



Clinical trial results:

An Open-Label Phase 1/2 Study to Assess the Safety, Efficacy and Dose of UX003 rhGUS Enzyme Replacement Therapy in Patients With MPS 7 Summary

| | |
|--------------------------|----------------|
| EudraCT number | 2013-001152-35 |
| Trial protocol | GB ES |
| Global end of trial date | 13 July 2016 |

Results information

| | |
|--------------------------------|--|
| Result version number | v2 |
| This version publication date | 21 November 2018 |
| First version publication date | 30 August 2017 |
| Version creation reason | • Correction of full data set study start update |

Trial information

Trial identification

| | |
|-----------------------|-------------|
| Sponsor protocol code | UX003-CL201 |
|-----------------------|-------------|

Additional study identifiers

| | |
|------------------------------------|-------------|
| ISRCTN number | - |
| ClinicalTrials.gov id (NCT number) | NCT01856218 |
| WHO universal trial number (UTN) | - |

Notes:

Sponsors

| | |
|------------------------------|---|
| Sponsor organisation name | Ultragenyx Pharmaceutical Inc |
| Sponsor organisation address | 60 Leveroni Court, Novato, United States, 94949 |
| Public contact | Robert Hostutler, Sr. Clinical Program Manager, Clinical Operations, Ultragenyx Pharmaceutical Inc. , 1 4154838148, rhostutler@ultragenyx.com |
| Scientific contact | Christine Haller, MD, VP, Drug Safety and Pharmacovigilance, Ultragenyx Pharmaceutical Inc. , 1 4154838937, challer@ultragenyx.com |

Notes:

Paediatric regulatory details

| | |
|--|---------------------|
| Is trial part of an agreed paediatric investigation plan (PIP) | Yes |
| EMA paediatric investigation plan number(s) | EMA-001540-PIP01-13 |
| 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 | 13 July 2016 |
| Is this the analysis of the primary completion data? | No |
| Global end of trial reached? | Yes |
| Global end of trial date | 13 July 2016 |
| Was the trial ended prematurely? | No |

Notes:

General information about the trial

Main objective of the trial:

The primary objectives of the study are to evaluate safety and tolerability of UX003 exposure and efficacy in subjects with mucopolysaccharidosis 7 (MPS VII, Sly syndrome) as determined by the reduction of total urinary glycosaminoglycan (uGAG) excretion.

Protection of trial subjects:

The trial was designed, conducted, recorded, and reported in accordance with the principles established by the 18th World Medical Association General Assembly (Helsinki, 1964) and subsequent amendments and clarifications adopted by the General Assemblies. The investigators made every effort to ensure that the study was conducted in full conformance with Helsinki principles, International Council for Harmonization (ICH) Good Clinical Practice (GCP) guidelines, current Food and Drug Administration (FDA) regulations, EU Clinical Trial Directive 2001/20/EC, and local ethical and regulatory requirements. Each investigator was thoroughly familiar with the appropriate administration and potential risks of administration of the study drug, as described in the protocol and Investigator's Brochure, prior to the initiation of the study. The method of obtaining and documenting informed consent and the contents of the informed consent form (ICF) complied with ICH GCP guidelines, the requirements of 21 CFR Part 50, "Protection of Human Subjects," the Health Insurance Portability and Accountability Act regulations, and all other applicable regulatory requirements. Investigators were responsible for preparing the ICF and submitting it to the Sponsor for approval prior to submission to the Institutional Review Board (IRB). All ICFs were written in regional language and contained the minimum elements for consent as mandated by the ICH guidelines. An IRB-approved ICF was provided by the Sponsor prior to initiation of the study. Investigators obtained signed written informed consent from each potential study subject prior to the conduct of any study procedures and after the methods, objectives, requirements, and potential risks of the study were fully explained to each potential subject. Consent for participation could be withdrawn at any time for any reason by the subject.

