	
Subject analysis set title	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 3rd infusion
Subject analysis set type	Full analysis
Subject analysis set description: Comparison of treatments: (BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 after third infusion of Buprenorphine	

### Primary: Milnacipran AUC (0-t)- Day 1

End point title	Milnacipran AUC (0-t)- Day 1 <sup>[1][2]</sup>
End point description:	
End point type	Primary
End point timeframe: AUC measured on administration of Milnacipran on Day 1	

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: Statistical Analysis has not been specified because the study population is small.

[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: The end point for all baseline period arm is not reported as Milnacipran Placebo is administered to the subjects in one of the arms.

End point values	Buprenorphine placebo+ Milnacipran 50 mg	Buprenorphine active+ Milnacipran 25 mg	Buprenorphine active+ Milnacipran 50 mg	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	11	9	10	
Units: ng.hr/mL				
arithmetic mean (standard deviation)	696.50 (± 160.60)	318.10 (± 102.30)	633.00 (± 154.00)	

## Statistical analyses

No statistical analyses for this end point

### Primary: Milnacipran tmax- Day 1

End point title | Milnacipran tmax- Day 1<sup>[3][4]</sup>

End point description:

End point type | Primary

End point timeframe:

Time to reach maximum plasma concentration (Cmax) on Day 1

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: Statistical Analysis has not been specified because the study population is small.

[4] - 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: The end point for all baseline period arm is not reported as Milnacipran Placebo is administered to the subjects in one of the arms.

End point values	Buprenorphine placebo+ Milnacipran 50 mg	Buprenorphine active+ Milnacipran 25 mg	Buprenorphine active+ Milnacipran 50 mg	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	11	9	10	
Units: hour				
arithmetic mean (standard deviation)	3.156 (± 0.6175)	3.204 (± 0.8491)	3.17 (± 1.05)	

## Statistical analyses

No statistical analyses for this end point

### Primary: Milnacipran Cmax- Day 1

End point title | Milnacipran Cmax- Day 1<sup>[5][6]</sup>

End point description:

End point type | Primary

End point timeframe:

Cmax measured on Day 1

Notes:

[5] - 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: Statistical Analysis has not been specified because the study population is small.

[6] - 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: The end point for all baseline period arm is not reported as Milnacipran Placebo is administered to the subjects in one of the arms.

<b>End point values</b>	Buprenorphine placebo+ Milnacipran 50 mg	Buprenorphine active+ Milnacipran 25 mg	Buprenorphine active+ Milnacipran 50 mg	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	11	9	10	
Units: nanogram(s)/millilitre				
arithmetic mean (standard deviation)	105.20 ( $\pm$ 26.93)	46.92 ( $\pm$ 15.92)	99.81 ( $\pm$ 37.20)	

### Statistical analyses

No statistical analyses for this end point

#### Primary: Milnacipran AUC (0-t)- Day 8

End point title	Milnacipran AUC (0-t)- Day 8 <sup>[7][8]</sup>
End point description:	

End point type	Primary
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End point timeframe:

Area under the curve (AUC (0-t)) on day 8

Notes:

[7] - 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: Statistical Analysis has not been specified because the study population is small.

[8] - 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: The end point for all baseline period arm is not reported as Milnacipran Placebo is administered to the subjects in one of the arms.

<b>End point values</b>	Buprenorphine placebo+ Milnacipran 50 mg	Buprenorphine active+ Milnacipran 25 mg	Buprenorphine active+ Milnacipran 50 mg	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	10	9	9	
Units: ng.hr/mL				
arithmetic mean (standard deviation)	1281.0 ( $\pm$ 178.60)	629.20 ( $\pm$ 94.10)	1251.0 ( $\pm$ 306.70)	

### Statistical analyses

No statistical analyses for this end point

#### Primary: Milnacipran tmax- Day 8

End point title	Milnacipran tmax- Day 8 <sup>[9][10]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Time taken to reach Cmax measured on Day 8 of the clinical trial

Notes:

[9] - 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: Statistical Analysis has not been specified because the study population is small.

[10] - 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: The end point for all baseline period arm is not reported as Milnacipran Placebo is administered to the subjects in one of the arms.

End point values	Buprenorphine placebo+ Milnacipran 50 mg	Buprenorphine active+ Milnacipran 25 mg	Buprenorphine active+ Milnacipran 50 mg	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	10	9	9	
Units: hour				
arithmetic mean (standard deviation)	1.845 (± 1.02)	2.646 (± 0.4848)	3.104 (± 0.9775)	

## Statistical analyses

No statistical analyses for this end point

### Primary: Milnacipran Cmax- Day 8

End point title	Milnacipran Cmax- Day 8 <sup>[11][12]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Milnacipran Cmax measured on Day 8 of the study

Notes:

[11] - 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: Statistical Analysis has not been specified because the study population is small.

[12] - 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: The end point for all baseline period arm is not reported as Milnacipran Placebo is administered to the subjects in one of the arms.

End point values	Buprenorphine placebo+ Milnacipran 50 mg	Buprenorphine active+ Milnacipran 25 mg	Buprenorphine active+ Milnacipran 50 mg	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	10	9	9	
Units: nanogram(s)/millilitre				
arithmetic mean (standard deviation)	201.20 (± 58.51)	93.840 (± 11.69)	188.30 (± 66.65)	

## Statistical analyses

No statistical analyses for this end point

### Primary: Buprenorphine Cmax after final IV infusion- Day 1

End point title Buprenorphine Cmax after final IV infusion- Day 1<sup>[13][14]</sup>

End point description:

End point type Primary

End point timeframe:

Cmax after 3rd IV infusion on Day 1

Notes:

[13] - 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: Statistical Analysis has not been specified because the study population is small.

[14] - 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: The end point for all baseline period arm is not reported as Buprenorphine Placebo is administered to the subjects in one of the arms.

End point values	Buprenorphine active+ Milnacipran 25 mg	Buprenorphine active+ Milnacipran 50 mg	Buprenorphine active+ Milnacipran placebo	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	9	9	9	
Units: nanogram(s)/millilitre				
arithmetic mean (standard deviation)	0.375 (± 0.0197)	0.348 (± 0.0785)	0.369 (± 0.0566)	

## Statistical analyses

No statistical analyses for this end point

### Primary: Buprenorphine Cmax after final IV infusion- Day 8

End point title Buprenorphine Cmax after final IV infusion- Day 8<sup>[15][16]</sup>

End point description:

End point type Primary

End point timeframe:

Cmax after final infusion of Buprenorphine on Day 8

Notes:

[15] - 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: Statistical Analysis has not been specified because the study population is small.