Background therapy: -

Evidence for comparator: -

| | |
|---|---------------------------|
| Actual start date of recruitment | 18 November 2013 |
| Long term follow-up planned | Yes |
| Long term follow-up rationale | Safety, Regulatory reason |
| Long term follow-up duration | 36 Months |
| Independent data monitoring committee (IDMC) involvement? | Yes |

Notes:

Population of trial subjects

Subjects enrolled per country

| | |
|--------------------------------------|-------------------|
| Country: Number of subjects enrolled | United Kingdom: 3 |
| Worldwide total number of subjects | 3 |
| EEA total number of subjects | 3 |

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) | 2 |
| Adolescents (12-17 years) | 0 |
| Adults (18-64 years) | 1 |
| From 65 to 84 years | 0 |
| 85 years and over | 0 |

Subject disposition

Recruitment

Recruitment details:

In this study, the 3 subjects who were enrolled at Site 111 in the United Kingdom (UK), were also enrolled at local sites in their home countries (1 in Spain and 2 in Turkey) for infusions and blood/urine sample collection. All subjects continued to attend study visits at the UK site for designated major efficacy assessment visits with infusions.

Pre-assignment

Screening details:

Subjects were evaluated for trial participation based on the protocol-specified inclusion and exclusion criteria. All 3 of the subjects who were screened also enrolled in the study.

Period 1

| | |
|------------------------------|----------------|
| Period 1 title | First Phase |
| Is this the baseline period? | Yes |
| Allocation method | Not applicable |
| Blinding used | Not blinded |

Arms

| | |
|-----------|-------|
| Arm title | UX003 |
|-----------|-------|

Arm description:

During the initial 14-week treatment period of the study, subjects received 2 mg/kg UX003 every other week (QOW) for 12 weeks. At Week 14, subjects continued on UX003 therapy and began a forced dose titration period for an additional 24 weeks at the dose sequence of 1, 4, and 2 mg/kg UX003 QOW as follows:

- 1 mg/kg UX003 for 8 weeks beginning on Week 14, then
- 4 mg/kg UX003 for 8 weeks beginning on Week 22, then
- 2 mg/kg UX003 for 8 weeks beginning on Week 30.

Following the 24 week forced dose titration period, subjects who continued on treatment (continuation period) received 2 mg/kg UX003 QOW beginning at Week 38 for up to an additional 36 weeks.

| | |
|--|--------------------------------------|
| Arm type | Experimental |
| Investigational medicinal product name | Recombinant human beta-glucuronidase |
| Investigational medicinal product code | UX003 |
| Other name | RHGUS, vestronidase alfa |
| Pharmaceutical forms | Solution for infusion |
| Routes of administration | Intravenous use |

Dosage and administration details:

UX003 requires weight-based dosing QOW intravenously by slow infusions over a period of approximately 4 hours. The dosage is designated per study period within first phase.

| | |
|---------------------------------------|-------|
| Number of subjects in period 1 | UX003 |
| Started | 3 |
| Completed | 3 |

Period 2

| | |
|------------------------------|---------------------------|
| Period 2 title | Long-Term Extension Phase |
| Is this the baseline period? | No |
| Allocation method | Not applicable |
| Blinding used | Not blinded |

Arms

| | |
|------------------|-------|
| Arm title | UX003 |
|------------------|-------|

Arm description:

After the first phase of the study, subjects who elected to continue drug treatment were transitioned to the long-term extension phase, where they were treated with UX003 at 4 mg/kg beginning at Week 74, for up to an additional 168 weeks.

| | |
|--|--------------------------------------|
| Arm type | Experimental |
| Investigational medicinal product name | Recombinant human beta-glucuronidase |
| Investigational medicinal product code | UX003 |
| Other name | RHGUS, vestronidase alfa |
| Pharmaceutical forms | Solution for infusion |
| Routes of administration | Intravenous use |

Dosage and administration details:

UX003 requires weight-based dosing QOW intravenously by slow infusions over a period of approximately 4 hours. The dosage is designated per study period within first phase.