[16] - 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: The end point for all baseline period arm is not reported as Buprenorphine Placebo is administered to the subjects in one of the arms.

<b>End point values</b>	Buprenorphine active+ Milnacipran 25 mg	Buprenorphine active+ Milnacipran 50 mg	Buprenorphine active+ Milnacipran placebo	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	9	9	9	
Units: nanogram(s)/millilitre				
arithmetic mean (standard deviation)	0.355 (± 0.0534)	0.389 (± 0.0720)	0.374 (± 0.0586)	

### Statistical analyses

No statistical analyses for this end point

### Secondary: Estimate of difference of electrical repeat pain AUC- DAY 1

End point title Estimate of difference of electrical repeat pain AUC- DAY 1

End point description:

End point type Secondary

End point timeframe:

Measured on day 1, over approximately 5 hours following study drug/placebo administration

<b>End point values</b>	BUP+MIL-P vs BUP+MIL-25 after first bump	BUP+MIL-P vs BUP+MIL-25 after second bump	BUP+MIL-P vs BUP+MIL-25 after third bump	BUP+MIL-P vs BUP+MIL-25
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.mA				
number (not applicable)	272	-242	621	217

<b>End point values</b>	BUP+MIL-P vs BUP+MIL-50	BUP+MIL-P vs BUP+MIL-50 after first bump	BUP+MIL-P vs BUP+MIL-50 after second bump	BUP+MIL-P vs BUP+MIL-50 after third bump
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.mA				

number (not applicable)	-92	-137	-455	317
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<b>End point values</b>	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at first infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 2nd infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 3rd infusion
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.mA				
number (not applicable)	446	514	93	729

### Statistical analyses

No statistical analyses for this end point

### Secondary: Estimate of difference of electrical repeat pain AUC- DAY 8

End point title	Estimate of difference of electrical repeat pain AUC- DAY 8
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End point description:

End point type	Secondary
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End point timeframe:

Measured on day 8, over approximately 5 hours following study drug/placebo administration

<b>End point values</b>	BUP+MIL-P vs BUP+MIL-25 after first bump	BUP+MIL-P vs BUP+MIL-25 after second bump	BUP+MIL-P vs BUP+MIL-25 after third bump	BUP+MIL-P vs BUP+MIL-25
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.mA				
number (not applicable)	-381	-90	-54	-175

<b>End point values</b>	BUP+MIL-P vs BUP+MIL-50	BUP+MIL-P vs BUP+MIL-50 after first bump	BUP+MIL-P vs BUP+MIL-50 after second bump	BUP+MIL-P vs BUP+MIL-50 after third bump
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.mA				
number (not applicable)	-1394	-1509	-1424	-1249

<b>End point values</b>	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at first infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 2nd infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 3rd infusion
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.mA				
number (not applicable)	-860	-1118	-693	-769

### Statistical analyses

No statistical analyses for this end point

### Secondary: Estimate of difference of electrical single pain AUC- DAY 1

End point title	Estimate of difference of electrical single pain AUC- DAY 1
End point description:	
End point type	Secondary
End point timeframe:	Measured on day 1, over approximately 5 hours following study drug/placebo administration

<b>End point values</b>	BUP+MIL-P vs BUP+MIL-25 after first bump	BUP+MIL-P vs BUP+MIL-25 after second bump	BUP+MIL-P vs BUP+MIL-25 after third bump	BUP+MIL-P vs BUP+MIL-25
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.mA				
number (not applicable)	-84	-10	232	46

<b>End point values</b>	BUP+MIL-P vs BUP+MIL-50	BUP+MIL-P vs BUP+MIL-50 after first bump	BUP+MIL-P vs BUP+MIL-50 after second bump	BUP+MIL-P vs BUP+MIL-50 after third bump
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.mA				
number (not applicable)	-226	-273	-266	-138

<b>End point values</b>	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at first infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 2nd infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 3rd infusion
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11		11
Units: mm.mA				
number (not applicable)	-95	-256	-100	72

## Statistical analyses

No statistical analyses for this end point

### Secondary: Estimate of difference of electrical single pain AUC- DAY 8

End point title	Estimate of difference of electrical single pain AUC- DAY 8
End point description:	
End point type	Secondary
End point timeframe:	
Measured on day 8, over approximately 5 hours following study drug/placebo administration	

<b>End point values</b>	BUP+MIL-P vs BUP+MIL-25 after first bump	BUP+MIL-P vs BUP+MIL-25 after second bump	BUP+MIL-P vs BUP+MIL-25 after third bump	BUP+MIL-P vs BUP+MIL-25
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.mA				
number (not applicable)	-59	-132	13	-59

<b>End point values</b>	BUP+MIL-P vs BUP+MIL-50	BUP+MIL-P vs BUP+MIL-50 after first bump	BUP+MIL-P vs BUP+MIL-50 after second bump	BUP+MIL-P vs BUP+MIL-50 after third bump
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.mA				
number (not applicable)	-341	-364	-290	-368

<b>End point values</b>	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at first infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 2nd infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 3rd infusion
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Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.mA				
number (not applicable)	-28	-101	20	-3

## Statistical analyses

No statistical analyses for this end point

### Secondary: Estimate of difference of pressure pain AUC- DAY 1

End point title	Estimate of difference of pressure pain AUC- DAY 1
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End point description:

End point type	Secondary
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End point timeframe:

Measured on day 1, over approximately 5 hours following study drug/placebo administration

End point values	BUP+MIL-P vs BUP+MIL-25 after first bump	BUP+MIL-P vs BUP+MIL-25 after second bump	BUP+MIL-P vs BUP+MIL-25 after third bump	BUP+MIL-P vs BUP+MIL-25
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.mA				
number (not applicable)	173	-696	-531	-352

End point values	BUP+MIL-P vs BUP+MIL-50	BUP+MIL-P vs BUP+MIL-50 after first bump	BUP+MIL-P vs BUP+MIL-50 after second bump	BUP+MIL-P vs BUP+MIL-50 after third bump
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.mA				
number (not applicable)	-324	50	-658	-362

End point values	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at first infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 2nd infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 3rd infusion
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.mA				
number (not applicable)	117	425	-301	227

## Statistical analyses

No statistical analyses for this end point

### Secondary: Estimate of difference of pressure pain AUC- DAY 8

End point title	Estimate of difference of pressure pain AUC- DAY 8
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End point description:

End point type	Secondary
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End point timeframe:

Measured on day 8, over approximately 5 hours following study drug/placebo administration

End point values	BUP+MIL-P vs BUP+MIL-25 after first bump	BUP+MIL-P vs BUP+MIL-25 after second bump	BUP+MIL-P vs BUP+MIL-25 after third bump	BUP+MIL-P vs BUP+MIL-25
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.kPa				
number (not applicable)	-321	-830	316	-278

End point values	BUP+MIL-P vs BUP+MIL-50	BUP+MIL-P vs BUP+MIL-50 after first bump	BUP+MIL-P vs BUP+MIL-50 after second bump	BUP+MIL-P vs BUP+MIL-50 after third bump
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.kPa				
number (not applicable)	9	-175	-339	542

End point values	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at first infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 2nd infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 3rd infusion
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.kPa				
number (not applicable)	160	559	-787	707

## Statistical analyses

No statistical analyses for this end point

### Secondary: Estimate of difference of cold pressor pain AUC- DAY 1

End point title	Estimate of difference of cold pressor pain AUC- DAY 1
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End point description:

End point type	Secondary
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End point timeframe:

Measured on day 1, over approximately 5 hours following study drug/placebo administration

End point values	BUP+MIL-P vs BUP+MIL-25 after first bump	BUP+MIL-P vs BUP+MIL-25 after second bump	BUP+MIL-P vs BUP+MIL-25 after third bump	BUP+MIL-P vs BUP+MIL-25
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.s				
number (not applicable)	113	290	-513	-36

End point values	BUP+MIL-P vs BUP+MIL-50	BUP+MIL-P vs BUP+MIL-50 after first bump	BUP+MIL-P vs BUP+MIL-50 after second bump	BUP+MIL-P vs BUP+MIL-50 after third bump
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.s				
number (not applicable)	60	173	464	-455

End point values	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at first infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 2nd infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 3rd infusion
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.s				
number (not applicable)	335	479	697	-170

## Statistical analyses

No statistical analyses for this end point

### Secondary: Estimate of difference of cold pressor pain AUC- DAY 8

End point title	Estimate of difference of cold pressor pain AUC- DAY 8
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End point description:

End point type	Secondary
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End point timeframe:

Measured on day 8, over approximately 5 hours following study drug/placebo administration

End point values	BUP+MIL-P vs BUP+MIL-25 after first bump	BUP+MIL-P vs BUP+MIL-25 after second bump	BUP+MIL-P vs BUP+MIL-25 after third bump	BUP+MIL-P vs BUP+MIL-25
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.s				
number (not applicable)	554	705	415	558

End point values	BUP+MIL-P vs BUP+MIL-50	BUP+MIL-P vs BUP+MIL-50 after first bump	BUP+MIL-P vs BUP+MIL-50 after second bump	BUP+MIL-P vs BUP+MIL-50 after third bump
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.s				
number (not applicable)	641	704	751	468

End point values	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at first infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 2nd infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 3rd infusion
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.s				
number (not applicable)	601	547	691	566

## Statistical analyses

No statistical analyses for this end point

### Secondary: Estimate of difference of delta electrical single pain AUC- DAY 1

End point title	Estimate of difference of delta electrical single pain AUC- DAY 1
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End point description:

End point type	Secondary
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End point timeframe:

Measured on day 1, over approximately 5 hours following study drug/placebo administration

End point values	BUP+MIL-P vs BUP+MIL-25 after first bump	BUP+MIL-P vs BUP+MIL-25 after second bump	BUP+MIL-P vs BUP+MIL-25 after third bump	BUP+MIL-P vs BUP+MIL-25
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.mA				
number (not applicable)	49.51	29.91	82.15	53.86

End point values	BUP+MIL-P vs BUP+MIL-50	BUP+MIL-P vs BUP+MIL-50 after first bump	BUP+MIL-P vs BUP+MIL-50 after second bump	BUP+MIL-P vs BUP+MIL-50 after third bump
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.mA				
number (not applicable)	53.86	197.35	55.89	-91.64

End point values	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at first infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 2nd infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 3rd infusion
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.mA				
number (not applicable)	-101.5	259.20	-290.4	-273.2

## Statistical analyses

No statistical analyses for this end point

### Secondary: Estimate of difference of delta electrical single pain AUC- DAY 8

End point title	Estimate of difference of delta electrical single pain AUC- DAY 8
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End point description:

End point type	Secondary
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End point timeframe:

Measured on day 8, over approximately 5 hours following study drug/placebo administration

End point values	BUP+MIL-P vs BUP+MIL-25 after first bump	BUP+MIL-P vs BUP+MIL-25 after second bump	BUP+MIL-P vs BUP+MIL-25 after third bump	BUP+MIL-P vs BUP+MIL-25
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.mA				
number (not applicable)	23.34	245.53	71.73	113.54

End point values	BUP+MIL-P vs BUP+MIL-50	BUP+MIL-P vs BUP+MIL-50 after first bump	BUP+MIL-P vs BUP+MIL-50 after second bump	BUP+MIL-P vs BUP+MIL-50 after third bump
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.mA				
number (not applicable)	60.88	-43.52	64.15	162.00

End point values	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at first infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 2nd infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 3rd infusion
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm.mA				
number (not applicable)	104.58	-3.20	139.72	177.21

## Statistical analyses

No statistical analyses for this end point

### Secondary: Estimate of difference- Left Pupil/Iris Ratio- Day 1

End point title	Estimate of difference- Left Pupil/Iris Ratio- Day 1
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End point description:

End point type	Secondary
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End point timeframe:

Measured on day 1, over approximately 5 hours following study drug/placebo administration

End point values	BUP+MIL-P vs BUP+MIL-25 after first bump	BUP+MIL-P vs BUP+MIL-25 after second bump	BUP+MIL-P vs BUP+MIL-25 after third bump	BUP+MIL-P vs BUP+MIL-25
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: units				
number (not applicable)	0.020	0.028	-0.013	-0.007

End point values	BUP+MIL-P vs BUP+MIL-50	BUP+MIL-P vs BUP+MIL-50 after first bump	BUP+MIL-P vs BUP+MIL-50 after second bump	BUP+MIL-P vs BUP+MIL-50 after third bump
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: units				
number (not applicable)	0.018	0.019	0.002	0.033

End point values	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at first infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 2nd infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 3rd infusion
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11		11
Units: units				
number (not applicable)	0.028	0.022	0.024	0.039