| | |
|---------------------------------------|-------|
| Number of subjects in period 2 | UX003 |
| Started | 3 |
| Completed > 118 weeks on treatment | 3 |
| Completed | 0 |
| Not completed | 3 |
| Transitioned to compassionate use | 3 |

Baseline characteristics

Reporting groups

| | |
|-----------------------|-------------|
| Reporting group title | First Phase |
|-----------------------|-------------|

Reporting group description: -

| Reporting group values | First Phase | Total | |
|------------------------|-------------|-------|--|
| Number of subjects | 3 | 3 | |
| Age categorical | | | |
| Units: Subjects | | | |
| Children (2-11 years) | 2 | 2 | |
| Adults (18-64 years) | 1 | 1 | |
| Gender categorical | | | |
| Units: Subjects | | | |
| Female | 1 | 1 | |
| Male | 2 | 2 | |

End points

End points reporting groups

| | |
|-----------------------|-------|
| Reporting group title | UX003 |
|-----------------------|-------|

Reporting group description:

During the initial 14-week treatment period of the study, subjects received 2 mg/kg UX003 every other week (QOW) for 12 weeks. At Week 14, subjects continued on UX003 therapy and began a forced dose titration period for an additional 24 weeks at the dose sequence of 1, 4, and 2 mg/kg UX003 QOW as follows:

- 1 mg/kg UX003 for 8 weeks beginning on Week 14, then
- 4 mg/kg UX003 for 8 weeks beginning on Week 22, then
- 2 mg/kg UX003 for 8 weeks beginning on Week 30.

Following the 24 week forced dose titration period, subjects who continued on treatment (continuation period) received 2 mg/kg UX003 QOW beginning at Week 38 for up to an additional 36 weeks.

| | |
|-----------------------|-------|
| Reporting group title | UX003 |
|-----------------------|-------|

Reporting group description:

After the first phase of the study, subjects who elected to continue drug treatment were transitioned to the long-term extension phase, where they were treated with UX003 at 4 mg/kg beginning at Week 74, for up to an additional 168 weeks.

| | |
|----------------------------|-------|
| Subject analysis set title | UX003 |
|----------------------------|-------|

| | |
|---------------------------|---------------|
| Subject analysis set type | Full analysis |
|---------------------------|---------------|

Subject analysis set description:

During the initial 14-week treatment period of the study, subjects received 2 mg/kg UX003 QOW for 12 weeks. At Week 14, subjects continued on UX003 therapy and began a forced dose titration period for an additional 24 weeks at the dose sequence of 1, 4, and 2 mg/kg UX003 QOW as follows:

- 1 mg/kg UX003 for 8 weeks beginning on Week 14, then
- 4 mg/kg UX003 for 8 weeks beginning on Week 22, then
- 2 mg/kg UX003 for 8 weeks beginning on Week 30.

Following the 24 week forced dose titration period, subjects who continued on treatment (continuation period) received 2 mg/kg UX003 QOW beginning at Week 38 for up to an additional 36 weeks.

After the continuation period, subjects who elected to continue drug treatment were transitioned to the long-term extension period of the study where they were treated with UX003 at 4 mg/kg beginning at Week 74, for up to an additional 168 weeks.

Primary: Percentage Change From Baseline in uGAG (Dermatan Sulfate)

| | |
|-----------------|---|
| End point title | Percentage Change From Baseline in uGAG (Dermatan |
|-----------------|---|

End point description:

Percentage change from baseline in the concentration of uGAGs normalized to the urinary creatinine concentration as measured by liquid chromatography-mass spectrometry/mass spectrometry-dermatan sulfate.

| | |
|----------------|---------|
| End point type | Primary |
|----------------|---------|

End point timeframe:

Week 14, Week 22, Week 30, Week 38, Week 72, and end of study (up to Week 132)

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: Mean (SD) statistics are presented, per protocol.