## Statistical analyses

No statistical analyses for this end point

### Secondary: Estimate of difference- Left Pupil/Iris Ratio- Day 8

End point title	Estimate of difference- Left Pupil/Iris Ratio- Day 8
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End point description:

End point type	Secondary
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End point timeframe:

Measured on day 8, over approximately 5 hours following study drug/placebo administration

End point values	BUP+MIL-P vs BUP+MIL-25 after first bump	BUP+MIL-P vs BUP+MIL-25 after second bump	BUP+MIL-P vs BUP+MIL-25 after third bump	BUP+MIL-P vs BUP+MIL-25
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: units				
number (not applicable)	-0.115	0.065	-0.029	-0.070

End point values	BUP+MIL-P vs BUP+MIL-50	BUP+MIL-P vs BUP+MIL-50 after first bump	BUP+MIL-P vs BUP+MIL-50 after second bump	BUP+MIL-P vs BUP+MIL-50 after third bump
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: units				
number (not applicable)	-0.048	-0.077	-0.047	-0.018

End point values	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at first infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 2nd infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 3rd infusion
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: units				
number (not applicable)	0.028	0.004	0.030	0.050

## Statistical analyses

No statistical analyses for this end point

### Secondary: Estimate of difference- Right Pupil/Iris Ratio- Day 1

End point title	Estimate of difference- Right Pupil/Iris Ratio- Day 1
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End point description:

End point type	Secondary
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End point timeframe:

Measured on day 1, over approximately 5 hours following study drug/placebo administration

End point values	BUP+MIL-P vs BUP+MIL-25 after first bump	BUP+MIL-P vs BUP+MIL-25 after second bump	BUP+MIL-P vs BUP+MIL-25 after third bump	BUP+MIL-P vs BUP+MIL-25
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: units				
number (not applicable)	0.016	0.017	-0.016	-0.005

End point values	BUP+MIL-P vs BUP+MIL-50	BUP+MIL-P vs BUP+MIL-50 after first bump	BUP+MIL-P vs BUP+MIL-50 after second bump	BUP+MIL-P vs BUP+MIL-50 after third bump
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: units				
number (not applicable)	0.015	0.016	0.007	0.024

End point values	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at first infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 2nd infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 3rd infusion
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: units				
number (not applicable)	0.021	0.015	0.020	0.026

## Statistical analyses

No statistical analyses for this end point

### Secondary: Estimate of difference- Right Pupil/Iris Ratio- Day 8

End point title	Estimate of difference- Right Pupil/Iris Ratio- Day 8
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End point description:

End point type	Secondary
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End point timeframe:

Measured on day 1, over approximately 5 hours following study drug/placebo administration

End point values	BUP+MIL-P vs BUP+MIL-25 after first bump	BUP+MIL-P vs BUP+MIL-25 after second bump	BUP+MIL-P vs BUP+MIL-25 after third bump	BUP+MIL-P vs BUP+MIL-25
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: units				
number (not applicable)	-0.128	-0.054	-0.032	-0.072

End point values	BUP+MIL-P vs BUP+MIL-50	BUP+MIL-P vs BUP+MIL-50 after first bump	BUP+MIL-P vs BUP+MIL-50 after second bump	BUP+MIL-P vs BUP+MIL-50 after third bump
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: units				
number (not applicable)	-0.052	-0.097	-0.043	-0.015

End point values	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at first infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 2nd infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 3rd infusion
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: units				
number (not applicable)	0.016	-0.028	0.030	0.047

## Statistical analyses

No statistical analyses for this end point

### Secondary: Estimate of difference- Saccadic Inaccuracy - Day 1

End point title Estimate of difference- Saccadic Inaccuracy - Day 1

End point description:

End point type Secondary

End point timeframe:

Measured on day 1, over approximately 5 hours following study drug/placebo administration

End point values	BUP+MIL-P vs BUP+MIL-25 after first bump	BUP+MIL-P vs BUP+MIL-25 after second bump	BUP+MIL-P vs BUP+MIL-25 after third bump	BUP+MIL-P vs BUP+MIL-25
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: percent				
number (not applicable)	0.1	-0.5	-0.2	-0.2

End point values	BUP+MIL-P vs BUP+MIL-50	BUP+MIL-P vs BUP+MIL-50 after first bump	BUP+MIL-P vs BUP+MIL-50 after second bump	BUP+MIL-P vs BUP+MIL-50 after third bump
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: percent				
number (not applicable)	1.2	1.4	2.1	0

End point values	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at first infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 2nd infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 3rd infusion
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: percent				
number (not applicable)	2.1	2.3	3.0	1.1

## Statistical analyses

No statistical analyses for this end point

### Secondary: Estimate of difference- Saccadic Inaccuracy - Day 8

End point title Estimate of difference- Saccadic Inaccuracy - Day 8

End point description:

End point type Secondary

End point timeframe:

Measured on day 8, over approximately 5 hours following study drug/placebo administration

End point values	BUP+MIL-P vs BUP+MIL-25 after first bump	BUP+MIL-P vs BUP+MIL-25 after second bump	BUP+MIL-P vs BUP+MIL-25 after third bump	BUP+MIL-P vs BUP+MIL-25
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: percent				
number (not applicable)	0.5	0.2	1.6	0.8

End point values	BUP+MIL-P vs BUP+MIL-50	BUP+MIL-P vs BUP+MIL-50 after first bump	BUP+MIL-P vs BUP+MIL-50 after second bump	BUP+MIL-P vs BUP+MIL-50 after third bump
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: percent				
number (not applicable)	0.4	0.3	-0.2	1.2

End point values	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at first infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 2nd infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 3rd infusion
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: percent				
number (not applicable)	0.5	0.3	0.2	1.1

## Statistical analyses

No statistical analyses for this end point

### Secondary: Estimate of difference- Saccadic peak velocity- Day 1

End point title Estimate of difference- Saccadic peak velocity- Day 1

End point description:

End point type Secondary

End point timeframe:

Measured on day 1, over approximately 5 hours following study drug/placebo administration

End point values	BUP+MIL-P vs BUP+MIL-25 after first bump	BUP+MIL-P vs BUP+MIL-25 after second bump	BUP+MIL-P vs BUP+MIL-25 after third bump	BUP+MIL-P vs BUP+MIL-25
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: degree/second				
number (not applicable)	-22.0	-13.6	-45.4	-27.0

End point values	BUP+MIL-P vs BUP+MIL-50	BUP+MIL-P vs BUP+MIL-50 after first bump	BUP+MIL-P vs BUP+MIL-50 after second bump	BUP+MIL-P vs BUP+MIL-50 after third bump
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: degree/second				
number (not applicable)	-39.0	-8.7	-55.6	-52.8

End point values	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at first infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 2nd infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 3rd infusion
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: degree/second				
number (not applicable)	-56.5	-16.3	-68.1	-85.0

## Statistical analyses

No statistical analyses for this end point

### Secondary: Estimate of difference- Saccadic peak velocity- Day 8

End point title Estimate of difference- Saccadic peak velocity- Day 8

End point description:

End point type Secondary

End point timeframe:

Measured on day 8, over approximately 5 hours following study drug/placebo administration

End point values	BUP+MIL-P vs BUP+MIL-25 after first bump	BUP+MIL-P vs BUP+MIL-25 after second bump	BUP+MIL-P vs BUP+MIL-25 after third bump	BUP+MIL-P vs BUP+MIL-25
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: degree/second				
number (not applicable)	-27.8	24.1	-9.0	-4.2

End point values	BUP+MIL-P vs BUP+MIL-50	BUP+MIL-P vs BUP+MIL-50 after first bump	BUP+MIL-P vs BUP+MIL-50 after second bump	BUP+MIL-P vs BUP+MIL-50 after third bump
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: degree/second				
number (not applicable)	9.5	-18.3	32.7	14.2

End point values	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at first infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 2nd infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 3rd infusion
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: degree/second				
number (not applicable)	13.9	-19.6	31.9	29.5

## Statistical analyses

No statistical analyses for this end point

### Secondary: Estimate of difference- Saccadic reaction time- Day 1

End point title Estimate of difference- Saccadic reaction time- Day 1

End point description:

End point type Secondary

End point timeframe:

Measured on day 1, over approximately 5 hours following study drug/placebo administration

End point values	BUP+MIL-P vs BUP+MIL-25 after first bump	BUP+MIL-P vs BUP+MIL-25 after second bump	BUP+MIL-P vs BUP+MIL-25 after third bump	BUP+MIL-P vs BUP+MIL-25
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: second				
number (not applicable)	-0.003	0.002	0.024	0.008

End point values	BUP+MIL-P vs BUP+MIL-50	BUP+MIL-P vs BUP+MIL-50 after first bump	BUP+MIL-P vs BUP+MIL-50 after second bump	BUP+MIL-P vs BUP+MIL-50 after third bump
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: second				
number (not applicable)	0.007	0.004	-0.002	0.020

End point values	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at first infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 2nd infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 3rd infusion
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: second				
number (not applicable)	0.013	0.005	0.006	0.028

## Statistical analyses

No statistical analyses for this end point

### Secondary: Estimate of difference- Saccadic reaction time- Day 8

End point title	Estimate of difference- Saccadic reaction time- Day 8
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End point description:

End point type	Secondary
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End point timeframe:

Measured on day 8, over approximately 5 hours following study drug/placebo administration

End point values	BUP+MIL-P vs BUP+MIL-25 after first bump	BUP+MIL-P vs BUP+MIL-25 after second bump	BUP+MIL-P vs BUP+MIL-25 after third bump	BUP+MIL-P vs BUP+MIL-25
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: second				
number (not applicable)	0.003	-0.012	-0.004	-0.004

End point values	BUP+MIL-P vs BUP+MIL-50	BUP+MIL-P vs BUP+MIL-50 after first bump	BUP+MIL-P vs BUP+MIL-50 after second bump	BUP+MIL-P vs BUP+MIL-50 after third bump
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: second				
number (not applicable)	0.004	0.003	-0.013	0.021

End point values	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at first infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 2nd infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 3rd infusion
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: second				
number (not applicable)	0.012	0.012	-0.006	0.029

## Statistical analyses

No statistical analyses for this end point

### Secondary: Estimate of difference- Adaptive tracking- Day 1

End point title	Estimate of difference- Adaptive tracking- Day 1
End point description:	
End point type	Secondary
End point timeframe:	
Measured on Day 1 approximately for over 5 hours following the administration of drug/placebo	

End point values	BUP+MIL-P vs BUP+MIL-25 after first bump	BUP+MIL-P vs BUP+MIL-25 after second bump	BUP+MIL-P vs BUP+MIL-25 after third bump	BUP+MIL-P vs BUP+MIL-25
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: percent				
number (not applicable)	0.51	-0.15	-3.60	-1.08

End point values	BUP+MIL-P vs BUP+MIL-50	BUP+MIL-P vs BUP+MIL-50 after first bump	BUP+MIL-P vs BUP+MIL-50 after second bump	BUP+MIL-P vs BUP+MIL-50 after third bump
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: percent				
number (not applicable)	-0.32	2.80	-2.90	-0.88

End point values	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at first infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 2nd infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 3rd infusion
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: percent				
number (not applicable)	-0.72	2.15	-2.99	-1.33

## Statistical analyses

No statistical analyses for this end point

### Secondary: Estimate of difference- Adaptive tracking- Day 8

End point title	Estimate of difference- Adaptive tracking- Day 8
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End point description:

End point type	Secondary
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End point timeframe:

Measured on Day 8 approximately for over 5 hours following the administration of drug/placebo

End point values	BUP+MIL-P vs BUP+MIL-25 after first bump	BUP+MIL-P vs BUP+MIL-25 after second bump	BUP+MIL-P vs BUP+MIL-25 after third bump	BUP+MIL-P vs BUP+MIL-25
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: percent				
number (not applicable)	-0.50	-0.07	1.48	-0.68

End point values	BUP+MIL-P vs BUP+MIL-50	BUP+MIL-P vs BUP+MIL-50 after first bump	BUP+MIL-P vs BUP+MIL-50 after second bump	BUP+MIL-P vs BUP+MIL-50 after third bump
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: percent				
number (not applicable)	-1.56	0.47	-1.92	-3.22

End point values	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at first infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 2nd infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 3rd infusion
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: percent				
number (not applicable)	-1.56	1.24	-3.43	-2.49

## Statistical analyses

No statistical analyses for this end point

### Secondary: Percent Estimate of difference- log transformed body sway- Day 1

End point title	Percent Estimate of difference- log transformed body sway- Day 1
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End point description:

End point type	Secondary
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End point timeframe:

Measured on Day 1 approximately for over 5 hours following the administration of drug/placebo

End point values	BUP+MIL-P vs BUP+MIL-25 after first bump	BUP+MIL-P vs BUP+MIL-25 after second bump	BUP+MIL-P vs BUP+MIL-25 after third bump	BUP+MIL-P vs BUP+MIL-25
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm				
number (not applicable)	12.6	7.8	22.6	14.2