| End point values | UX003 | | | |
|--------------------------------------|----------------------|--|--|--|
| Subject group type | Subject analysis set | | | |
| Number of subjects analysed | 3 | | | |
| Units: percentage change | | | | |
| arithmetic mean (standard deviation) | | | | |
| Initial treatment-Week 14 | -50.41 (± 7.895) | | | |

| | | | | |
|----------------------------------|-----------------------|--|--|--|
| Forced dose titration-Week 22 | -38.94 (\pm 7.137) | | | |
| Forced dose titration-Week 30 | -63.49 (\pm 6.889) | | | |
| Forced dose titration-Week 38 | -51.82 (\pm 9.033) | | | |
| Continuation-Week 72 | -54.2 (\pm 8.442) | | | |
| Long term extension-end of study | -34.44 (\pm 48.56) | | | |

Statistical analyses

No statistical analyses for this end point

Primary: Percentage Change From Baseline in uGAG (Chondroitin Sulfate)

| | |
|-----------------|--|
| End point title | Percentage Change From Baseline in uGAG (Chondroitin Sulfate) ^[2] |
|-----------------|--|

End point description:

Percentage change from baseline in the concentration of uGAGs normalized to the urinary creatinine concentration as measured by liquid chromatography-mass spectrometry/mass spectrometry-chondroitin sulfate.

| | |
|----------------|---------|
| End point type | Primary |
|----------------|---------|

End point timeframe:

Week 14, Week 22, Week 30, Week 38, Week 72, and end of study (up to Week 132)

Notes:

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

Justification: Mean (SD) statistics are presented, per protocol.

| End point values | UX003 | | | |
|--------------------------------------|------------------------|--|--|--|
| Subject group type | Subject analysis set | | | |
| Number of subjects analysed | 3 | | | |
| Units: percentage change | | | | |
| arithmetic mean (standard deviation) | | | | |
| Initial treatment-Week 14 | -52.5 (\pm 13.726) | | | |
| Forced dose titration-Week 22 | -47.58 (\pm 3.958) | | | |
| Forced dose titration-Week 30 | -60.78 (\pm 7.207) | | | |
| Forced dose titration-Week 38 | -52.08 (\pm 13.298) | | | |
| Continuation-Week 72 | -56.96 (\pm 13.379) | | | |
| Long term extension-end of study | -30.83 (\pm 40.794) | | | |

Statistical analyses

No statistical analyses for this end point

Primary: Number of Subjects With Any \geq 50% Decrease in uGAG

| | |
|-----------------|--|
| End point title | Number of Subjects With Any \geq 50% Decrease in uGAG ^[3] |
|-----------------|--|

End point description:

Subjects with a \geq 50% decrease in the concentration of uGAGs normalized to the urinary creatinine concentration as measured by liquid chromatography-mass spectrometry/mass spectrometry-dermatan sulfate or chondroitin sulfate.

| | |
|----------------|---------|
| End point type | Primary |
|----------------|---------|

End point timeframe:

up to Week 132

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: Descriptive statistics are presented, per protocol.

| End point values | UX003 | | | |
|-----------------------------|----------------------|--|--|--|
| Subject group type | Subject analysis set | | | |
| Number of subjects analysed | 3 | | | |
| Units: subjects | 3 | | | |

Statistical analyses

No statistical analyses for this end point

Primary: Number of Subjects with Treatment Emergent Adverse Events (TEAEs), Serious Adverse Events (SAEs), Deaths, and Study/Treatment Discontinuations

| | |
|-----------------|---|
| End point title | Number of Subjects with Treatment Emergent Adverse Events (TEAEs), Serious Adverse Events (SAEs), Deaths, and Study/Treatment Discontinuations ^[4] |
|-----------------|---|

End point description:

Adverse Event (AE): any untoward medical occurrence in a subject, whether or not considered drug related. SAE: an AE or suspected adverse reaction that at any dose results in any of the following outcomes: death; a life-threatening AE; inpatient hospitalization or prolongation of existing hospitalization; persistent or significant incapacity or substantial disruption of the ability to conduct normal life functions; a congenital anomaly/birth defect. Other important medical events may also, in the opinion of the Investigator, be considered SAEs. An AE was considered a TEAE if it occurred on or after the first dose, and was not present prior to the first dose, or it was present at the first dose but increased in severity during the study. Events recorded as either possibly, probably, or definitely related to treatment were categorized as related. AE severity was graded using the National Cancer Institute's Common Terminology Criteria for Adverse Events, Version 4.03.