End point values	BUP+MIL-P vs BUP+MIL-50	BUP+MIL-P vs BUP+MIL-50 after first bump	BUP+MIL-P vs BUP+MIL-50 after second bump	BUP+MIL-P vs BUP+MIL-50 after third bump
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm				
number (not applicable)	10.8	-9.5	34.3	11.9

End point values	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at first infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 2nd infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 3rd infusion
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm				
number (not applicable)	25.2	8.2	54.6	17.3

## Statistical analyses

No statistical analyses for this end point

### Secondary: Percent Estimate of difference- log transformed body sway- Day 8

End point title	Percent Estimate of difference- log transformed body sway- Day 8
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End point description:

End point type	Secondary
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End point timeframe:

Measured on Day 8 approximately for over 5 hours following the administration of drug/placebo

End point values	BUP+MIL-P vs BUP+MIL-25 after first bump	BUP+MIL-P vs BUP+MIL-25 after second bump	BUP+MIL-P vs BUP+MIL-25 after third bump	BUP+MIL-P vs BUP+MIL-25
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm				
number (not applicable)	6.3	17.2	15.4	12.9

End point values	BUP+MIL-P vs BUP+MIL-50	BUP+MIL-P vs BUP+MIL-50 after first bump	BUP+MIL-P vs BUP+MIL-50 after second bump	BUP+MIL-P vs BUP+MIL-50 after third bump
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm				
number (not applicable)	-2.4	-11.8	5.7	-0.3

End point values	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at first infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 2nd infusion	(BUP+MIL-P)+(BUP-P+MIL-50)-PRE vs BUP+MIL-50 at 3rd infusion
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	11	11	11	11
Units: mm				
number (not applicable)	-4.1	-17.1	3.5	2.9

## **Statistical analyses**

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No statistical analyses for this end point

## Adverse events

### Adverse events information

Timeframe for reporting adverse events:

Timeframe for adverse event reporting was throughout the study

Assessment type	Systematic
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### Dictionary used

Dictionary name	MedDRA
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Dictionary version	15.1
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### Reporting groups

Reporting group title	Buprenorphine placebo+ Milnacipran 50 mg
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Reporting group description:

Milnacipran was administered twice daily. 3 different doses of Buprenorphine were used as follows:

- A. First 30 minute infusion: 0.5 µg/kg (sub-therapeutic dose).
- B. Second 30 minute infusion: 1 µg/kg (minimum therapeutic dose).
- C. Third 30 minute infusion: 3 µg/kg (clinically relevant therapeutic dose).

Reporting group title	Buprenorphine active+ Milnacipran 25 mg
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Reporting group description:

Buprenorphine was administered on Day 1 and Day 8 and in three different doses: first a 30 minutes 0.5 µg/kg sub-therapeutic infusion followed 1.5 hours later by a second 30 minutes 1 µg/kg minimally-therapeutic infusion followed 1.5 hours later by the last 30 minutes 3 µg/kg therapeutic infusion. Milnacipran was administered twice daily (bid)

Reporting group title	Buprenorphine active+ Milnacipran 50 mg
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Reporting group description:

Milnacipran was administered twice daily. 3 different doses of Buprenorphine were used as follows:

- A. First 30 minute infusion: 0.5 µg/kg (sub-therapeutic dose).
- B. Second 30 minute infusion: 1 µg/kg (minimum therapeutic dose).
- C. Third 30 minute infusion: 3 µg/kg (clinically relevant therapeutic dose).

Reporting group title	Buprenorphine active+ Milnacipran placebo
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Reporting group description:

Milnacipran was administered twice daily. 3 different doses of Buprenorphine were used as follows:

- A. First 30 minute infusion: 0.5 µg/kg (sub-therapeutic dose).
- B. Second 30 minute infusion: 1 µg/kg (minimum therapeutic dose).
- C. Third 30 minute infusion: 3 µg/kg (clinically relevant therapeutic dose).

<b>Serious adverse events</b>	Buprenorphine placebo+ Milnacipran 50 mg	Buprenorphine active+ Milnacipran 25 mg	Buprenorphine active+ Milnacipran 50 mg
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 11 (0.00%)	0 / 9 (0.00%)	0 / 10 (0.00%)
number of deaths (all causes)	0	0	0
number of deaths resulting from adverse events			

<b>Serious adverse events</b>	Buprenorphine active+ Milnacipran placebo		
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 10 (0.00%)		
number of deaths (all causes)	0		

number of deaths resulting from adverse events			
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Frequency threshold for reporting non-serious adverse events: 5 %

<b>Non-serious adverse events</b>	Buprenorphine placebo+ Milnacipran 50 mg	Buprenorphine active+ Milnacipran 25 mg	Buprenorphine active+ Milnacipran 50 mg
Total subjects affected by non-serious adverse events subjects affected / exposed	11 / 11 (100.00%)	9 / 9 (100.00%)	10 / 10 (100.00%)
General disorders and administration site conditions			
Asthenia			
subjects affected / exposed	1 / 11 (9.09%)	1 / 9 (11.11%)	2 / 10 (20.00%)
occurrences (all)	1	1	2
Chest discomfort			
subjects affected / exposed	1 / 11 (9.09%)	0 / 9 (0.00%)	0 / 10 (0.00%)
occurrences (all)	1	0	0
Fatigue			
subjects affected / exposed	3 / 11 (27.27%)	6 / 9 (66.67%)	7 / 10 (70.00%)
occurrences (all)	3	6	7
Feeling cold			
subjects affected / exposed	0 / 11 (0.00%)	0 / 9 (0.00%)	0 / 10 (0.00%)
occurrences (all)	0	0	0
Feeling drunk			
subjects affected / exposed	0 / 11 (0.00%)	1 / 9 (11.11%)	1 / 10 (10.00%)
occurrences (all)	0	1	1
Feeling hot			
subjects affected / exposed	3 / 11 (27.27%)	2 / 9 (22.22%)	1 / 10 (10.00%)
occurrences (all)	3	2	1
Feeling of relaxation			
subjects affected / exposed	0 / 11 (0.00%)	1 / 9 (11.11%)	0 / 10 (0.00%)
occurrences (all)	0	1	0
Hot flush			
subjects affected / exposed	2 / 11 (18.18%)	3 / 9 (33.33%)	2 / 10 (20.00%)
occurrences (all)	2	3	2
Hyperhidrosis			

subjects affected / exposed occurrences (all)	2 / 11 (18.18%) 2	1 / 9 (11.11%) 1	2 / 10 (20.00%) 2
Malaise subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	0 / 9 (0.00%) 0	1 / 10 (10.00%) 1
Thirst subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	1 / 9 (11.11%) 1	1 / 10 (10.00%) 1
Reproductive system and breast disorders			
Ejaculation delayed subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	0 / 9 (0.00%) 0	1 / 10 (10.00%) 1
Testicular pain subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	0 / 9 (0.00%) 0	1 / 10 (10.00%) 1
Respiratory, thoracic and mediastinal disorders			
Dry throat subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	0 / 9 (0.00%) 0	0 / 10 (0.00%) 0
Dyspnoea subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	0 / 9 (0.00%) 0	1 / 10 (10.00%) 1
Nasopharyngitis subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	0 / 9 (0.00%) 0	0 / 10 (0.00%) 0
Oropharyngeal discomfort subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	1 / 9 (11.11%) 1	0 / 10 (0.00%) 0
Throat irritation subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	0 / 9 (0.00%) 0	1 / 10 (10.00%) 1
Psychiatric disorders			
Bradyphrenia subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	0 / 9 (0.00%) 0	1 / 10 (10.00%) 1
Daydreaming			

subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	0 / 9 (0.00%) 0	1 / 10 (10.00%) 1
Delusional perception subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	0 / 9 (0.00%) 0	1 / 10 (10.00%) 1
Disinhibition subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	0 / 9 (0.00%) 0	0 / 10 (0.00%) 0
Disturbance in attention subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	1 / 9 (11.11%) 1	0 / 10 (0.00%) 0
Inappropriate affect subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	0 / 9 (0.00%) 0	1 / 10 (10.00%) 1
Initial insomnia subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	0 / 9 (0.00%) 0	1 / 10 (10.00%) 1
Investigations Heart rate increased subjects affected / exposed occurrences (all)	1 / 11 (9.09%) 1	1 / 9 (11.11%) 1	0 / 10 (0.00%) 0
Cardiac disorders Palpitations subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	1 / 9 (11.11%) 1	1 / 10 (10.00%) 1
Nervous system disorders Bradyphrenia subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	0 / 9 (0.00%) 0	0 / 10 (0.00%) 0
Disturbance in attention subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	0 / 9 (0.00%) 0	1 / 10 (10.00%) 1
Dizziness subjects affected / exposed occurrences (all)	2 / 11 (18.18%) 2	6 / 9 (66.67%) 6	7 / 10 (70.00%) 7
Dizziness postural			

subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	1 / 9 (11.11%) 1	0 / 10 (0.00%) 0
Dysgeusia subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	1 / 9 (11.11%) 1	1 / 10 (10.00%) 1
Dyskinesia subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	1 / 9 (11.11%) 1	0 / 10 (0.00%) 0
Headache subjects affected / exposed occurrences (all)	4 / 11 (36.36%) 4	4 / 9 (44.44%) 4	6 / 10 (60.00%) 6
Paraesthesia subjects affected / exposed occurrences (all)	1 / 11 (9.09%) 1	1 / 9 (11.11%) 1	0 / 10 (0.00%) 0
Photophobia subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	0 / 9 (0.00%) 0	1 / 10 (10.00%) 1
Restlessness subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	0 / 9 (0.00%) 0	1 / 10 (10.00%) 1
Somnolence subjects affected / exposed occurrences (all)	7 / 11 (63.64%) 7	8 / 9 (88.89%) 8	8 / 10 (80.00%) 8
Speech disorder subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	1 / 9 (11.11%) 1	0 / 10 (0.00%) 0
Vision blurred subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	0 / 9 (0.00%) 0	0 / 10 (0.00%) 0
Eye disorders Accommodation disorder subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	0 / 9 (0.00%) 0	1 / 10 (10.00%) 1
Gastrointestinal disorders Abdominal discomfort			

subjects affected / exposed	1 / 11 (9.09%)	1 / 9 (11.11%)	2 / 10 (20.00%)
occurrences (all)	1	1	2
Abdominal pain			
subjects affected / exposed	0 / 11 (0.00%)	0 / 9 (0.00%)	1 / 10 (10.00%)
occurrences (all)	0	0	1
Constipation			
subjects affected / exposed	0 / 11 (0.00%)	0 / 9 (0.00%)	0 / 10 (0.00%)
occurrences (all)	0	0	0
Diarrhoea			
subjects affected / exposed	1 / 11 (9.09%)	0 / 9 (0.00%)	0 / 10 (0.00%)
occurrences (all)	1	0	0
Dry mouth			
subjects affected / exposed	1 / 11 (9.09%)	2 / 9 (22.22%)	2 / 10 (20.00%)
occurrences (all)	1	2	2
Dry throat			
subjects affected / exposed	0 / 11 (0.00%)	1 / 9 (11.11%)	0 / 10 (0.00%)
occurrences (all)	0	1	0
Dyspepsia			
subjects affected / exposed	0 / 11 (0.00%)	0 / 9 (0.00%)	0 / 10 (0.00%)
occurrences (all)	0	0	0
Dysphagia			
subjects affected / exposed	0 / 11 (0.00%)	1 / 9 (11.11%)	1 / 10 (10.00%)
occurrences (all)	0	1	1
Epigastric discomfort			
subjects affected / exposed	0 / 11 (0.00%)	1 / 9 (11.11%)	1 / 10 (10.00%)
occurrences (all)	0	1	1
Flatulence			
subjects affected / exposed	0 / 11 (0.00%)	1 / 9 (11.11%)	0 / 10 (0.00%)
occurrences (all)	0	1	0
Hiccups			
subjects affected / exposed	0 / 11 (0.00%)	0 / 9 (0.00%)	0 / 10 (0.00%)
occurrences (all)	0	0	0
Nausea			
subjects affected / exposed	8 / 11 (72.73%)	8 / 9 (88.89%)	7 / 10 (70.00%)
occurrences (all)	8	8	7
Salivary hypersecretion			