| | |
|----------------|---------|
| End point type | Primary |
|----------------|---------|

End point timeframe:

Up to 242 weeks + 30 days. SAEs were recorded beginning at the time the subject signed the informed consent form through 30 days following the last study visit. Non-serious AEs were recorded from the time of signing the ICF through the last study visit.

Notes:

[4] - 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: Descriptive statistics are presented, per protocol.

| End point values | UX003 | | | |
|---|----------------------|--|--|--|
| Subject group type | Subject analysis set | | | |
| Number of subjects analysed | 3 | | | |
| Units: subjects | | | | |
| Any TEAE | 3 | | | |
| Treatment-related TEAE | 2 | | | |
| SAE | 2 | | | |
| Grade 3 or 4 TEAE | 2 | | | |
| TEAE leading to treatment discontinuation | 1 | | | |
| TEAE leading to study discontinuation | 0 | | | |
| Fatal TEAE | 0 | | | |

Statistical analyses

No statistical analyses for this end point

Secondary: Dose Selection for the Long-term Extension Phase

| | |
|--|--|
| End point title | Dose Selection for the Long-term Extension Phase |
| End point description: | |
| The choice of the dose of UX003 QOW for the Long-Term Extension Phase was based on a preliminary efficacy analysis at Week 36 prior to all 3 subjects completing the Forced-dose Titration Period of the First Phase of the study. | |
| End point type | Secondary |
| End point timeframe: | |
| Week 36 | |

| End point values | UX003 | | | |
|-----------------------------|-----------------|--|--|--|
| Subject group type | Reporting group | | | |
| Number of subjects analysed | 3 | | | |
| Units: mg/kg | | | | |
| number (not applicable) | 4 | | | |

Statistical analyses

No statistical analyses for this end point

Adverse events

Adverse events information

Timeframe for reporting adverse events:

Up to 242 weeks + 30 days. SAEs were recorded beginning at the time the subject signed the informed consent form through 30 days following the last study visit. Non-serious AEs were recorded from the time of signing the ICF through the last study visit.

Adverse event reporting additional description:

TEAEs are presented. An AE was considered a TEAE if it occurred on or after the first dose, and was not present prior to the first dose, or it was present at the first dose but increased in severity during the study.

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

Dictionary used

| | |
|--------------------|--------|
| Dictionary name | MedDRA |
| Dictionary version | 17.1 |

Reporting groups

| | |
|-----------------------|-------|
| Reporting group title | UX003 |
|-----------------------|-------|

Reporting group description:

During the initial 14-week treatment period of the study, subjects received 2 mg/kg UX003 QOW for 12 weeks. At Week 14, subjects continued on UX003 therapy and began a forced dose titration period for an additional 24 weeks at the dose sequence of 1, 4, and 2 mg/kg UX003 QOW as follows:

- 1 mg/kg UX003 for 8 weeks beginning on Week 14, then
- 4 mg/kg UX003 for 8 weeks beginning on Week 22, then
- 2 mg/kg UX003 for 8 weeks beginning on Week 30.

Following the 24 week forced dose titration period, subjects who continued on treatment (continuation period) received 2 mg/kg UX003 QOW beginning at Week 38 for up to an additional 36 weeks.

After the continuation period, subjects who elected to continue drug treatment were transitioned to the long-term extension period of the study where they were treated with UX003 at 4 mg/kg beginning at Week 74, for up to an additional 168 weeks.

| Serious adverse events | UX003 | | |
|---|----------------|--|--|
| Total subjects affected by serious adverse events | | | |
| subjects affected / exposed | 2 / 3 (66.67%) | | |
| number of deaths (all causes) | 0 | | |
| number of deaths resulting from adverse events | 0 | | |
| Surgical and medical procedures | | | |
| Inguinal hernia repair | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences causally related to treatment / all | 0 / 1 | | |
| deaths causally related to treatment / all | 0 / 0 | | |
| Nervous system disorders | | | |
| Spinal cord compression | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences causally related to treatment / all | 0 / 2 | | |
| deaths causally related to treatment / all | 0 / 0 | | |

| | | | |
|--|----------------------------------|--|--|
| Cerebral ventricle dilatation subjects affected / exposed occurrences causally related to treatment / all deaths causally related to treatment / all | 1 / 3 (33.33%) 0 / 1 0 / 0 | | |
| General disorders and administration site conditions Oedema peripheral subjects affected / exposed occurrences causally related to treatment / all deaths causally related to treatment / all | 1 / 3 (33.33%) 0 / 1 0 / 0 | | |
| Gastrointestinal disorders Incarcerated inguinal hernia subjects affected / exposed occurrences causally related to treatment / all deaths causally related to treatment / all | 1 / 3 (33.33%) 0 / 4 0 / 0 | | |
| Musculoskeletal and connective tissue disorders Osteoarthritis subjects affected / exposed occurrences causally related to treatment / all deaths causally related to treatment / all | 1 / 3 (33.33%) 0 / 2 0 / 0 | | |

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

| | | | |
|--|--|--|--|
| Non-serious adverse events | UX003 | | |
| Total subjects affected by non-serious adverse events subjects affected / exposed | 3 / 3 (100.00%) | | |
| Investigations Body temperature increased subjects affected / exposed occurrences (all) Weight increased subjects affected / exposed occurrences (all) | 1 / 3 (33.33%) 2 2 / 3 (66.67%) 2 | | |
| Neoplasms benign, malignant and unspecified (incl cysts and polyps) | | | |

| | | | |
|--|--|--|--|
| Papilloma subjects affected / exposed occurrences (all) | 1 / 3 (33.33%) 1 | | |
| Injury, poisoning and procedural complications Ligament sprain subjects affected / exposed occurrences (all) Skin abrasion subjects affected / exposed occurrences (all) | 1 / 3 (33.33%) 1 1 / 3 (33.33%) 1 | | |
| Nervous system disorders Dizziness subjects affected / exposed occurrences (all) Nystagmus subjects affected / exposed occurrences (all) Reflexes abnormal subjects affected / exposed occurrences (all) Visual field defect subjects affected / exposed occurrences (all) | 1 / 3 (33.33%) 1 1 / 3 (33.33%) 1 1 / 3 (33.33%) 1 1 / 3 (33.33%) 1 | | |
| Blood and lymphatic system disorders Anaemia subjects affected / exposed occurrences (all) | 1 / 3 (33.33%) 1 | | |
| General disorders and administration site conditions Discomfort subjects affected / exposed occurrences (all) Gait disturbance subjects affected / exposed occurrences (all) Infusion site extravasation | 1 / 3 (33.33%) 1 1 / 3 (33.33%) 1 | | |

| | | | |
|---|---------------------|--|--|
| subjects affected / exposed occurrences (all) | 1 / 3 (33.33%) 3 | | |
| Oedema peripheral subjects affected / exposed occurrences (all) | 1 / 3 (33.33%) 1 | | |
| Pyrexia subjects affected / exposed occurrences (all) | 1 / 3 (33.33%) 3 | | |
| Generalised Oedema subjects affected / exposed occurrences (all) | 1 / 3 (33.33%) 1 | | |
| Gastrointestinal disorders | | | |
| Constipation subjects affected / exposed occurrences (all) | 1 / 3 (33.33%) 1 | | |
| Diarrhoea subjects affected / exposed occurrences (all) | 2 / 3 (66.67%) 2 | | |
| Oral mucosal erythema subjects affected / exposed occurrences (all) | 1 / 3 (33.33%) 1 | | |
| Toothache subjects affected / exposed occurrences (all) | 1 / 3 (33.33%) 1 | | |
| Vomiting subjects affected / exposed occurrences (all) | 2 / 3 (66.67%) 3 | | |
| Respiratory, thoracic and mediastinal disorders | | | |
| Bronchospasm subjects affected / exposed occurrences (all) | 1 / 3 (33.33%) 1 | | |
| Cough subjects affected / exposed occurrences (all) | 2 / 3 (66.67%) 2 | | |
| Increased viscosity of bronchial secretion | | | |