subjects affected / exposed occurrences (all)	1 / 11 (9.09%) 1	0 / 9 (0.00%) 0	0 / 10 (0.00%) 0
Vomiting subjects affected / exposed occurrences (all)	3 / 11 (27.27%) 3	6 / 9 (66.67%) 6	10 / 10 (100.00%) 10
<b>Skin and subcutaneous tissue disorders</b>			
Piloerection subjects affected / exposed occurrences (all)	1 / 11 (9.09%) 1	0 / 9 (0.00%) 0	0 / 10 (0.00%) 0
Pruritus subjects affected / exposed occurrences (all)	1 / 11 (9.09%) 1	2 / 9 (22.22%) 2	2 / 10 (20.00%) 2
Pruritus generalized subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	1 / 9 (11.11%) 1	0 / 10 (0.00%) 0
Rash subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	0 / 9 (0.00%) 0	1 / 10 (10.00%) 1
<b>Renal and urinary disorders</b>			
Bladder spasm subjects affected / exposed occurrences (all)	1 / 11 (9.09%) 1	0 / 9 (0.00%) 0	0 / 10 (0.00%) 0
Dysuria subjects affected / exposed occurrences (all)	1 / 11 (9.09%) 1	0 / 9 (0.00%) 0	0 / 10 (0.00%) 0
Urinary hesitation subjects affected / exposed occurrences (all)	0 / 11 (0.00%) 0	2 / 9 (22.22%) 2	1 / 10 (10.00%) 1
<b>Musculoskeletal and connective tissue disorders</b>			
Myalgia subjects affected / exposed occurrences (all)	1 / 11 (9.09%) 1	0 / 9 (0.00%) 0	0 / 10 (0.00%) 0
<b>Metabolism and nutrition disorders</b>			
Decreased appetite subjects affected / exposed occurrences (all)	1 / 11 (9.09%) 1	1 / 9 (11.11%) 1	0 / 10 (0.00%) 0

<b>Non-serious adverse events</b>	Buprenorphine active+ Milnacipran placebo		
Total subjects affected by non-serious adverse events			
subjects affected / exposed	10 / 10 (100.00%)		
General disorders and administration site conditions			
Asthenia			
subjects affected / exposed	1 / 10 (10.00%)		
occurrences (all)	1		
Chest discomfort			
subjects affected / exposed	0 / 10 (0.00%)		
occurrences (all)	0		
Fatigue			
subjects affected / exposed	3 / 10 (30.00%)		
occurrences (all)	3		
Feeling cold			
subjects affected / exposed	1 / 10 (10.00%)		
occurrences (all)	1		
Feeling drunk			
subjects affected / exposed	1 / 10 (10.00%)		
occurrences (all)	1		
Feeling hot			
subjects affected / exposed	3 / 10 (30.00%)		
occurrences (all)	3		
Feeling of relaxation			
subjects affected / exposed	0 / 10 (0.00%)		
occurrences (all)	0		
Hot flush			
subjects affected / exposed	2 / 10 (20.00%)		
occurrences (all)	2		
Hyperhidrosis			
subjects affected / exposed	0 / 10 (0.00%)		
occurrences (all)	0		
Malaise			
subjects affected / exposed	1 / 10 (10.00%)		
occurrences (all)	1		
Thirst			

subjects affected / exposed occurrences (all)	1 / 10 (10.00%) 1		
Reproductive system and breast disorders			
Ejaculation delayed subjects affected / exposed occurrences (all)	1 / 10 (10.00%) 1		
Testicular pain subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Respiratory, thoracic and mediastinal disorders			
Dry throat subjects affected / exposed occurrences (all)	2 / 10 (20.00%) 2		
Dyspnoea subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Nasopharyngitis subjects affected / exposed occurrences (all)	1 / 10 (10.00%) 1		
Oropharyngeal discomfort subjects affected / exposed occurrences (all)	1 / 10 (10.00%) 1		
Throat irritation subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Psychiatric disorders			
Bradyphrenia subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Daydreaming subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Delusional perception subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Disinhibition			

subjects affected / exposed occurrences (all)	1 / 10 (10.00%) 1		
Disturbance in attention subjects affected / exposed occurrences (all)	1 / 10 (10.00%) 1		
Inappropriate affect subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Initial insomnia subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Investigations Heart rate increased subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Cardiac disorders Palpitations subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 1		
Nervous system disorders Bradyphrenia subjects affected / exposed occurrences (all)	1 / 10 (10.00%) 1		
Disturbance in attention subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Dizziness subjects affected / exposed occurrences (all)	6 / 10 (60.00%) 6		
Dizziness postural subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Dysgeusia subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Dyskinesia			

subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Headache subjects affected / exposed occurrences (all)	3 / 10 (30.00%) 3		
Paraesthesia subjects affected / exposed occurrences (all)	1 / 10 (10.00%) 1		
Photophobia subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Restlessness subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Somnolence subjects affected / exposed occurrences (all)	8 / 10 (80.00%) 8		
Speech disorder subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Vision blurred subjects affected / exposed occurrences (all)	1 / 10 (10.00%) 1		
Eye disorders Accommodation disorder subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Gastrointestinal disorders Abdominal discomfort subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Abdominal pain subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Constipation			

subjects affected / exposed occurrences (all)	1 / 10 (10.00%) 1		
Diarrhoea subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Dry mouth subjects affected / exposed occurrences (all)	3 / 10 (30.00%) 3		
Dry throat subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Dyspepsia subjects affected / exposed occurrences (all)	1 / 10 (10.00%) 1		
Dysphagia subjects affected / exposed occurrences (all)	1 / 10 (10.00%) 1		
Epigastric discomfort subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Flatulence subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Hiccups subjects affected / exposed occurrences (all)	1 / 10 (10.00%) 1		
Nausea subjects affected / exposed occurrences (all)	9 / 10 (90.00%) 9		
Salivary hypersecretion subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Vomiting subjects affected / exposed occurrences (all)	7 / 10 (70.00%) 7		
Skin and subcutaneous tissue disorders			

Piloerection subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Pruritus subjects affected / exposed occurrences (all)	3 / 10 (30.00%) 3		
Pruritus generalized subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Rash subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Renal and urinary disorders Bladder spasm subjects affected / exposed occurrences (all)	1 / 10 (10.00%) 1		
Dysuria subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Urinary hesitation subjects affected / exposed occurrences (all)	1 / 10 (10.00%) 1		
Musculoskeletal and connective tissue disorders Myalgia subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0		
Metabolism and nutrition disorders Decreased appetite subjects affected / exposed occurrences (all)	1 / 10 (10.00%) 1		

## **More information**

### **Substantial protocol amendments (globally)**

Were there any global substantial amendments to the protocol? No

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### **Interruptions (globally)**

Were there any global interruptions to the trial? No

### **Limitations and caveats**

None reported