| | | | |
|--|----------------|--|--|
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences (all) | 1 | | |
| Nasal congestion | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences (all) | 1 | | |
| Oropharyngeal pain | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences (all) | 4 | | |
| Respiratory failure | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences (all) | 3 | | |
| Rhinitis allergic | | | |
| subjects affected / exposed | 2 / 3 (66.67%) | | |
| occurrences (all) | 2 | | |
| Rhinorrhoea | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences (all) | 2 | | |
| Skin and subcutaneous tissue disorders | | | |
| Decubitus ulcer | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences (all) | 1 | | |
| Erythema | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences (all) | 1 | | |
| Pruritus | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences (all) | 2 | | |
| Rash | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences (all) | 1 | | |
| Rash macular | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences (all) | 1 | | |
| Seborrhoeic dermatitis | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences (all) | 1 | | |

| | | | |
|---|-----------------|--|--|
| Musculoskeletal and connective tissue disorders | | | |
| Arthralgia | | | |
| subjects affected / exposed | 3 / 3 (100.00%) | | |
| occurrences (all) | 6 | | |
| Groin pain | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences (all) | 1 | | |
| Musculoskeletal pain | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences (all) | 1 | | |
| Musculoskeletal stiffness | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences (all) | 1 | | |
| Myalgia | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences (all) | 2 | | |
| Infections and infestations | | | |
| Acute sinusitis | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences (all) | 1 | | |
| Dermatitis infected | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences (all) | 1 | | |
| Ear infection | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences (all) | 2 | | |
| Molluscum contagiosum | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences (all) | 1 | | |
| Nasopharyngitis | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences (all) | 2 | | |
| Nosocomial infection | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences (all) | 1 | | |
| Otitis media | | | |

| | | | |
|------------------------------------|----------------|--|--|
| subjects affected / exposed | 2 / 3 (66.67%) | | |
| occurrences (all) | 2 | | |
| Pharyngitis | | | |
| subjects affected / exposed | 2 / 3 (66.67%) | | |
| occurrences (all) | 3 | | |
| Respiratory tract infection | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences (all) | 1 | | |
| Tonsillitis | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences (all) | 1 | | |
| Tooth abscess | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences (all) | 1 | | |
| Upper respiratory tract infection | | | |
| subjects affected / exposed | 2 / 3 (66.67%) | | |
| occurrences (all) | 7 | | |
| Urinary tract infection | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences (all) | 2 | | |
| Viral rash | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences (all) | 1 | | |
| Metabolism and nutrition disorders | | | |
| Increased appetite | | | |
| subjects affected / exposed | 1 / 3 (33.33%) | | |
| occurrences (all) | 1 | | |

More information

Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

| Date | Amendment |
|------------------|---|
| 22 November 2013 | The most important changes included the change from a single-center study to a global multi-center study, a clarification that the normal uGAG reference range was the age-specific normal mean. The definition of relatedness for AEs was updated, and pregnancy language was updated to include acceptable forms of contraception and the required length of time after the last dose of study drug that subjects should continue to use an acceptable form of contraception. |
| 01 December 2014 | The addition of the Long-term Extension Phase with selection of 4 mg/kg dose to the study design, and addition of PK sampling time points. |

Notes:

Interruptions (globally)

Were there any global interruptions to the trial? No

Limitations and caveats

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

This study was terminated due to business considerations unrelated to safety or efficacy concerns.

Notes: